SAGES Has Always Meant Community Service…

Now Even More So

SAGES President, Dr. Jo Buyske, has dedicated this year to developing a “more humanitarian SAGES.” To that end we have developed a series of new initiatives at the SAGES Annual Meeting.

Some community efforts we have undertaken in the past:

- In lieu of spending funds on floral centerpieces at dinners, SAGES has made a contribution to the local food bank
- Left over food – we have always assured that it is sent to a local food bank or shelter (for more than 20 years)
- After using potted plants for décor, we send them to senior citizen homes
- Sent leftover attendee bags to shelters or schools
- Sent leftover syllabi (when we had printed ones) to medical schools in developing nations.

This year’s new initiatives:

How to participate in each project:

- **Bone-Marrow Testing** – has been set-up on site. You don’t need an appointment and it’s a very simple and quick process. Please go to room 210 on Friday between 9am-3pm.

- **Donor Blood Bank** – has been set-up on site. Appointments were made in advance but there is still room for a “few walk-ins.” Please go to room 212 on Friday between the hours of 10am-2pm.

- Local high school students who are interested in medicine are joining us on Friday morning to see a real surgical meeting. Please stop by the SAGES membership booth if you want to mentor a student for the day.

- Old medical textbooks that you brought should be placed in the drop box marked “Drop your old text books here.” The books will be sent through “Books for China” to medical schools that need text books.

- Old medical instruments and supplies should be gently placed in the drop box marked “leave medical instruments and supplies here.” We are working with “Medwish,” a foundation set up to ship instruments and supplies to several developing countries. Ours will be shipped to: The Albert Schweitzer Hospital in Haiti. If you would like a tax deduction letter from Medwish for the value of your donation, please leave your business card in the envelope next to the drop box with the description of your donation on the back. To learn more about Medwish, check www.medwish.org

- Sign up at one of several medical volunteers’ desks: Go Global SAGES, Doctors Without Borders. Sign-Up desk is right outside the ballrooms on the 2nd Floor, near the SAGES Membership Booth.

- **Habitat For Humanity** – Please make sure to tell your guest(s) if they have not already signed up. Thursday afternoon 1 - 4 PM. We’ll help construct a home for a low income family. You’ll be with SAGES folks. You know it will be fun. Still a few spaces left if you did not sign up in advance. Sign up until Thursday at 11:00 AM at the SAGES membership booth. Bus departs Convention Center and begins loading at 12:30 PM.
### SAGES 2011 Schedule at a Glance

#### Program Chair: Brian J. Dunkin, M.D.

All Courses, Panels, Sessions at the Henry B. Gonzalez Convention Center
Ballrooms C1 and C2-3 – 3rd Floor     Rooms 214 and 217 – 2nd Floor

#### Wednesday, March 30, 2011

<table>
<thead>
<tr>
<th>Time</th>
<th>Location</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30 - 11:30 AM</td>
<td>Ballroom C2-3</td>
<td>Postgraduate Course: Foregut</td>
</tr>
<tr>
<td>7:30 - 11:30 AM</td>
<td>Lectures: Room 214C-D</td>
<td>Postgraduate &amp; Hands-On Course: Fundamentals for the Use of Safe Energy (FUSE)</td>
</tr>
<tr>
<td>1:00 - 5:00 PM</td>
<td>Lab: Exhibit Hall D</td>
<td>Postgraduate &amp; Hands-On Course: Minimizing MIS</td>
</tr>
<tr>
<td>12:30 - 5:00 PM</td>
<td>Lab: Exhibit Hall D</td>
<td>Postgraduate &amp; Hands-On Course: MIS Colorectal Surgery</td>
</tr>
<tr>
<td>12:00 - 1:00 PM</td>
<td>Room 217A-B</td>
<td>SAGES Foundation Awards Lunch</td>
</tr>
<tr>
<td>12:30 - 2:30 PM</td>
<td>Ballroom C2-3</td>
<td>Video Session: Unexpected Intraoperative Findings</td>
</tr>
<tr>
<td>1:00 - 3:00 PM</td>
<td>Room 214A-B</td>
<td>Symposium: Getting Paid for What You Do – EMR, Coding, Reimbursement</td>
</tr>
<tr>
<td>1:00 - 5:00 PM</td>
<td>Room 214C-D</td>
<td>Session: SAGES Pearls</td>
</tr>
<tr>
<td>2:30 - 5:00 PM</td>
<td>Ballroom C1</td>
<td>Panel: Incorporating FLS and FES Into Your Residency Training Program</td>
</tr>
<tr>
<td>3:00 - 5:00 PM</td>
<td>Room 214A-B</td>
<td>Symposium: Idea to Product – How to Commercialize Your Great Ideas</td>
</tr>
<tr>
<td>5:00 - 7:00 PM</td>
<td>Exhibit Hall C</td>
<td>Exhibit Hall Opening Welcome Reception</td>
</tr>
</tbody>
</table>

#### Thursday, March 31, 2011

<table>
<thead>
<tr>
<th>Time</th>
<th>Location</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 - 8:00 AM</td>
<td>Room 214C-D</td>
<td>SS01 – Flexible Endoscopy I</td>
</tr>
<tr>
<td>7:00 - 8:30 AM</td>
<td>Room 217C-D</td>
<td>SS02 – Colorectal I</td>
</tr>
<tr>
<td>7:00 - 8:30 AM</td>
<td>Room 214A-B</td>
<td>Session: Lessons Learned from Military Surgery</td>
</tr>
<tr>
<td>7:30 - 9:30 AM</td>
<td>Exhibit Hall C</td>
<td>Early Opening for SAGES Posters!</td>
</tr>
<tr>
<td>7:30 AM - 12:00 PM</td>
<td>Lectures: Ballroom C1</td>
<td>Postgraduate &amp; Hands-On Course: Bariatric Surgery</td>
</tr>
<tr>
<td>1:30 - 5:30 PM</td>
<td>Lab: Exhibit Hall D</td>
<td>Postgraduate &amp; Hands-On Course: Endoscopy for Surgeons</td>
</tr>
<tr>
<td>1:30 - 5:30 PM</td>
<td>Lectures: Ballroom C2-3</td>
<td>Postgraduate &amp; Hands-On Course: Endoscopy for Surgeons</td>
</tr>
<tr>
<td>8:30 - 10:00 AM</td>
<td>Room 214A-B</td>
<td>Panel: Safety for Surgeons</td>
</tr>
<tr>
<td>8:30 - 10:30 AM</td>
<td>Room 214C-D</td>
<td>SAGES/SSAT Joint Symposium: MI HPB &amp; Pancreatic Surgery – The Next Frontier</td>
</tr>
<tr>
<td>8:30 - 9:30 AM</td>
<td>Room 217C-D</td>
<td>Session: Learning Center Rounds</td>
</tr>
<tr>
<td>9:30 - 10:30 AM</td>
<td>Room 217C-D</td>
<td>Session: Poster Rounds</td>
</tr>
<tr>
<td>9:30 AM - 4:00 PM</td>
<td>Exhibit Hall C</td>
<td>Exhibits/Posters/Learning Center Open</td>
</tr>
<tr>
<td>10:30 AM - 12:00 PM</td>
<td>Room 217C-D</td>
<td>SAGES/ACS Joint Symposium: Obama Health Care Reform Update</td>
</tr>
<tr>
<td>10:30 AM - 12:00 PM</td>
<td>Room 214A-B</td>
<td>SAGES/JSES Joint Symposium: What’s New in Lower GI Surgery</td>
</tr>
<tr>
<td>10:30 AM - 12:00 PM</td>
<td>Room 214C-D</td>
<td>Panel: Getting New Technology Into Your Hospital</td>
</tr>
<tr>
<td>12:00 - 1:30 PM</td>
<td>Room 217A-B</td>
<td>Educator’s Lunch: Restoring Independence into Residency Training</td>
</tr>
<tr>
<td>1:30 - 3:30 PM</td>
<td>Room 214A-B</td>
<td>SS03 – Best of Video I</td>
</tr>
<tr>
<td>1:30 - 3:30 PM</td>
<td>Ballroom C1</td>
<td>SS04 – Foregut I</td>
</tr>
<tr>
<td>1:30 - 3:30 PM</td>
<td>Room 214C-D</td>
<td>Panel: When Bad Things Happen to Good Surgeons</td>
</tr>
<tr>
<td>2:30 PM</td>
<td>Exhibit Hall C</td>
<td>Coffee Break &amp; Cookies in Exhibit Hall!</td>
</tr>
<tr>
<td>3:30 - 5:30 PM</td>
<td>Room 214C-D</td>
<td>SS05 – Colorectal II</td>
</tr>
<tr>
<td>3:30 - 5:30 PM</td>
<td>Room 214A-B</td>
<td>Debate: Inguinal Hernia – Laparoscopic vs. Open</td>
</tr>
<tr>
<td>3:30 - 5:30 PM</td>
<td>Ballroom C2-3</td>
<td>Session: Managing Bariatric Surgery Emergencies for Non-Bariatric Surgeons</td>
</tr>
<tr>
<td>5:30 - 7:30 PM</td>
<td>Industry Education Evening Events</td>
<td></td>
</tr>
</tbody>
</table>

### Surgical Spring Week · SAGES 2011
# SAGES 2011 Schedule at a Glance

## Friday, April 1, 2011

<table>
<thead>
<tr>
<th>Time</th>
<th>Location</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30 - 9:00 AM</td>
<td>Ballroom C2-3</td>
<td>SS06 – Plenary Session I</td>
</tr>
<tr>
<td>9:00 - 9:30 AM</td>
<td>Ballroom C2-3</td>
<td>SAGES Presidential Address: Those to Whom Much is Given, Much is Required, Jo Buyske, MD</td>
</tr>
<tr>
<td>9:30 - 10:00 AM</td>
<td>Ballroom C2-3</td>
<td>SAGES Gerald Marks Lecture: War Surgery in Iraq &amp; Afghanistan: One Way to Serve, Cameron Wright, MD</td>
</tr>
<tr>
<td>10:00 AM - 4:00 PM</td>
<td>Exhibit Hall C</td>
<td>Exhibits/Posters/Learning Center Open</td>
</tr>
<tr>
<td>10:00 - 11:30 AM</td>
<td>Room 214C-D</td>
<td>Session: Lessons Learned from Private Practice – Efficiency and Cost Savings</td>
</tr>
<tr>
<td>10:00 AM - 12:30 PM</td>
<td>Room 214A-B</td>
<td>Panel: Controversies about Hernia Mesh</td>
</tr>
<tr>
<td>10:30 AM - 12:30 PM</td>
<td>Room 214C-D</td>
<td>Session: Robotic Surgery for General Surgeons – It’s Coming Your Way!</td>
</tr>
<tr>
<td>11:30 AM - 1:00 PM</td>
<td>Ballroom C1</td>
<td>Session: Advanced Ventral Hernia Repair</td>
</tr>
<tr>
<td>11:30 AM - 1:00 PM</td>
<td>Room 214C-D</td>
<td>SAGES/ALACE Joint Symposium: Integrating New Technologies, Old Tricks &amp; Operative Approaches</td>
</tr>
<tr>
<td>2:30 PM</td>
<td>Exhibit Hall C</td>
<td>Coffee Break &amp; Cookies in Exhibit Hall!</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>Room 214C-D</td>
<td>SS113 – Hernia</td>
</tr>
<tr>
<td>3:00 - 5:00 PM</td>
<td>Room 214A-B</td>
<td>Panel: Difficult Problems in Reasonable Patients – What To Do?</td>
</tr>
<tr>
<td>3:00 - 5:00 PM</td>
<td>Ballroom C1</td>
<td>Video Symposium: Illustrations of Managing Complications &amp; Reoperations in MIS</td>
</tr>
<tr>
<td>3:00 - 5:00 PM</td>
<td>Ballroom C2-3</td>
<td>SAGES/ASCRS Joint Symposium: Laparoscopic Colon Surgery – Why Aren’t More Surgeons Doing This Operation?</td>
</tr>
<tr>
<td>6:00 - 7:00 PM</td>
<td>Marriott RiverCenter Hotel Sazo Restaurant</td>
<td>SAGES Meet the Leadership Reception</td>
</tr>
<tr>
<td>7:30 - 11:00 PM</td>
<td>Sunset Station</td>
<td>A Grand Ol’ Taste of Texas: SAGES Main Event &amp; International Sing-Off</td>
</tr>
</tbody>
</table>

## Saturday, April 2, 2011

<table>
<thead>
<tr>
<th>Time</th>
<th>Location</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30 AM - 5:00 PM</td>
<td>Room 217A-B</td>
<td>SAGES Career Development Seminar</td>
</tr>
<tr>
<td>8:00 - 9:30 AM</td>
<td>Ballroom C2-3</td>
<td>SS14 – Plenary Session II</td>
</tr>
<tr>
<td>8:00 - 9:30 AM</td>
<td>Ballroom C2-3</td>
<td>SAGES Karl Storz Lecture: Blow the Whistle! Timeout for our Conflict of Interest Policies, David Rattner, MD</td>
</tr>
<tr>
<td>10:00 AM - 1:00 PM</td>
<td>Exhibit Hall C</td>
<td>Exhibits/Posters/Learning Center Open</td>
</tr>
<tr>
<td>10:00 - 11:30 AM</td>
<td>Room 214C-D</td>
<td>SS15 – Best of Video III</td>
</tr>
<tr>
<td>10:00 - 11:30 AM</td>
<td>Ballroom C1</td>
<td>Panel: Patient Safety</td>
</tr>
<tr>
<td>10:00 - 11:30 AM</td>
<td>Room 214A-B</td>
<td>Session: General Surgery in Obese Patients – Tips and Tricks</td>
</tr>
<tr>
<td>11:30 AM - 12:00 PM</td>
<td>Ballroom C1</td>
<td>Session: GERD and Paraesophageal Hernia</td>
</tr>
<tr>
<td>12:00 - 1:00 PM</td>
<td>Exhibit Hall C</td>
<td>FREE Lunch in Exhibit Hall for All Meeting Attendees</td>
</tr>
<tr>
<td>1:00 - 2:30 PM</td>
<td>Room 214A-B</td>
<td>SS16 – Education / Simulation</td>
</tr>
<tr>
<td>1:00 - 2:30 PM</td>
<td>Room 214C-D</td>
<td>SS17 – Solid Organ</td>
</tr>
<tr>
<td>1:00 - 2:30 PM</td>
<td>Ballroom C1</td>
<td>Panel: How Good Are You Really? Incorporating Patient Centered Measurement Tools Into Your Busy Practice</td>
</tr>
<tr>
<td>2:30 - 4:00 PM</td>
<td>Room 214C-D</td>
<td>SS18 – Hepatobiliary</td>
</tr>
<tr>
<td>2:30 - 4:00 PM</td>
<td>Ballroom C1</td>
<td>Session: Advancing Beyond Optical Imaging – We Can Do Better Than Relying on Our Eyes</td>
</tr>
<tr>
<td>2:30 - 4:00 PM</td>
<td>Room 214A-B</td>
<td>Session: Adolescent Surgery – They Look Like Adults, but Aren’t the Same</td>
</tr>
</tbody>
</table>
To continue our efforts to reduce waste and support the environment SAGES has revised and upgraded the Electronic Meeting Guide. This year, the guide will be available only at www.sages.org/2011/resource/.

The printed Final Program will include the regular schedule and course/panel outlines, as well as abstracts for Podium Presentations and the Posters of Distinction as well as a full listing of regular posters. However, all Abstracts, Digital Posters, and Postgraduate Course Syllabi will be available via the on-line meeting guide. The meeting guide will be accessible and supported by most mobile devices.

**New Technology Features for 2011**

**Dynamic Scheduler:** This year, the on line meeting guide will include a Dynamic Schedule Feature, allowing attendees to select sessions of interest and import them into their calendar systems.

**Second Chance Sessions:** Too busy to attend an interesting session? SAGES will help accommodate your busy meeting schedule by posting select sessions on line within 4 hours of the session ending. To view these videos, please follow the “Second Chance Sessions” tab from on line meeting guide menu.

**SELECTED SESSIONS INCLUDE:**

**Wednesday, March 30, 2011**
- 12:30 PM – 2:30 PM Unexpected Intraoperative Findings Video Session

**Thursday, March 31, 2011**
- 7:00 AM – 8:30 AM Military Session
- 8:30 AM – 10:00 AM Safety for Surgeons Panel: Is Your Profession Causing You Physical Harm?
- 10:30 AM – 12:00 PM SAGES/JSES What’s New in Lower GI Surgery Symposium
- 3:30 PM – 5:30 PM Inguinal Hernia Debates
- Managing Bariatric Surgery Emergencies for the Non Bariatric Surgeon

**Friday, April 1, 2011**
- 9:00 AM – 9:30 AM SAGES Presidential Address: Those To Whom Much Is Given, Much Is Required
- 9:30 AM – 10:00 AM Gerald Marks Lecture: War surgery in Iraq and Afghanistan: One Way to Serve
- 10:00 AM – 11:30 AM Controversies About Hernia Mesh Panel
- 1:30 PM – 3:30 PM SAGES/ALACE Symposium: Integrating New Technologies, Old Tricks, and Operative Approaches
- 3:30 PM – 5:30 PM SAGES/ASCRS Laparoscopic Colon Surgery Symposium: Why Aren’t More Surgeons Doing This Operation?

**SMS Updates:** Attendees that OPT IN for this feature during pre-meeting registration will receive important meeting updates via text message. This mechanism will also be utilized to communicate with confirmed speakers and faculty.

**2011 Meeting Twitter Feed:** Attendees can optimize their meeting experience by staying in tune with Real Time meeting trends. Participating SAGES Leadership will be tweeting meeting updates regarding ongoing presentations, critical debates, and other important meeting information.

Follow Us Now @sages2011 or link to us on site via the “Meeting Twitter” tab on the On Line Meeting Guide.

**Audience Response Via SMS:** Selected Sessions will accept audience questions via text. To submit questions attendees can simply text their questions to (909) 833-1302 (Information will also be available in the session rooms).

**SELECTED SESSIONS INCLUDE:**

**Wednesday, March 30, 2011**
- 12:30 PM – 2:30 PM Unexpected Intraoperative Findings Video Session

**Thursday, March 31, 2011**
- 3:30 PM – 5:30 PM Managing Bariatric Surgery Emergencies for the Non Bariatric Surgeon

**Friday, April 1, 2011**
- 10:00 AM – 11:30 AM Controversies About Hernia Mesh Panel
Convention Center Floor Plans

SAGES 2011 Scientific Session & Postgraduate Course

Concourse Level

Street Level
SAGES Policy on Conflict of Interest

A. Identifying Conflicts of Interest

SAGES has implemented a five-tiered approach towards identifying potential conflicts of interest.

1. Members of committees involved in the planning of CME activities, including the Board of Governors, must provide a financial disclosure. These disclosures are sent to the committee in advance of each committee meeting. Attendees are reminded about the disclosure policy at each committee meeting, and any committee member with a conflict is asked to recuse him or herself from the discussion of any CME activities.

2. Course Directors for CME activities must provide their financial disclosures along with their suggested course outline and faculty. This information is forwarded to the Conflict of Interest Task Force, who then determines whether or not a potential conflict exists and makes suggested edits.

3. Invited faculty for CME activities must provide their financial disclosures upon invitation to serve as faculty.

4. For abstract submissions for the scientific session, the presenting and senior authors must provide disclosures. Abstracts are peer reviewed in a blinded fashion by multiple reviewers and are selected for presentation based on scientific merit. All disclosures are provided to the Program Committee during the “Put-The-Program-Together” meeting at which abstracts are selected for presentation.

5. All speakers at SAGES CME activities must display a list of financial disclosures on the first slide of their presentation.

B. Managing Potential Conflicts of Interest

SAGES has implemented several mechanisms to manage conflicts of interest prior to an educational activity.

1. Self-management, such as the committee member recusing him or herself from discussion of CME activities.

2. The SAGES Conflict of Interest Task force reviews all Course Director’s disclosures, proposed course outlines and faculty lists. The Conflict of Interest Task Force will make edits to the course outline or faculty list if necessary.

3. The SAGES disclosure form requires faculty to provide management suggestions if there is a relationship with a commercial entity. This information is forwarded to the Course Director, who is responsible for determining whether or not a conflict exists and if so, how to manage this conflict.

4. If a conflict is determined, then a letter is sent to the faculty member, requiring them to adhere to the management technique or else recuse him or herself from the presentation.

5. During the session, the Course Director observes the presentations and makes note of commercial bias. If any is perceived, this is immediately reported to the staff.

6. All attendees of CME activities are requested to make note of perceived commercial bias in activity evaluations. The Conflict of Interest Task Force and/or the CME Committee will investigate substantive concerns.

SAGES Mission Statement

“Our mission is to provide leadership in surgery, particularly gastrointestinal and endoscopic surgery, to optimize patient care through education, research and innovation.”

- SAGES has evolved over the last 25 years into a leading society for gastrointestinal surgery, endoscopy and minimal invasive technology.

- Not only does SAGES provide leadership in clinical care, but it also helps surgeons optimize patient care by providing direction for cutting edge technology, basic and translational science, and educational opportunities.

- SAGES represents leadership in the surgical world for gastrointestinal disease.

- SAGES is the society to improve your clinical skills.
Commercial Bias Reporting Form

You are encouraged to ...

1) Document (on this form) any concerns about commercially-biased presentations/ materials during educational sessions, and

2) Immediately take your completed form to the SAGES staff at Meeting Registration at the Henry B. Gonzalez Convention Center or fax it to (310) 437-0585.

Your feedback will be shared with a member of the Conflict of Interest Task Force, Program and/or Continuing Education Committee, who will make the faculty and course chair(s) aware of these concerns.

Commercial Bias

The Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) has an obligation to the medical profession and society as a whole to elucidate bias in order to protect the objectivity, scientific integrity and quality of its continuing medical education (CME) programs and to provide CME in an ethical and impartial manner. Bias is defined when a preference or predisposition exist toward a particular perspective or result that interferes with an individual’s ability to be impartial, unprejudiced or objective in order to further personal gain and disregard for data. Particular preferences may be favorable or unfavorable. When bias exists, impartial judgment and neutrality may be compromised. Bias may be minimized through a declaration of conflict of interest or commercial interests, an evaluation of peer-reviewed evidence-based medicine with an integration of clinical expertise and/or experience, and an assertion of published sources for evidence-based reporting. SAGES requires presenters at all educational events to specifically avoid introducing bias, commercial or otherwise, into their presentations.

Presentation: (eg session name, etc)

Commercial Bias by: (ie faculty name, company rep)

Promotion via: (eg handouts, slides, what they said, actions)

Commercial Bias about:

(check all that apply)

___ Patient treatment/management recommendations weren’t based on strongest levels of evidence available.

___ Emphasis was placed on one drug or device versus competing therapies, and no evidence was provided to support its increased safety and/or efficacy.

___ Trade/brand names were used.

___ Trade names versus generics were used for all therapies discussed.

___ The activity was funded by industry and I perceived a slant toward the grantors.

___ The faculty member had a disclosure and I perceived a slant toward the companies with which he/she has relationships.

___ Other (please describe): ________________________________

Please return this form to SAGES Meeting Registration or fax to (310) 437-0585.
The Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to sponsor Continuing Medical Education for physicians.

The Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) designates this live activity for a maximum of 38.25 AMA PRA Category 1 Credit(s)™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

**CME Worksheet for the 2011 SAGES Scientific Session & Postgraduate Course:**

This is NOT your CME credit form. Please use the worksheet to track the number of CME hours you attend for each activity. All attendees wishing to receive a CME certificate for activities attended at the 2011 SAGES Scientific Session & Postgraduate Course must first complete an on-line meeting evaluation form. Attendees will be able to print and re-print their certificates throughout the year beginning two weeks after the conclusion of the meeting.

- **On-site:** There will be on-site kiosks located near the registration area to complete the meeting evaluation and credit claim form. Two weeks after the conclusion of the meeting, an email will notify attendees that the certificates are available to print.
- **During or after the meeting:** Attendees will also have access to the on-line meeting evaluation and credit claim form via a link on the SAGES website. Be sure to retain your Conference Badge as the ID number will be your online PIN number. An email will also be sent, reminding attendees of this service. Those wishing to obtain a simple certificate of attendance may do so at the Evaluation Kiosks.

**Self-Assessment CME Credit, Part 2 of the American Board of Surgery (ABS) Maintenance of Certification Program:**

This activity has also been designated as Self-Assessment CME credit, applicable to Part 2 of the ABS MOC program. In order to claim Self-Assessment credit, attendees must complete the evaluation and CME credit claim form (at CME kiosks in the convention center or via the SAGES website following the meeting) and complete a post meeting assessment in July. All surgeons are required to have one third of their required Category 1 CME designated as Self-Assessment credit over a three year cycle. For additional information on the ABS MOC program and its requirements, visit the ABS website at: http://home.absurgery.org/

### Wednesday

<table>
<thead>
<tr>
<th>Activity</th>
<th>Hours I Attended</th>
<th>Credits Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fundamentals for the Use of Safe Energy (FUSE) PG Course</td>
<td>3.75</td>
<td></td>
</tr>
<tr>
<td>Foregut Postgraduate Course</td>
<td>3.75</td>
<td></td>
</tr>
<tr>
<td>Minimizing MIS Postgraduate Course</td>
<td>3.5</td>
<td></td>
</tr>
<tr>
<td>MIS Colorectal Surgery Postgraduate Course</td>
<td>3.5</td>
<td></td>
</tr>
<tr>
<td>HO Course: FUSE</td>
<td>4.0</td>
<td></td>
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<tr>
<td>HO Course: Minimizing MIS</td>
<td>4.5</td>
<td></td>
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<tr>
<td>HO Course: MIS Colorectal Surgery</td>
<td>4.5</td>
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</tr>
<tr>
<td>Symposium: Getting Paid for What You Do: EMR, Coding, Reimbursement</td>
<td>2</td>
<td></td>
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<tr>
<td>Symposium: Idea-to-Product</td>
<td>2</td>
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<tr>
<td>Unexpected Intraoperative Findings</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Incorporating FLS &amp; FES Into Your Residency Training Program</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>SAGES Pearls</td>
<td>3.75</td>
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</table>

**SUBTOTAL**

MAX: 8.25

### Thursday

<table>
<thead>
<tr>
<th>Activity</th>
<th>Hours I Attended</th>
<th>Credits Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endoscopy for Surgeons Postgraduate Course</td>
<td>4.25</td>
<td></td>
</tr>
<tr>
<td>Bariatric (Sleeve and Band) Postgraduate Course</td>
<td>4.25</td>
<td></td>
</tr>
<tr>
<td>HO Course: Endoscopy for Surgeons</td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td>HO Course: Bariatric Sleeve and Band</td>
<td>4.0</td>
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</tr>
<tr>
<td>Scientific Sessions</td>
<td>5.0</td>
<td></td>
</tr>
<tr>
<td>Safety for Surgeons</td>
<td>1.5</td>
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</tr>
<tr>
<td>Symposium: SAGES/JSES What's New in Lower GI Surgery</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>Inguinal Hernia: Laparoscopic or Open Debate</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Symposium: SAGES/SSAT HPB-The Next Frontier</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Getting New Technology Into Your Hospital</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>When Bad Things Happen to Good Surgeons</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Symposium: SAGES/ACS - Health Care Reform</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>Education Luncheon: Restoring Independence</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>Managing Bariatric Surgery Emergencies for Non-Bariatric Surgeons</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Military Session</td>
<td>1.5</td>
<td></td>
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**SUBTOTAL**

MAX: 10.5

### Friday

<table>
<thead>
<tr>
<th>Activity</th>
<th>Hours I Attended</th>
<th>Credits Available</th>
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</thead>
<tbody>
<tr>
<td>Scientific Sessions (panels, debates, lectures and abstract presentations including plenary)</td>
<td>9</td>
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<tr>
<td>Fellowship Council Lunch</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Emerging Technology Session* no CME</td>
<td>0</td>
<td></td>
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</table>

**SUBTOTAL**

MAX: 10

### Saturday

<table>
<thead>
<tr>
<th>Activity</th>
<th>Hours I Attended</th>
<th>Credits Available</th>
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</thead>
<tbody>
<tr>
<td>Learning Center * (although the Learning Center is open Thurs-Sat, only 3.0 credits are available)</td>
<td>3.0</td>
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<tr>
<td>Scientific Sessions (panels, debates, lectures and abstract presentations including plenary)</td>
<td>6.5</td>
<td></td>
</tr>
</tbody>
</table>

**SUBTOTAL**

MAX: 9.5
SAGES 2011 Meeting Leaders

Program Chair: Brian J. Dunkin, M.D.

2011 Course Chairs & Unit Coordinators

Equipment Czar Chairs:
Jose M. Martinez, M.D.
Jeffrey W. Hazey, M.D.

Poster Chairs:
Melina C. Vassiliou, M.D.
Benjamin K. Poulou, M.D.

Video Chairs:
Leena Khaitan, M.D.
Archana Ramaswamy, M.D.

Learning Center Chairs:
Brian P. Jacob, M.D.
Kent R. Van Sickle, M.D.

Bariatric Surgery – Sleeve and Band PG & HO Course Chairs:
Marina Kurian, M.D. &
Kevin M. Reavis, M.D.

Endoscopy for Surgeons
PG & HO Course Chairs:
Klaus Thaler, M.D.
Debbie F. Youngelman, M.D.

Fundamentals for the Use of Safe Energy HO Course Chairs:
J. Esteban Varela, M.D.
Pascal R. Fuchshuber, M.D.

Fundamentals for the Use of Safe Energy (FUSE) PG Course:
Pascal R. Fuchshuber, M.D.
Liane S. Feldman, M.D.

Minimizing MIS HO Course Chairs:
Daniel J. Scott, M.D.
Giovanni Dapri, M.D.

Minimizing MIS PG Course Chairs:
Aurora Dawn Pryor, M.D.
Patrick R. Reardon, M.D.

MIS Colorectal Surgery HO Course Chairs:
Mark H. Whitfield, M.D.
Eric M. Haas, M.D.

MIS Colorectal Surgery PG Course Chairs:
Steven D. Wexner, M.D.
Jeffrey W. Milson, M.D.

Foregut PG Course Chairs:
Brant K. Oelschlager, M.D.
Steven R. DeMeester, M.D.

Education Lunch Chairs:
Brent D. Matthews, M.D.
John D. Mellingler, M.D.

Fellowship Council Lunch Chairs:
Bruce D. Schirmer, M.D.
Maurice E. Arregui, M.D.

Emerging Technology Session Chairs:
Daniel M. Herron, M.D.
Ronald Hanson Clements, M.D.

Resident/Fellows Session Chairs:
James G. Bittner, M.D.
Lora M. Melman, M.D.

SAGES Program Committee

Chair: W. Scott Melvin, M.D.
Co-Chair: Daniel M. Herron, M.D.

Mehran Anvari, M.D.
James G. Bittner, M.D.
Steven P. Bowers, M.D.
Brian J. Dunkin, M.D.
Michael B. Edye, M.D.
Edward L. Felix, M.D.
Denise W. Gee, M.D.
Carroll M. Harmon, M.D.
Daniel M. Herron, M.D.
Michael D. Holzman, M.D.
Santiago Horgan, M.D.
Gretchen Purcell Jackson, M.D.
Daniel Bougere Jones, M.D.
Namir Katkhouda, M.D.
Marina Kurian, M.D.
Dimitrios A. Linos, M.D.

Brent D. Matthews, M.D.
Marian P. McDonald, M.D.
Stephen S. McNatt, M.D.
W. Scott Melvin, M.D.
Michael S. Nussbaum, M.D.
Dmitry Oleynikov, M.D.
William S. Richardson, M.D.
Raul J. Rosenthal, M.D.
Barry A. Salky, M.D.
Christopher M. Schilchta, M.D.
Steven D. Schwaztzberg, M.D.
Daniel J. Scott, M.D.
Deal E. Seymour, M.D.
Carl J. Westcott, M.D.
Manabu Yamamoto, M.D.
Tonia M. Young-Fadok, M.D.
Natan Zundel, M.D.

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Matthew M. Hutter, M.D.
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Eli N. Lerner, M.D., AMA HOD Rep.
Jeffrey M. Marks, M.D.
John D. Mellingler, M.D.
Ninh Tuan Nguyen, M.D.
Brant K. Oelschlager, M.D.
Raymond P. Onders, M.D.
Alfons Pomp, M.D.
Aurora Dawn Pryor, M.D.
*David W. Rattner, M.D.
Raul J. Rosenthal, M.D.
*Bruce D. Schirmer, M.D., ABS Rep.
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Paresh C. Shah, M.D.
*Mark A. Talaimini, M.D.
Thadeus L. Trus, M.D.
Vic Velanovich, M.D.
*Steven D. Wexner, M.D.
Tonia M. Young-Fadok, M.D

* = Past President

FLS Testing Available!
Thursday, March 31 - Saturday, April 2, 2011
Contact FLS@sages.org for more details or to schedule your test.
SAGES 2011 Meeting Leaders

SAGES Panel/Session/Symposium/Debates Chairs/Co-Chairs:

Inguinal Hernia, Laparoscopic, and Open Debate Chairs:
Edward L. Felix, M.D.
Robert J. Fitzgibbons, M.D.

Controversies About Hernia Mesh Panel Chairs:
Bruce J. Ramshaw, M.D.
Michael G. Franz, M.D.

Getting New Technology Into Your Hospital Panel Chairs:
Dennis L. Fowler, M.D.
Anand Joshi, M.D.

How Good are You Really? Incorporating Advanced Ventral Hernia Repair Session Chairs:
Steven D. Schwaitzberg, M.D.
John D. Mellinger, M.D.

Getting Paid for What You Do - EMR, Coding, Reimbursement Symposium Chairs:
Pareesh C. Shah, M.D.
Michael B. Edye, M.D.

Idea to Product Symposium Chairs:
Dmitry Oleynikov, M.D.
Raymond P. Onders, M.D.

SAGES/ACS - Obama Health Care Reform Symposium Chairs:
David W. Rattner, M.D.
David B. Hoyt, M.D.

SAGES/ALACE Symposium Chairs:
Natan Zundel, M.D.
Jeffrey L. Ponsky, M.D.

SAGES/ASCRS - Laparoscopic Colon Surgery Symposium Chairs:
Tonia M. Young-Fadok, M.D.
John H. Marks, M.D.

SAGES/JSES What’s New in Lower GI Surgery Symposium Chairs:
Manabu Yamamoto, M.D.
Barry A. Salky, M.D.

SAGES/SSAT Minimally Invasive Hepatobiliary and Pancreatic Surgery Symposium Chairs:
Craig P. Fischer, M.D.
Horacio J. Asbun, M.D.

Video - Illustrations of Managing Complications and Re-Operations in MIS Video Symposium Chairs:
Mark A. Talamini, M.D.
Michael S. Nussbaum, M.D.

SAGES Past Presidents

Gerald Marks, MD 1981 - 1983
Kenneth Forde, MD 1983 - 1984
Thomas L. Dent, MD 1984 - 1985
James A. Lind, MD 1985 - 1986
John A. Coller, MD 1986 - 1987
Theodore R. Schrock, MD 1987 - 1988
Talmadge A. Bowden, MD 1988 - 1989
Lee E. Smith, MD 1989 - 1990
Jeffrey Ponsky, MD 1990 - 1992
Frederick L. Greene, MD 1992 - 1993
George Berci, MD 1993 - 1994
Bruce V. MacFadyen, Jr., MD 1994 - 1995
Col. Richard M. Satava, MD 1995 - 1996
Greg Stiegmann, MD 1996 - 1997
Desmond Birkett, MD 1997 - 1998
John Hunter, MD 1998 - 1999
Jeffrey H. Peters, MD 1999 - 2000
Nathaniel J. Soper, MD 2000 - 2001
L. William Traverso, MD 2001 - 2002
Bruce D. Schirmer, MD 2002 - 2003
Lee Swanstrom, MD 2003 - 2004
David Rattner, MD 2004 - 2005
Daniel Deziel, MD 2005 - 2006
Lee Swanstrom, MD 2003 - 2004
David Rattner, MD 2004 - 2005
Lee Swanstrom, MD 2003 - 2004
David Rattner, MD 2004 - 2005
David B. Hoyt, M.D. 2005 - 2006
Steven Wexner, MD 2006 - 2007
Steve Eubanks, MD 2007 - 2008
Mark Talamini, MD 2008 - 2009
C. Daniel Smith, MD 2009 - 2010

Important AV Information

You may now upload your presentation online any time before the meeting and until the night before your session during the meeting. Please load your presentation online (http://sages.presentationman.com/).

Please Note: Even if you have submitted your presentation online you must visit the Speaker Prep room no later than 2 hours before your presentation. If you do not, your session moderator may not allow you to present.

Speaker Prep Hours – Room 216

3/29/11 12:00 Noon - 5:00 pm
3/30/11 5:30 am - 5:00 pm
3/31/11 5:30 am - 5:00 pm
4/1/11 5:30 am - 6:00 pm
4/2/11 5:30 am - 6:00 pm
**Wednesday, March 30, 2011**

<table>
<thead>
<tr>
<th>Time</th>
<th>Location</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30 - 11:30 AM</td>
<td>Ballroom C2-3</td>
<td>Postgraduate Course: Foregut</td>
</tr>
<tr>
<td>7:30 - 11:30 AM</td>
<td>Lectures: Room 214C-D</td>
<td>Postgraduate &amp; Hands-On Course: Fundamentals for the Use of Safe Energy (FUSE)</td>
</tr>
<tr>
<td>1:00 - 5:00 PM</td>
<td>Lab: Exhibit Hall D</td>
<td>Postgraduate &amp; Hands-On Course: Minimizing MIS</td>
</tr>
<tr>
<td>7:30 - 11:30 AM</td>
<td>Lectures: Room 214A-B</td>
<td>Postgraduate &amp; Hands-On Course: MIS Colorectal Surgery</td>
</tr>
<tr>
<td>12:30 - 5:00 PM</td>
<td>Lab: Exhibit Hall D</td>
<td>SAGES Foundation Awards Lunch</td>
</tr>
<tr>
<td>12:00 - 1:00 PM</td>
<td>Room 217A-B</td>
<td>Symposium: Getting Paid for What You Do – EMR, Coding, Reimbursement</td>
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<tr>
<td>12:30 - 2:30 PM</td>
<td>Ballroom C2-3</td>
<td>Video Session: Unexpected Intraoperative Findings</td>
</tr>
<tr>
<td>1:00 - 3:00 PM</td>
<td>Room 214A-B</td>
<td>Session: SAGES Pearls</td>
</tr>
<tr>
<td>1:00 - 5:00 PM</td>
<td>Room 214C-D</td>
<td>Panel: Incorporating FLS and FES Into Your Residency Training Program</td>
</tr>
<tr>
<td>2:30 - 5:00 PM</td>
<td>Ballroom C1</td>
<td>Symposium: Idea to Product – How to Commercialize Your Great Ideas</td>
</tr>
<tr>
<td>3:00 - 5:00 PM</td>
<td>Room 214A-B</td>
<td>Exhibit Hall Opening Welcome Reception</td>
</tr>
</tbody>
</table>

**Unique Features of the 2011 SAGES Program**

» Attire for meeting is business casual – Leave your ties at home and western wear encouraged!
» All didactic postgraduate courses are FREE with your meeting registration!
» Humorous Video Shorts are being added to the Sing-off – submit your videos now!
» Special sessions of interest for Allied Health Care Professionals!
  • Fundamentals for the Use of Safe Energy (FUSE) Postgraduate Course
  • Incorporating FLS and FES into Your Residency Panel
  • Device Development: Idea to Product – How to Commercialize Your Great Ideas
  • Safety for Surgeons Panel: Is Your Profession Causing You Physical Harm?
  • SAGES/ACS Obama Health Care Reform Symposium: An Update
  • Getting New Technology Into Your Hospital
  • Lessons Learned From Private Practice Session: Efficiency and Cost Saving
  • Video Symposium: Illustrations of Managing Complications and Re-Operations in MIS
  • SAGES/ASCRS Laparoscopic Colon Surgery Symposium: Why Aren’t More Surgeons Doing This Operation?
  • Patient Safety Panel
  • General Surgery in Obese Patients Session: Tips and Tricks
  • Adolescent Surgery Session: They Look Like Adults, but Aren’t the Same

» The entire 2011 meeting has been designated for Self-Assessment CME Credit, applicable to Part 2 of the American Board of Surgery (ABS) Maintenance of Certification (MOC) Program. In order to claim Self-Assessment credit, attendees must complete the evaluation and CME credit claim online forms and complete a post meeting assessment in July, 2011. All surgeons are required to have one third of their required Category 1 CME designated as Self-Assessment credits over a three-year cycle. For additional information on the ABS MOC program and its requirements, visit the ABS website at: http://home.absurgery.org/default.jsp?exam-moc.
Foregut Postgraduate Course

**Chair:** Brant Oelschlager, M.D.; **Co-Chair:** Steven DeMeester, M.D.

This Postgraduate course will explore many of the current and future topics in foregut surgery. We will concentrate on MIS and endoscopic approaches to GERD, hiatal hernias, and related diseases. A fantastic panel of leading surgeons will share their thoughts and participate in a lively, interactive discussion.

**Objectives:**
At the conclusion of this session, participants will be able to:
- Identify and evaluate appropriate patients for various foregut procedures
- Describe current surgical and endoscopic techniques in foregut surgery
- List appropriate tips and tricks for Nissen fundoplication, paraesophageal hernia repair, and redo operations
- Describe the role of new and emerging techniques and procedures in foregut diseases

**SCHEDULE**

**7:30 AM**  
Introduction  
Brant Oelschlager, M.D. & Steven DeMeester, M.D.

**Fundamentals and Essentials of Laparoscopic Nissen Fundoplication**

**7:35 AM**  
What You Need to Know Before You Do a Fundoplication: The Current State of the Art in the Non-Surgical Treatment and Work-up for GERD  
Roger Tatum, M.D.

**7:50 AM**  
Technical Pearls in Laparoscopic Fundoplication – Tricks and Tools for a Safe and Effective Operation  
Nathaniel Soper, M.D.

**8:05 AM**  
The New Wave of Alternatives: Endoscopic Fundoplication, Single Incision/Port, Magnets – Are They Really Better Than a Nissen?  
Blair Jobe, M.D.

**8:20 AM**  
How Should We Treat Reflux in Kids: Indications for Fundoplication and LT Results  
James Geiger, M.D.

**8:35 AM**  
Discussion

**Dealing with the Complications of GERD and Other Foregut Diseases**

**8:55 AM**  
How Should We Manage Barrett’s Esophagus in the Age of Modern Endoscopy  
Tom Watson, M.D.

**9:10 AM**  
The Range of Possibilities for Upper GI Endoscopy: From Diagnostics to Stents to NOTES  
Steven DeMeester, M.D.

**9:25 AM**  
What Operation Should I Do?  
Vic Velanovich, M.D.

**9:40 AM**  
Discussion

**10:00 AM**  
BREAK

**The Complicated Hiatus**

**10:15 AM**  
Paraesophageal Hernia Repair in 2011 – Should it be Repaired? If so, How?  
Christy Dunst, M.D.

**10:30 PM**  
How Should I Manage a Recurrent Hiatal Hernia: Is it the Hiatus or Esophagus, and Does it Matter?  
Jeffrey Peters, M.D.

**10:45 PM**  
How Many Redo Fundoplications Can/Should Be Done in One Patient – Implications for First to Fourth Time Operations  
C. Daniel Smith, M.D.

SAGES acknowledges an educational grant in support of this course from Gore & Associates

---

**Save the Date!**

**SAGES Scientific Session & Postgraduate Course (with IPEG)**  
March 7 - 10, 2012, San Diego, CA

**Please note:** Earlier than most SAGES meetings!

**SAGES Scientific Session & Postgraduate Course**  
April 17 - 20, 2013, Baltimore, MD

**SAGES Scientific Session & Postgraduate Course**  
April 2 - 5, 2014, Salt Lake City, UT

**SAGES Scientific Session & Postgraduate Course**  
April 15 - 18, 2015, Gaylord Opryland Hotel, Nashville, TN

To fully comply with ACCME regulations, all SAGES Meeting attendees must have their badge scanned before entering any course or session room in order to receive CME credit for that event.
Fundamentals for the Use of Safe Energy (FUSE) Postgraduate Course

**Chair:** Pascal Fuchshuber, M.D.; **Co-Chair:** Liane Feldman, M.D.  
**Allied Health Personnel encouraged to attend.**

The PG course is open to all physicians and allied health care professionals. It is designed to communicate and promote best practice for the use of electromechanical, ultrasonic, and microwave energy sources in the OR. Any healthcare professional who has ever picked up an energy device in the OR such as a “Bovie” or ultrasonic dissector will better understand how it works, when to apply it, and what possible hazards and errors in use exists.

**Objectives:**
At the conclusion of this session, participants will be able to:
- Describe the basic technology of energy sources in the OR
- Demonstrate the correct use and indications of energy sources in clinical practice
- Assess the potential complications, hazards, and errors in the use of surgical energy sources
- Evaluate the potential interactions of energy sources with other medical devices

**SCHEDULE**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Facilitator(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30 AM</td>
<td>Introduction</td>
<td>Pascal Fuchshuber, M.D. &amp; Liane Feldman, M.D.</td>
</tr>
<tr>
<td>7:35 AM</td>
<td>FUSE – Overview</td>
<td>Steven Schwartzberg, M.D.</td>
</tr>
<tr>
<td>7:45 AM</td>
<td>Fundamentals of Electro-Surgery – Part 1</td>
<td>Malcolm Munro, M.D.</td>
</tr>
<tr>
<td>8:05 AM</td>
<td>Fundamentals of Electro-Surgery – Part 2</td>
<td>L. Michael Brunt, M.D.</td>
</tr>
<tr>
<td>8:25 AM</td>
<td>RF Based Electrosurgical Systems – Monopolar Devices</td>
<td>Carl Randy Voyles, M.D.</td>
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<tr>
<td>8:40 AM</td>
<td>RF Based Electrosurgical Systems – Bipolar Devices</td>
<td>Dana Portenier, M.D.</td>
</tr>
<tr>
<td>8:55 AM</td>
<td>RF Based Electrosurgical Systems – Argon Beam and RFA</td>
<td>Pascal Fuchshuber, M.D.</td>
</tr>
<tr>
<td>9:10 AM</td>
<td>RF Based Electrosurgical Systems – Flexible Devices for Endoscopy</td>
<td>Brian Dunkin, M.D.</td>
</tr>
<tr>
<td>9:25 AM</td>
<td>Discussion</td>
<td></td>
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<tr>
<td>9:40 AM</td>
<td>BREAK</td>
<td></td>
</tr>
<tr>
<td>9:55 AM</td>
<td>Ultrasonic Energy Systems – Part 1</td>
<td>Esteban Varela, M.D.</td>
</tr>
<tr>
<td>10:10 AM</td>
<td>Ultrasonic Energy Systems – Part 2</td>
<td>James Choi, M.D.</td>
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<tr>
<td>10:25 AM</td>
<td>Microwave Wave Energy Systems</td>
<td>David Iannitti, M.D.</td>
</tr>
<tr>
<td>10:45 AM</td>
<td>Energy Devices in Pediatric Surgery</td>
<td>Gretchen Purcell Jackson, M.D., Ph.D.</td>
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<tr>
<td>11:00 AM</td>
<td>Integration of Energy Systems with Other Medical Devices</td>
<td>Stephanie Jones, M.D.</td>
</tr>
<tr>
<td>11:15 AM</td>
<td>Discussion</td>
<td></td>
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</tbody>
</table>

SAGES acknowledges educational grants in support of this course from Covidien, Ethicon Endo-Surgery, Inc., and Olympus

Fundamentals for the Use of Safe Energy (FUSE) Hands-On Course

**Chair:** Esteban J. Varela, M.D.; **Co-Chair:** Pascal R. Fuchshuber, M.D.  
**Allied Health Personnel encouraged to attend.**

This is a Hands-on dry and tissue lab experience that will expose FUSE PG Course participants to various available electrosurgical devices to perform laparoscopic, open and endoscopic surgical procedures.

**Objectives:**
At the conclusion of this session, participants will be able to:
- Understand the fundamentals of the proper use of electrosurgical units
- Describe the safety strategies during the use of energy devices
- Demonstrate competency in the assembly and troubleshooting of energy sources and generators
- Describe the indication and contraindication of the use of electrosurgical systems

**SCHEDULE**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Facilitator(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00 PM</td>
<td>Introduction</td>
<td>Esteban J. Varela, M.D. &amp; Pascal R. Fuchshuber, M.D.</td>
</tr>
<tr>
<td></td>
<td>Monopolar Devices</td>
<td>Carl Randy Voyles, M.D.</td>
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<tr>
<td></td>
<td>Bipolar Devices</td>
<td>Dean Mikami, M.D.</td>
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<td></td>
<td>CUSA/Argon Beam Devices</td>
<td>James Choi, M.D.</td>
</tr>
<tr>
<td></td>
<td>Ultrasonic Devices</td>
<td>Dana Portenier, M.D.</td>
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<tr>
<td></td>
<td>Fundamentals and Safety of Electrosurgery</td>
<td>Malcolm Munro, M.D.</td>
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<td>RFA Devices</td>
<td>W. Scott Helton, M.D.</td>
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<tr>
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<td>Microwave Devices</td>
<td>David Iannitti, M.D.</td>
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<tr>
<td></td>
<td>Endoscopic Energy Devices</td>
<td>Jeffrey Hazey, M.D.</td>
</tr>
<tr>
<td></td>
<td>Rhythm Management Station</td>
<td>Stephanie Jones, M.D.</td>
</tr>
<tr>
<td>5:00 PM</td>
<td>End</td>
<td></td>
</tr>
</tbody>
</table>

SAGES acknowledges educational grants in support of this course from Covidien, Ethicon Endo-Surgery, Inc., and Olympus

SAGES acknowledges contributions in-kind in support of this course from Aloka Ultrasound, Conmed, Covidien, Encision, Inc., Ethicon Endo-Surgery, Ethicon Inc., Integra, Karl Storz Endoscopy, Microsulis, Olympus and Stryker Endoscopy
Minimizing MIS Postgraduate Course

**Chair:** Aurora Pryor, M.D.; **Co-Chair:** Patrick Reardon, M.D.

Not convinced about single incision surgery? This course is for you! It will instruct MIS surgeons on new techniques to help them become less invasive in their day to day practice. It will discuss optimizing port placement in order to downsize trocars and reduce port number. It will discuss mini (2-3mm) laparoscopy and well as single incision approaches.

**Objectives:**
- At the conclusion of this session, participants will be able to:
  - Discuss alternative platforms to achieve less invasive laparoscopy
  - Determine appropriate patients for single site approaches
  - Understand the limitations of single site surgery
  - Distinguish the risks and benefits of single site approaches for laparoscopy

**SCHEDULE**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30 AM</td>
<td>Introduction and Overview</td>
<td>Aurora Pryor, M.D. &amp; Patrick Reardon, M.D.</td>
</tr>
<tr>
<td>7:45 AM</td>
<td>Why Use Smaller Instruments?</td>
<td>Patrick Reardon, M.D.</td>
</tr>
<tr>
<td>8:00 AM</td>
<td>Lessons from a Pediatric Surgeon</td>
<td>Katherine Barsness, M.D.</td>
</tr>
<tr>
<td>8:15 AM</td>
<td>Tricks for Success with Mini-Laparoscopy</td>
<td>Michel Gagner, M.D.</td>
</tr>
<tr>
<td>8:30 AM</td>
<td>Platforms for Single Site Surgery</td>
<td>Aurora Pryor, M.D.</td>
</tr>
<tr>
<td>8:45 AM</td>
<td>Single Port Access</td>
<td>Paul Currillo, M.D.</td>
</tr>
<tr>
<td>9:00 AM</td>
<td>Considerations If Adopting Single Port</td>
<td>William Kelley, M.D.</td>
</tr>
<tr>
<td>9:15 AM</td>
<td>Discussion</td>
<td></td>
</tr>
<tr>
<td>9:30 AM</td>
<td><strong>BREAK</strong></td>
<td></td>
</tr>
<tr>
<td>10:00 AM</td>
<td>Using Endograb and Sutures Instead of Ports</td>
<td>Daniel J. Scott, M.D.</td>
</tr>
<tr>
<td>10:15 AM</td>
<td>Endolumenal Adjuncts for Foregut Surgery</td>
<td>Richard Pierce, M.D.</td>
</tr>
<tr>
<td>10:30 AM</td>
<td>TEM Can Minimize Laparoscopy</td>
<td>Patricia Sylla, M.D.</td>
</tr>
<tr>
<td>10:45 AM</td>
<td>Move the Scar, Improve Cosmesis</td>
<td>Morris Franklin, Jr., M.D.</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>Discussion</td>
<td></td>
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</tbody>
</table>

SAGES acknowledges an educational grant in support of this course from **Stryker Endoscopy**

1:00 PM - 5:00 PM

Minimizing MIS Hands-On Course

**Chair:** Daniel J. Scott, M.D.; **Co-Chair:** Giovanni Dapri, M.D.

This course will consist of a hands-on animate lab in which participants will receive instruction by experts in techniques to minimize the invasiveness of their MIS approach. Strategies for downsizing ports, reducing the number of ports, and using 3mm and 2mm instrumentation will be employed. Participants will have the opportunity to use a variety of novel instrumentation, including percutaneous minilaparoscopic instruments as well as intracorporeal retractors. Additionally, single incision techniques for laparoscopic surgery will be demonstrated in combination with minilaparoscopic instruments to afford practice with both types of strategies. Single incision techniques will include the use of multiport access devices, suitable camera systems, and articulating instruments. Lab stations will have a 1:2 faculty to participant ratio.

**Objectives:**
- At the conclusion of this session, participants will be able to:
  - Identify and use the various instruments and tools that may facilitate reduced port and single port operations
  - Enhance their technical ability to perform reduced port and single port laparoscopic procedures
  - Describe the operative strategies for performing reduced port and single port laparoscopic procedures (including – cholecystectomy, appendectomy, Nissen fundoplication, splenectomy, and nephrectomy)

**SCHEDULE:**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00 PM</td>
<td>Introduction and demonstrations</td>
<td>Daniel J. Scott, M.D. &amp; Giovanni Dapri, M.D.</td>
</tr>
<tr>
<td>1:00 PM</td>
<td>Reduced Port Cholecystectomy</td>
<td>All</td>
</tr>
<tr>
<td>2:00 PM</td>
<td>Single Incision + Minilap Appendectomy</td>
<td>All</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>Single Incision + Minilap Nissen</td>
<td>All</td>
</tr>
<tr>
<td>4:00 PM</td>
<td>Single Incision + Minilap Splenectomy &amp; Nephrectomy</td>
<td>All</td>
</tr>
</tbody>
</table>

**STATIONS:**

**Faculty (1 faculty per station):**

1. Pat Reardon, MD 5. Garth Jacobsen, MD 9. David Earle, MD 13. Aurora Pryor, MD
2. Julio Teixiera, MD 6. Shawn Tsuda, MD 10. Patricia Sylla, MD
3. Andrew Wright, MD 7. Angel Caban, MD 11. Sharona Ross, MD
4. Kevin Reavis, MD 8. Farid Kehdy, MD 12. Paul Currillo, MD

SAGES acknowledges educational grants in support of this course from **Applied Medical, Covidien, Olympus, Stryker Endoscopy and TransEnterix**

SAGES acknowledges contributions in-kind in support of this course from **Aesculap Inc., Apple Medical, Applied Medical, Carefusion, Covidien, Karl Storz Endoscopy, Olympus, Stryker Endoscopy, Transenterix, Inc., and Virtual Ports**
MIS Colorectal Surgery Postgraduate Course

Chair: Steven D. Wexner, M.D.; Co-Chair: Jeffrey Milsom, M.D.
Location: Ballroom C1

This session will review the fundamental technical challenges of laparoscopic colectomy and offer tips for success to optimize patient outcomes. Attendees will also be introduced to the newest techniques to allow minimal access surgery to a variety of benign and malignant conditions.

Objectives:
At the conclusion of this session, participants will be able to:

- Evaluate the differences amongst traditional laparoscopic, robotic, and single port procedures
- Recognize the advantages of intraoperative endoscopy
- Discuss the methods of mobilization and dissection
- Illustrate the importance of proper mesorectal evaluation after laparoscopic proctectomy

SCHEDULE

7:30 AM  Introduction  Steven D. Wexner, M.D. & Jeffrey Milsom, M.D.

Laparoscopic Colorectal Surgery – Preparing for Success
7:35 AM  Getting Started – Essential Tools and Optional Toys  Peter Marcello, M.D.
7:45 AM  Patient Positioning for Safety and Access  Matthew Mutzel, M.D.
7:55 AM  Optimizing Intra-abdominal Access – Ports, Trocars, and Hands  David Dietz, M.D.
8:05 AM  Choosing Your Energy Source(S) – How Are They The Same and How Do They Differ?  Anthony Senagore, M.D.
8:15 AM  Advantages and Techniques Of Intra-Operative Endoscopy  Eric Weiss, M.D.
8:25 AM  Tricks and Tips for Mobilization and Dissection  Raul Rosenthal, M.D.
8:35 AM  Discussion  Steven Wexner, M.D.
9:10 AM  BREAK

Tomorrow’s Debates and Challenges Clarified for Practice Today
9:40 AM  Improving Efficiency with the Integrated Interventional Suite  Michael K.W. Li, M.D.
9:50 AM  When and Why to Employ Transanal Access  Lee Swanstrom, M.D.
10:00 AM  Single Port Colectomy – Help or Hype  Tonia Young-Fadok, M.D.
10:10 AM  Robotic Colectomy – Medical Miracle or Marketing Mania  Jonathan Efron, M.D.
10:20 AM  Laparoscopic Total Mesorectal Excision – Ensuring Technical Success  Antonio Lacy, M.D.
10:30 AM  Laparoscopic Total Mesorectal Evaluation – Verifying Oncologic Success  Mariana Berho, M.D.
10:40 AM  Intracorporeal Anastomosis Made Easy  Barry Salky, M.D.
10:50 AM  Discussion  Jeffrey Milsom, M.D.
12:30 PM  BREAK

SAGES acknowledges educational grants in support of this course from Applied Medical, Covidien, Olympus and Stryker Endoscopy

SAGES acknowledges contributions in-kind in support of this course from Applied Medical, Covidien, Davol Inc, A Bard Company, Ethicon Endo-Surgery, Ethicon Inc., Karl Storz Endoscopy, Microline Surgical, Olympus, and Stryker Endoscopy
**SAGES 2011 Scientific Session & Postgraduate Course**

**Wednesday, March 30, 2011**

**SAGES Education and Research Foundation Awards Luncheon**

The 2011 Awards Luncheon will recognize distinguished leaders for their work in minimally invasive surgery and raise funds that will keep patient safety and minimal access surgery in the forefront.

*SAGES does not offer CME credits for this lunch.*

**Location: Room 217A-B**

**Welcome and Introductions – Bruce Schirmer, MD, Foundation President**

**2011 SAGES Career Development Award & SAGES Research Grant Awards**

Presented by: Aurora Pryor, MD, SAGES Research Committee Chair & Representatives of Supporting Companies as follows.

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>Title</th>
<th>Supported by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name: Piero Fisichella, MD</td>
<td>Institution: Loyola University Medical Center</td>
<td><strong>Title: A Non-Invasive Test to Detect Markers of Aspiration After Lung Transplantation</strong></td>
<td>Covidien</td>
</tr>
<tr>
<td>Name: Brant Delschlorger, MD</td>
<td>Institution: University of Washington</td>
<td><strong>Title: Long-term Outcomes of Barrett’s Esophagus after Anti-Reflux Surgery</strong></td>
<td>Karl Storz Endoscopy</td>
</tr>
<tr>
<td>Name: Michael Awad, MD, PhD</td>
<td>Institution: Washington Univ. School of Medicine</td>
<td><strong>Title: Ergonomic Analysis of Robotic Surgery</strong></td>
<td>Ethicon-Endo Surgery</td>
</tr>
<tr>
<td>Name: Liane Feldman, MD</td>
<td>Institution: Montreal General Hospital</td>
<td><strong>Title: Enhancing Functional Recovery after Colorectal Surgery: The Effect of Multimodal Prehabilitation</strong></td>
<td>SAGES Foundation</td>
</tr>
</tbody>
</table>

**2011 SAGES Young Researcher Award Winner**

Presented by: Aurora Pryor, MD, SAGES Research Committee Chair & representative from Olympus

Recipient: Esteban Varela, MD

The SAGES Young Researcher Award is based on significant clinical and/or basic science research, publication or presentation at national meetings and dedication to an academic career as well as participation in SAGES.

Dr. Varela is currently Associate Professor and Faculty in the Section of Minimally Invasive Surgery at Washington University in St. Louis. From Columbia, South America, he completed medical school at the Universidad de Columbia graduating in 1994. After a year of surgical internship in Columbia, he came to the United States where he undertook a three-year research fellowship in surgery at the University of Miami followed by residency in general surgery at the University of Illinois at Chicago. He subsequently did a minimally invasive surgery fellowship with Dr. Ninh Nguyen at the University of California at Irvine.

Dr. Varela’s research interests have centered on clinical outcomes in laparoscopic and bariatric surgery. During and since his clinical fellowship in MIS, he has been extraordinarily productive. He has published 58 peer reviewed papers, and is first author on 32. The majority of these publications have been in major surgical journals such as *Annals of Surgery, Archives, Surgery, American Journal of Surgery, Journal of American College of Surgeons, Surgical Endoscopy* and *Obesity Surgery*. He has presented extensively at national meetings and has 26 oral presentations to his credit including oral paper or video presentations at three of the last four SAGES meetings. The impact of his work is already felt in the surgical community. His paper “Laparoscopy Significantly Reduces Surgical Site Infections Compared to Open Surgery” published in *Surgical Endoscopy* in 2009 is the largest series in the laparoscopic surgery literature to date. He authored a paper on “Laparoscopic Gastric Bypass versus Laparoscopic Fundoplication in the Morbidly Obese with Gastroesophageal Reflux Disease” that is the largest series in the bariatric literature. His paper on “Bariatric Surgery Outcomes in Morbidly Obese with Metabolic Syndrome in US Academic Centers” was featured on the cover of *ACS Surgery*.

A rounded man, to say the least, prior to entering medical school, Dr. Varela was a national swimming champion in Columbia for several years running and he continues to swim competitively.

*SAGES gratefully acknowledges Olympus for their support of the Young Researcher Award.*
2011 SAGES Researcher in Training Award Winner

Recipient: Rebecca Petersen, MD

This award is intended to encourage young surgeons to continue their interest and investigation in minimal access surgery. It is presented for excellence in endoscopic surgical research to a SAGES member who is currently in a Residency or Fellowship, who has demonstrated an interest and ability in research in the area of either flexible endoscopy or minimal access surgery and may encompass many disciplines including immunology, physiology, or pathology.

Rebecca Petersen is currently in a two year fellowship in minimally invasive surgery at the University of Washington in Seattle. She obtained her undergraduate degree from Menlo College and a Masters in Science in Epidemiology at Harvard University before going on to medical school at Oregon Health Sciences University. Her CV reflects the significance of what she has accomplished in a still young research and surgical career. She has received numerous academic awards, such as graduating Magna Cum Laude at Menlo College, being elected AOA of Oregon Health Sciences and receiving numerous grants and research awards during her time at Duke. Besides her Masters of Science and Epidemiology degree which laid a strong foundation, she is an author on 28 peer review publications. She has already authored several book chapters and invited articles and is currently working on several research projects and manuscripts submitted for review. She has had several papers accepted for oral presentation at SAGES 2009 and 2010.

2011 SAGES IRCAD Fellowship Award Winner

Recipient: Konstantinos Makris, MD

Dr. Makris was educated in Europe and is completing his training in the U.S. at Legacy Health Systems in Portland, OR. He has been involved in clinical research since the early years of his residency. He has authored a number of articles published in peer-reviewed journals. His research activity has taken place in parallel with clinical responsibilities. After his decision to pursue an academic career in Minimally Invasive Surgery, his interest has focused on anti-reflux surgery and endocrine surgery. He has done research and clinical studies on recalcitrant gastroesophageal reflux disease after failed fundoplications and the role of Roux-en-Y reconstructions in its management. He initiated a retrospective review of data investigating the implications and prognostic role of dysphagia after laparoscopic anti-reflux surgery.

SAGES gratefully acknowledges Karl Storz Endoscopy for their support of the IRCAD Fellowship Award.

Honoring George Berci on his 90th Birthday

George celebrated his 90th birthday in mid-March. He will not be happy to have his age broadcast all over the SAGES meeting, but we thought it was special enough to note.

A few of George’s major accomplishments:

• 1962 - developed a miniature camera and broadcast a live image from inside the body for the first time.
• Brought the Hopkins Rod Lens System to endoscopy.
• Brought the xenon light source to our field.
• Developed the modern choledoscope and a dozen other GI scopes. Plus about 50 hand instruments.
• Invented a wide range of endoscopic instruments unrelated to general surgery including several laryngoscopes, a pediatric bronchoscope, a pediatric laparoscope, a dozen GYN instruments.
• Wrote the definitive text on endoscopy in 1976 and 12 books after that.

Since he was 80.....

• Published more than 25 peer reviewed papers
• Wrote more than 10 chapters
• Developed 10+ videos on 8 topics
• Invented a video intubating scope system
• Invented a video microscope
• Invented a neo natal intubating system
• Communicates almost entirely on line!
• Now working on something for open surgery. And the world goes ‘round!

George thinks he is retired because he only works about 40-45 hours a week and is only in the lab 2 days.

To celebrate 90 years of surgical innovation and life well lived, please honor George Berci and his work for SAGES by making a contribution in his honor to the SAGES Education and Research Foundation. You may donate on line at www.sagesfoundation.org or stop by the Foundation Donor Lounge or SAGES membership booth to fill out your commemorative donation form.

George...Happy Birthday! Let’s start planning for your 100th.
Wednesday, March 30, 2011

2011 SAGES Excellence in Clinical Care Award Winner
Presented by: C. Daniel Smith, MD, Awards Committee Chair
Recipient: Theodore N. Pappas, MD

After all the research. After all the studies. After all the publications, it all comes down to how we care for our patients. Ted Pappas is the consummate exemplar of clinical care. His clinical investigations and patient treatment include gastrointestinal surgery, peptic ulcer surgery, and surgery for cancer of the esophagus, stomach, pancreas, and bile duct.

He simultaneously earned a Master’s in Science and his M.D. from Ohio State University and the School of Medicine. After internship and residency at Brigham and Women’s Hospital in Boston, he served as the Gastrointestinal Research Fellow at the University of California was a Clinical Fellow in Surgery at the Harvard Medical School.

Since joining Duke’s medical staff, Dr. Pappas has held the positions of Director of Surgical Endoscopy; Co-Founder and Director of the U.S. Surgical Endosurgical Center; Chief of Gastrointestinal Surgery, Program Director of General Surgery, Medical Director of the Duke Physician Assistant Surgical Residency Program, Chief of the Surgical Services for the Veterans Administration Medical Center in Durham and Associate Dean for Clinical Affairs for Duke University School of Medicine. He currently holds the position of the Duke Minimally Invasive Surgery Distinguished Professor of Surgery and Vice Chairman for Administration in the Department of Surgery and Executive Medical Director for the Duke Faculty Practice (PDC).

The 1994 and 2006 recipient of Duke’s David C. Sabiston Teaching Award, Dr. Pappas also serves as a member of several editorial boards including Current Surgery, Annals of Surgery, Contemporary Surgery, Journal of Gastrointestinal Surgery, Journal of the American College of Surgeons and the Journal of the International Hepato-Pancreato-Biliary Association. He is a past President of the American Hepato-Pancreato-Biliary Association and serves as a Director on the American Board of Surgery. He is the author of four books and has co-authored more than 250 papers and chapters.

2011 Jeffrey L. Ponsky Master Educator in Endoscopy Award – A SAGES Foundation Award
Presented by: Bruce Schirmer, MD, SAGES Foundation President
Recipient: Wayne Schwesinger, MD
Professor and Interim Chief, Division of General and Laparoendoscopic Surgery; Director and Chief, General Surgery & Surgical Endoscopy

Dr. Schwesinger earned his medical degree from the University of Washington in Seattle and, after a tour of duty in the U.S. Air Force, did postgraduate training at King County Hospital School of Medicine, University of North Carolina and also undertook a Gastroenterology Fellowship. It is no wonder that he was an early champion of flexible endoscopy for surgeons and a founding SAGES member.

Over three decades he has performed extensive research in Diverticular Disease in Hispanics, Outcomes in Biliary Surgery and performed as well as taught Endoscopic and Laparoscopic Surgery, Biliary disease, Bariatric Surgery.

Dr. Schwesinger has always been the consummate teacher and has shown overwhelming generosity of spirit in undertaking the tasks involved with keeping surgeons and surgeons-in-training up to speed.

A member of the SAGES Board for more than a decade, he was Secretary for several years, Vice President and Program Chair for the pivotal meeting in 1989 when Jacques Perrissat showed his discipline-changing video in Louisville. He has served on almost every major committee: Awards, Program, Research, Publications, Journal, Resident Education. He has been on faculty more times than can be counted. When he has been asked to teach, he has never said “no.”

We are honored to have him named the Jeffrey L. Ponsky Master Educator in Endoscopy for 2011.

2011 Excellence in Medical Leadership Award – A SAGES Foundation Award
Presented by: Bruce Schirmer, MD, SAGES Foundation President
Recipient: TBA on-site

This scholarship will help an individual learn what it means to be an effective leader in today’s global economy and will teach a SAGES member how to realign their role as a leader, develop a leadership philosophy, use their emotions more intelligently, and apply the latest research and best practices in global management for greater patient outcomes. This scholarship will enable an individual to attend a seminar that will push the way they think deeply about changes within themselves and their organization as a high potential leader in the medical world.

SAGES Foundation gratefully acknowledges W.L. Gore & Associates for their support of this award.

2011 Gerald Marks Rectal Cancer Award – A SAGES Foundation Award
Presented by: Bruce Schirmer, MD, SAGES Foundation President
Recipient: Masaaki Ito, MD

The Gerald Marks Rectal Cancer Award is selected from each year’s submitted abstracts. This award is chosen from the hundreds of abstracts submitted by a special committee of reviewers and given to one individual each year in honor of Dr. Gerald Marks, SAGES first President and Founder.
2011 SAGES Pioneer in Endoscopy Award Winner
Presented by: C. Daniel Smith, MD, Awards Committee Chair

Recipient: Haruhiro Inoue, MD

This honor is granted to a physician or person in industry for significant, long-term scientific and technological contribution to the field of surgical endoscopy. This award is not given every year, but only bestowed when the SAGES Awards Committee determines a worthy nominee whose efforts have substantively changed and improved the field of endoscopy.

Dr. Inoue is Associate Professor, Showa University Northern Yokohama Hospital and Chief, Upper Gl Endoscopy and Surgery, Digestive Disease Center, Kanagawa, Japan. Uniquely, Dr. Inoue is boarded in General Surgery and Digestive Surgery as well as GI endoscopy. He earned his Ph.D. from Tokyo Medical & Dental University.

Haruhiro Inoue is widely recognized as one of the foremost authorities on gastroesophageal cancers in the world. His signature achievement has been his extremely persistent commitment to finding less invasive surgical treatments for these highly morbid cancers. In the face of conservative opposition to change, he was one of the early pioneers of laparoscopic curative resection for gastric and esophageal cancers. Beyond this, he has long been an advocate of surgeons performing interventional flexible endoscopy and is a true innovator in that field - being one of the originators and most accomplished practitioners of “ESD” (endoscopic submucosal dissection); perhaps the least invasive of all treatments of GI tract cancers. His pioneering explorations continue and in 2009 he was the first to report a clinical series on an endoscopic surgical treatment for achalasia: the POEM (per-oral endoscopic myotomy) procedure. This signature development may be the first “NOTES” procedure to replace a laparoscopic procedure as a surgical gold standard. Most significantly of all, and in keeping with the Pioneer in Endoscopy Award tradition, Dr. Inoue is a true educator. At his hospital in Yokohama he has welcomed and trained a generation of surgeons in advanced flexible Endoscopy, and continues to travel tirelessly worldwide to share his knowledge and philosophy of less invasive and more humane care of patients. His philosophy of less invasive surgery for all patients, his mastery of open, laparoscopic and flexible endoscopic surgery, and above all else, his willingness to share his knowledge with surgeons from all over the world, make him the true embodiment of SAGES’ ideals and a worthy recipient of the SAGES Pioneer in Endoscopy award.

2011 SAGES Distinguished Service Award Winner
Presented by: C. Daniel Smith, MD, Awards Committee Chair

Recipient: Gerald Fried, MD
Adair Family Professor and Chairman, Department of Surgery, McGill University
Surgeon-in-Chief, McGill University Hospital Centre, Montreal, Canada

The Distinguished Service Award is given to a surgeon who has made a significant, long-term educational, research, clinical and/or technological contribution to the field of surgical endoscopy and has advanced the mission of SAGES.

Gerry Fried was probably the smartest kid in his class and what’s more, he almost certainly helped other kids with their homework and never asked for thanks. He has brought that matured brilliance to SAGES, along with a willingness to do whatever has to be done to make surgery better and patients safer.

Dr. Fried has been a member of SAGES Board since 2002, currently serves as 1st Vice President, and was previously Treasurer and Chair of the Finance Committee. He also co-chairs the FLS Committee and was instrumental in the development of the FLS hands-on training/testing element. In his “spare time” he also participates as a member of the FES and FUSE Committees. Dr. Fried is a Past-President and member of the Board of Directors for the Canadian Association of General Surgeons, and is their representative to IFSES and the Advisory Council for General Surgery of ACS. He is a member of the ACS Committee on Emerging Surgical Technologies and Education (CESTE), and the accreditation committee for the ACS Educational Institutes. He sits on the Boards of SSAT, Central Surgical Association, International Society for Digestive Surgery, Association for Surgical Education Foundation, and James IV Society of Surgeons. He served as co-President of the 2010 World Congress of Endoscopic Surgery.

He is world acclaimed for his work in surgical education and metrics of technical skills assessment, outcomes research, technology assessment, foregut surgery, complications of biliary surgery.

He has served the world of surgery well and we are all better off for his contribution.

A Gentle Reminder About Safety/Security:
We have taken every precaution to assure the safety and security of our guests and their possessions. However, we urge you to be aware and take simple steps to guard your possessions.

• Do not leave your purse or briefcase unattended.
• Do not leave your laptop, phone or other electronic devices on the floor or out of your sight in a darkened room
• Be aware of your surroundings, in the Convention Center, in and around the RiverWalk Area and in San Antonio.

Have a safe & secure meeting!
2011 SAGES Berci Lifetime Achievement Award Winner

Recipient: Jacques Perissat, MD
Professor Emeritus of Digestive Surgery and Surgeon of the University Hospitals of Bordeaux
Director Emeritus of the Center of Laparoscopic Surgery and of the Department of Training and Research on Surgical Techniques at University Victor Segalen Bordeaux

Many of us remember that morning in April, 1989 when we stood around Jacques Perissat and a small video screen as he explained his technique for removing a gallbladder laparoscopically. The reactions varied from “interesting, but I don’t think I’ll ever do that” to “I can’t even see that clearly in an open belly.” The man for whom this award is named said “Look carefully. This is the face of the future.” And it was.

Jacques Perissat is Professor of Digestive Surgery and Surgeon of the University Hospitals of ILS. He also serves as Director of the Center of Laparoscopic Surgery and the Department Of Techniques and Surgical Researches. He was President of the International Federation of Societies of Endoscopic Surgeons (IFSES). He served as co-editor of *The European Journal of Coelio-Surgery.*

He is an active member of The French Academy of Surgery, The French Association of Surgery, American College of Surgeons and is an honorary member of American Surgical Association (ASA), The German Society of Surgery, The Austrian Society of Surgery, and The National Academy of Surgery of Argentina.

While performing his groundbreaking work he also had time to serves as President of The French Society of Endoscopic Surgery (S.F.C.E) and the European Association for Endoscopic Surgery (E.A.E.S).

He hosted the Third World Congress of Endoscopic Surgery in Bordeaux, 1992 where he became as well known for his hospitality as for his scientific and surgical expertise.

His masterpiece book “*Laparoscopic Surgery,*” *An Atlas for General Surgeons* is a staple of medical literature.

His peer reviewed papers are too numerous to count, as well as chapters, invited lectures, visiting professorships. He helped to change the world for the better. He has been a friend to patients, a friend to surgery and a friend to SAGES.

2011 Top International Abstracts

SAGES Board of Governors and Global Affairs Committee would like to acknowledge the following Top International Abstract Presenters

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>Abstract Title</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>V.V. Grubnik, M.D.</td>
<td>Odessa State Medical University</td>
<td>Results of Laparoscopic Common Bile Duct Exploration: Prospective Randomized Trial</td>
<td>Ukraine</td>
</tr>
<tr>
<td>Long Vo Duy, M.D.</td>
<td>University Medical Center, Ho Chi Minh city, Viet Nam</td>
<td>Laparoscopic Gastrectomy With Lymph Node Dissection For Gastric Cancer</td>
<td>Vietnam</td>
</tr>
<tr>
<td>P Praveen Raj, MS</td>
<td>GEM Hospital</td>
<td>Surgery for Type II Diabetes Mellitus: Laparoscopic Ileal Interposition (TYPEI)</td>
<td>India</td>
</tr>
<tr>
<td>Gökhan Tolga Adas, M.D.</td>
<td>Okmeydani Education and Research Hospital, Department of Surgery</td>
<td>Different Therapeutic Modalities For Common Bilier Duct And The Gallbladder Stones (A Prospective Randomised Study)</td>
<td>Turkey</td>
</tr>
</tbody>
</table>
Unexpected Intraoperative Findings Video Session

Chair: Nathaniel J. Soper, M.D.  
Co-Chair: Michael D. Holzman, M.D.  

This session will highlight intraoperative findings that can complicate surgery and are controversial in management. Such issues as infected mesh in reoperative ventral hernia, short esophagus, massive intra-abdominal adhesions, intraoperative hemorrhage and anatomic anomalies will be illustrated and discussed.

Objectives:
At the conclusion of this session, participants will be able to:
• Understand intraoperative situations that may occur that require definitive therapy
• View videos illustrating the management of these problems by laparoscopic experts
• Gain an appreciation for patient selection and perioperative care that minimizes the likelihood of intraoperative complications during complex procedures

SCHEDULE
12:30 PM Introduction Nathaniel J. Soper, M.D. & Michael D. Holzman, M.D.
12:35 PM Infected Mesh/Severe Adhesions in Reoperative Ventral Hernia Alfredo Carbonell, M.D.
12:50 PM Short Esophagus/Reoperative Esophagus Blair Jobe, M.D.
1:05 PM Leaking Anastomosis/Severe Pelvic Side-Wall Inflammation Peter Marcello, M.D.
1:20 PM Marked Inflammation/Distorted Anatomy During Laparoscopic Cholecystectomy Scott Helton, M.D.
1:35 PM Esophageal Perforation During Nissen Fundoplication Yuri Novitsky, M.D.
1:50 PM Intraabdominal Hemorrhage B. Todd Heniford, M.D.
2:05 PM Discussion

2011 SAGES Webcast Sessions
To be part of the 2011 SAGES International Webcast Sessions or to view the replay, please visit us at:
http://orlive.com/sages/channels/sages2011 
password:sages

Thursday, March 31, 2011

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<td>Inguinal Hernia Debates</td>
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Friday, April 1, 2011

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Wednesday, March 30, 2011

Getting Paid for What You Do Symposium: EMR, Coding, Reimbursement

Chair: Paresh Shah, M.D.  
Co-Chair: Michael Edye, M.D.

This symposium will focus on practical issues related to coding and reimbursement for advanced MIS procedures, with specific attention to payor and regulatory issues. Specific examples of typical cases will be addressed with audience participation.

Objectives:
At the conclusion of this session, participants will be able to:
- Describe the appropriate coding and billing methodology for MIS procedures
- Apply appropriate methodology to payor contracting and billing
- Identify and assess regulatory changes that affect reimbursement

SCHEDULE

1:00 PM  Introduction  
Paresh Shah, M.D. & Michael Edye, M.D.

1:05 PM  Basics of Reimbursement – Coding and Valuation  
Chris Senkowski, M.D.

1:15 PM  Basics of Reimbursement – Payor Contracts and Policies  
Howard Gold, M.D.

1:25 PM  What if There Is No CPT Code? How to Bill – The Provider Perspective  
Michael Edye, M.D.

1:35 PM  What if There Is No CPT Code? How to Bill – Payor Perspective  
Gerald Scallon, M.D.

1:45 PM  What Will Impact Reimbursement in the Near Future? Pay for Performance, EMR, Meaningful Use, and ICD-10  
Charles Mabry, M.D.

1:55 PM  Specific Case Examples:  
1. Hiatal Hernia with Bariatric Procedures  
2. Endolumenal Procedures  
3. Lap Ventral Hernia with Component Release  
4. Revisional Bariatric Surgery  
5. Lap Gastric Surgery  
6. Lap Pancreatic Surgery  
7. Audience Suggestions

2:25 PM  Discussion

SAGES 30th Anniversary

SAGES celebrates its 30th anniversary this year. Thirty years of great thinking, great action and great leadership. Look around the meeting to find reminders of our enormous accomplishments over three decades.

We have changed surgery. We have saved patients’ lives.
SAGES Pearls Session

Chair: Denise Gee, M.D.  
Co-Chair: Lily Chang, M.D.  
Location: Room 214C-D

SAGES Pearls Deconstructs advanced laparoscopic procedures into core steps. Our experts will provide commentary and review multiple techniques for each step through video examples.

Objectives:
At the conclusion of this session, participants will be able to:

• Define the core steps of four advanced laparoscopic procedures: inguinal hernia, Nissen fundoplication, sigmoid colectomy, and roux-en-Y gastric bypass
• Describe several methods to perform key portions of these advanced laparoscopic procedures
• Identify the technical components to achieve a successful operative performance
• Apply expert techniques to advanced laparoscopic procedures

SCHEDULE

1:00 PM  Introduction
1:05 PM  Laparoscopic Nissen Fundoplication Introduction  Horacio Asbun, M.D.
1:20 PM  Technique Video  Brant Oelschlager, M.D.
1:35 PM  Technique Video  Barry Salky, M.D.
1:50 PM  Technique Video  David Easter, M.D.
2:05 PM  Discussion

2:20 PM  Laparoscopic Inguinal Hernia Repair Introduction  Daniel B. Jones, M.D.
2:35 PM  Technique Video  Steven Schwaitzberg, M.D.
2:50 PM  Technique Video  L. Michael Brunt, M.D.
3:05 PM  Technique Video  David Edelman, M.D.
3:20 PM  Discussion

3:30 PM  BREAK

3:45 PM  Laparoscopic Sigmoid Colectomy Introduction  Peter Marcello, M.D.
4:00 PM  Technique Video  Tonia Young-Fadok, M.D.
4:15 PM  Technique Video  TBA
4:30 PM  Technique Video  TBA
4:45 PM  Discussion

Incorporating FLS and FES into Your Residency Panel

Chair: Gerald M. Fried, M.D.  
Co-Chair: John Mellinger, M.D.  
**Allied Health Personnel encouraged to attend.**

FLS and FES are validated programs designed to ensure that surgical residents and practicing surgeons have acquired fundamental skills in laparoscopic surgery and flexible GI endoscopy. This session will explain how these programs can be incorporated effectively into surgical residency training.

Objectives:
At the conclusion of this session, participants will be able to:

• Prepare a curriculum for simulation-based surgical training in laparoscopy and flexible GI endoscopy
• Develop objective measures of performance for their trainees (proficiency goals) that are evidence-based
• Link FLS and FES performance measures to clinical performance in the operating room and endoscopy suite

SCHEDULE

2:30 PM  Introduction  Gerald M. Fried, M.D. & John Mellinger, M.D.
2:35 PM  FLS and FES Programs: What are Their Roles in Surgical Education  Gerald M. Fried, M.D.
2:50 PM  Establishing Training Objectives: Proficiency or Time-Based Measures  E. Matthew Ritter, M.D.
3:10 PM  Finding the Time and Help to Implement Simulation training in Resident Programs  Daniel J. Scott, M.D.
3:25 PM  Determining Competence in Flexible GI Endoscopy: Numbers and Politics  John Mellinger, M.D.
3:45 PM  Linking Simulation Training and Clinical Performance  Melina C. Vassiliou, M.D.
4:05 PM  How I Plan to Incorporate FES Into My Residency Training Program  Karen Horvath, M.D.
4:20 PM  Incorporating a Successful Simulation Program in Residency Training Requires Support from the Chairs  Carlos Pellegrini, M.D.
4:40 PM  Discussion

SAGES acknowledges educational grants in support of this panel from Boston Scientific and Ethicon Endo-Surgery Inc.
Device Development: Idea to Product – How to Commercialize Your Great Ideas

Chair: Dmitry Oleynikov, M.D.        Location: Room 214A-B
Co-Chair: Raymond P. Onders, M.D.    **Allied Health Personnel encouraged to attend.

The process from initial “idea or device” to help patient, to funding that idea, to working with IRB and the FDA to make sure that idea is safe and finally developing a company to manufacture and provide that idea to patients may seem daunting, but this session’s speakers will help make that journey easier with their wealth of experience.

Objectives:
At the conclusion of this session, participants will be able to:
• Successfully protect innovative ideas
• Recognize potential conflict of interest as it applies to the innovator and device developer
• Appreciate the trials and tribulations of managing a clinical career and entrepreneurial venture
• Understand the role of a university technology transfer office
• Describe funding opportunities from the NIH and other sources
• Understand when procedures or devices need to be considered by the IRB for research considerations
• Understand the role of the FDA in evaluating and regulating devices
• Understand the relative financial value of innovative concepts
• Appreciate the process of founding and funding enterprises for commercializing devices
• Develop a knowledge how new devices become approved by insurance carriers

SCHEDULE
3:00 PM Introduction Dmitry Oleynikov, M.D. & Raymond Onders, M.D.
3:05 PM Overview Dmitry Oleynikov, M.D.
3:10 PM Protecting Ideas Henry Joseph Runge, M.D.
3:30 PM Good Ideas for Non-Physicians Janet Cuddigan, Ph.D., R.N.
3:50 PM Funding Raymond P. Onders, M.D.
4:10 PM Development and Research Jeffrey L. Ponsky, M.D.
4:30 PM Commercializing Thomas J. Fogarty, M.D.
4:50 PM Discussion

Please join us for the

SAGES Welcome Exhibit Opening Reception

SAGES exhibits will take place at the Henry B. Gonzalez Convention Center in the Exhibit Hall C, 5:00 - 7:00 PM

The Learning Center and Posters will NOT be open until Thursday.

To fully comply with ACCME regulations, all SAGES Meeting attendees must have their badge scanned before entering any course or session room in order to receive CME credit for that event.

FLS Testing Available! Thursday, March 31 - Saturday, April 2, 2011
Contact FLS@sages.org for more details or to schedule your test.
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<td>7:00 - 8:00 AM</td>
<td>Room 214C-D</td>
<td>SS01 – Flexible Endoscopy I</td>
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<tr>
<td>7:00 - 8:30 AM</td>
<td>Room 217C-D</td>
<td>SS02 – Colorectal I</td>
</tr>
<tr>
<td>7:00 - 8:30 AM</td>
<td>Room 214A-B</td>
<td>Session: Lessons Learned from Military Surgery</td>
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<tr>
<td>7:30 - 9:30 AM</td>
<td>Exhibit Hall C</td>
<td>Early Opening for SAGES Posters!</td>
</tr>
<tr>
<td>7:30 AM - 12:00 PM</td>
<td>Lectures: Ballroom C1</td>
<td>Postgraduate &amp; Hands-On Course: Bariatric Surgery</td>
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<tr>
<td>7:30 AM - 12:00 PM</td>
<td>Lab: Exhibit Hall D</td>
<td>Postgraduate &amp; Hands-On Course: Endoscopy for Surgeons</td>
</tr>
<tr>
<td>1:30 - 5:30 PM</td>
<td>Room 214A-B</td>
<td>SAGES/SSAT Joint Symposium: MI HPB &amp; Pancreatic Surgery – The Next Frontier</td>
</tr>
<tr>
<td>8:30 AM - 12:00 PM</td>
<td>Room 217C-D</td>
<td>Session: Lessons Learned from Military Surgery</td>
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<td>Room 214C-D</td>
<td>SAGES/ACS Joint Symposium: Obama Health Care Reform Update</td>
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<td>10:30 AM - 12:00 PM</td>
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<td>SAGES/JSES Joint Symposium: What’s New in Lower GI Surgery</td>
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<td>10:30 AM - 12:00 PM</td>
<td>Room 214C-D</td>
<td>Panel: Getting New Technology Into Your Hospital</td>
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<tr>
<td>12:00 - 1:30 PM</td>
<td>Room 217A-B</td>
<td>Educator’s Lunch: Restoring Independence into Residency Training</td>
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<tr>
<td>1:30 - 3:30 PM</td>
<td>Room 214A-B</td>
<td>SS03 – Best of Video I</td>
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<tr>
<td>1:30 - 3:30 PM</td>
<td>Ballroom C1</td>
<td>SS04 – Foregut I</td>
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<tr>
<td>1:30 - 3:30 PM</td>
<td>Room 214C-D</td>
<td>Panel: When Bad Things Happen to Good Surgeons</td>
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<tr>
<td>2:30 PM</td>
<td>Exhibit Hall C</td>
<td>Coffee Break &amp; Cookies in Exhibit Hall!</td>
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<tr>
<td>3:30 - 5:30 PM</td>
<td>Room 214C-D</td>
<td>SS05 – Colorectal II</td>
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<tr>
<td>3:30 - 5:30 PM</td>
<td>Room 214A-B</td>
<td>Debate: Inguinal Hernia – Laparoscopic vs. Open</td>
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<tr>
<td>3:30 - 5:30 PM</td>
<td>Ballroom C2-3</td>
<td>Session: Managing Bariatric Surgery Emergencies for Non-Bariatric Surgeons</td>
</tr>
<tr>
<td>5:30 - 7:30 PM</td>
<td>Room 212</td>
<td>Davol Inc., a BARD Company – “Evolving Technologies in Laparoscopic Ventral Hernia Repair”</td>
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<td></td>
<td>Room 217A-B</td>
<td>Ethicon Endo-Surgery Inc. – “Innovating to Improve Patient Outcomes: Exploring Surgeon, Device and Tissue Interaction”</td>
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<tr>
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<td>Room 217C-D</td>
<td>Intuitive Surgical – “da Vinci General Surgery, from Multi-Port to Single-Access Robotic Applications”</td>
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<td>Room 211</td>
<td>Novartis Pharmaceuticals Corp. – “Gastrointestinal Stromal Tumors: Considerations for Surgeons”</td>
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**Pencil us in for next year:**

**March 7 - 10, 2012 • San Diego, CA**

*Earlier than Usual!*
Scientific Session Concurrent Sessions (accepted oral & video presentations)

Description:
This section of the SAGES Meeting includes panels with invited faculty who will speak on specific topics, and sessions of oral & video presentations of abstracts selected by the SAGES Program Committee.

What Is Included:
The Scientific Session is included in Registration SuperPass (Option A). Thursday sessions (concurrent only) are also included in Registration Option B. Friday and Saturday sessions and panels are included in Registration Option C (see registration form on page 49). All fees include entrance to all didactic session rooms (not including hands-on course labs or lunches), Final Program, entrance to the Exhibit Hall, Learning Center, Posters, access to the Electronic Meeting Guide online, continental breakfast & breaks, and lunch in the Exhibit Hall on Saturday.

7:00 AM - 8:00 AM
Concurrent Sessions (accepted oral & video presentations)

SS01 Flexible Endoscopy I
Moderators: Bruce MacFadyen, Jr., MD, Gregory Stiegmann, MD
SS01 SYMPTOM RESOLUTION AFTER TRANSORAL INCISIONLESS FUNDOPLICATION IN PATIENTS WITH PROVEN GASTROESOPHAGEAL REFLUX David J Dargis, DO, Matthew S Ralph, DO, Allegan Surgical Associates, Allegan, Michigan
SS02 COMPREHENSIVE EVALUATION OF AN ENDOSCOPIC FUNDOPLICATION USING THE ESOPHYX DEVICE Rebecca P Petersen, MD MSc, Laura Filippa, MD, Belco B Wassenaar, MD PhD, Ana V Martin, MD, Roger Tatum, MD, Brant K Oelschlager, MD, University of Washington Medical Center
SS03 EARLY EXPERIENCE WITH LAPAROSCOPIC NISSEN FUNDOPLICATION FOR RECURRENT GERD AFTER TRANSORAL INCISIONLESS FUNDOPLICATION Kyle A Perry, MD, Jeffery L Eakin, MD, John G Linn, MD, Raymond P Onders, MD, Vic Velanovich, MD, W. Scott Melvin, MD, Center for Minimally Invasive Surgery, Department of Surgery, The Ohio State University, Columbus, OH; Department of Surgery, University Hospitals Case Medical Center, Cleveland, OH; Division of General Surgery, Henry Ford Hospital, Detroit, MI
SS04 LONG-TERM OUTCOMES AFTER TRANSORAL INCISIONLESS FUNDOPLICATION IN PATIENTS WITH GERD AND LPR SYMPTOMS Karim S Trad, MD, Daniel S Turgeon, MD, Reston Hospital Center, Reston, Virginia
SS05 VARIATIONS IN ENDOSCOPIC DESCRIPTION OF FAILED FUNDOPLICATIONS Arpad Juhasz, MD PhD, Abhishek Sundaram, MBBS MPH, Masato Hoshino, MD, Tommy H Lee, MD, Sumeet K Mittal, MD, Department of Surgery, Creighton University Medical Center
V001 LAPAROSCOPIC NISSEN FUNDOPLICATION FOR SYMPTOMATIC RECURRENCE AFTER ENDOSCOPIC FUNDOPLICATION WITH THE ESOPHYX DEVICE Vic Velanovich, MD, Henry Ford Hospital

SS02 Colorectal I
Moderators: Karen Horvath, MD, Michael Bailey, MD
S006 ELECTIVE LAPAROSCOPIC VERSUS OPEN COLECTOMY FOR SYMPTOMATIC DIVERTICULOSIS - AN ANALYSIS OF ACS-NSQIP DATABASE Venkata R Kakarla, MD, Dan E Ruiz, MD, Ambujakshan Dildeep, MD, Omar Bellowin-Marin, MD, Howard I Tisenkel, MD, New York Hospital Queens, Flushing, NY
S007 LAPAROSCOPIC APPROACH IN COMPLICATED DIVERTICULAR DISEASE Alejandro Canelas, MD, Esteban Grzona, MD, Emmanuel Sadava, MD, Maximiliano Bun, MD, Mariano Laporte, MD, Nicolás Rotholtz, MD, Colorectal Surgery Section. Hospital Alemán. Buenos Aires - Argentina.
S008 SINGLE-INCISION VERSUS CONVENTIONAL LAPAROSCOPIC COLECTOMY: A CASE-MATCHED SERIES Diego I Ramos-Valadez, MD, Javier Nieto, MD, Madhu Ragupathi, MD, Chefag B Patel, PhD MSE, T. Bartley Pickron, MD, Eric M Haas, MD FACS FASCRS, Division of Minimally Invasive Elective Surgery, Department of Surgery, University of Texas Medical School at Houston, Houston, Texas
S009 EMERGENCY LAPAROSCOPIC APPROACH IN PATIENTS WITH ULCERATIVE COLITIS Alejandro Canelas, MD, Esteban Grzona, MD, Mariano Laporte, MD, Maximiliano Bun, MD, Nicolás Rotholtz, MD, Colorectal Surgery Section. Hospital Alemán. Buenos Aires - Argentina.
S010 LOOP ILEOSTOMY CLOSURE AFTER PRIOR LAPAROSCOPIC VS. OPEN SURGERY: IS THERE A DIFFERENCE? A Rather, A Hiranyakes, G da Silva, S D Wexner, E G Weiss, Cleveland Clinic Florida
V002 SINGLE INCISION LAPAROSCOPIC RECTOSIGMOID RESECTION AND RECTOPEXY FOR RECTAL PROLAPSE Noelle L Bertelson, MD, Alexandre Bouchard, MD, Tonia Young-Fadok, MD MS, Mayo Clinic Arizona

7:00 AM - 8:00 AM Exhibit Hall C
SAGES Posters Open - Early Opening!

SAGES acknowledges our Diamond and Platinum Level Donors for their support of the poster session:

Diamond: Covidien, Ethicon Endo-Surgery Inc.
Platinum: Karl Storz Endoscopy, Olympus
Military Session – An Update on Surgery in the Combat and Austere Environment

Chair: Robert B. Lim, M.D.; Co-Chair: Jonathan P. Pearl, M.D. Location: Room 214A-B

Laparoscopy has not yet been accepted as a standard of care in the forward surgical setting or in humanitarian missions. But there are numerous potential advantages of its use during the military medicine’s current mission in support of Operation Enduring Freedom. This session will update the current status of surgical capability in austere environments including during combat and after natural disasters.

Objectives:
At the conclusion of this session, participants will be able to:

- Identify and be familiar with the military’s capability to respond medically to natural disasters
- Recognize and distinguish the training required, including skill simulation, to ensure first-line responders and forward medical providers are prepared for the unique challenges of combat
- Identify the need for laparoscopy in the combat environment and how its success is congruent with the military’s larger mission
- Identify the problems with providing surgical care in the forward and austere environments and the ways to overcome these obstacles

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<td>The Haiti Humanitarian Mission</td>
<td>Shawn Safford, M.D.</td>
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<td>7:20 AM</td>
<td>Laparoscopy During Operations Iraqi and Enduring Freedom</td>
<td>E. Matthew Ritter, M.D.</td>
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<td>7:35 AM</td>
<td>Benefits of Laparoscopy at Expeditionary Medical Facility – Kuwait</td>
<td>Jonathan P. Pearl, M.D.</td>
</tr>
<tr>
<td>7:50 AM</td>
<td>Update in Surgery in the Combat Environment</td>
<td>Carla Hawley-Bowland, M.D.</td>
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<td>8:20 AM</td>
<td>Discussion</td>
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http://orlive.com/sages/channels/sages2011
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<td>Jo Buyske, MD</td>
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<td>Chair: Bruce Ramshaw, M.D. Co-Chair: Michael Franz, M.D.</td>
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<td>SAGES/ALACE Symposium: Integrating New Technologies, Old Tricks, and Operative Approaches</td>
<td>Chair: Natan Zundel, M.D. Co-Chair: Jeffrey L. Ponsky, M.D.</td>
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<tr>
<td>3:30 PM - 5:30 PM</td>
<td>SAGES/ASCRS Laparoscopic Colon Surgery Symposium: Why Aren’t More Surgeons Doing This Operation?</td>
<td>Chair: Tonia M. Young-Fadok, M.D. Co-Chair: John H. Marks, M.D.</td>
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Bariatric Surgery Postgraduate Course

Chair: Marina Kurian, M.D.; Co-Chair: Kevin M. Reavis, M.D.  
Location: Ballroom C1

Sleeve gastrectomy is emerging as the #3 procedure behind gastric banding and bypass, with over 240,000 bariatric procedures done every year. This course helps the participants to distinguish the technical challenges of each procedure to minimize complications and to identify best practices for perioperative care. Surgeons with initial experience with gastric banding and sleeve gastrectomy as well as those with moderate experience would benefit from this course. Outcomes and revision procedures will be discussed as well as single incision approaches. Patient selection and indications for both procedures and approaches will be described. Benefit from the faculty who have done hundreds to thousands of these procedures and learn their tips and tricks!

Objectives:
At the conclusion of this session, participants will be able to:
- Identify the technical pitfalls of sleeve gastrectomy and gastric banding
- Appraise and integrate best practices for perioperative care
- Discuss the different revisional approaches to both sleeve gastrectomy and gastric banding
- Employ hiatal hernia repair and utilize other technical aspects of sleeve gastrectomy and gastric banding in practice
- Define the single incision approach and distinguish the appropriate patients in which to utilize this technique

SCHEDULE

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<td>Introduction</td>
<td>Marina Kurian, M.D. &amp; Kevin M. Reavis, M.D.</td>
</tr>
<tr>
<td>7:35 AM</td>
<td>Sleeve Gastrectomy and Neurohormonal Control of Obesity and Diabetes</td>
<td>Sayeed Ikramuddin, M.D.</td>
</tr>
<tr>
<td>7:55 AM</td>
<td>How Tight is Tight?</td>
<td>Kevin Reavis, M.D.</td>
</tr>
<tr>
<td>8:05 AM</td>
<td>Weight Loss Outcomes in Sleeve Gastrectomy with Different Bougies</td>
<td>Manoel Galvao, M.D.</td>
</tr>
<tr>
<td>8:20 AM</td>
<td>Mechanisms of Leaks and Outcomes</td>
<td>Gregg Jossart, M.D.</td>
</tr>
<tr>
<td>8:35 AM</td>
<td>To Stent or Drain a Leak?</td>
<td>Raul Rosenthal, M.D.</td>
</tr>
<tr>
<td>8:55 AM</td>
<td>I Do it All: Who Do I Offer the Band/Sleeve To?</td>
<td>Natan Zundel, M.D.</td>
</tr>
<tr>
<td>9:15 AM</td>
<td>Why and How I Fix the Hiatal Hernia in Bands</td>
<td>David Voellinger, M.D.</td>
</tr>
<tr>
<td>9:25 AM</td>
<td>Why and How I Fix Hiatal Hernia in Sleeves</td>
<td>Jorge Daes, M.D.</td>
</tr>
<tr>
<td>9:35 AM</td>
<td>Discussion</td>
<td></td>
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<tr>
<td>9:55 AM</td>
<td>BREAK</td>
<td></td>
</tr>
<tr>
<td>10:15 AM</td>
<td>Single Incision Sleeve</td>
<td>Julio Teixeira, M.D.</td>
</tr>
<tr>
<td>10:30 AM</td>
<td>Single Incision Band</td>
<td>Matt Brengman, M.D.</td>
</tr>
<tr>
<td>10:45 AM</td>
<td>Revising the Sleeve: Best Options</td>
<td>Raul Rosenthal, M.D.</td>
</tr>
<tr>
<td>10:55 AM</td>
<td>Revising the Band: I Already Fixed the Hiatal Hernia!</td>
<td>Marina Kurian, M.D.</td>
</tr>
<tr>
<td>11:05 AM</td>
<td>My Favorite Tip/Trick Video</td>
<td>All Faculty</td>
</tr>
<tr>
<td>11:35 AM</td>
<td>Discussion</td>
<td></td>
</tr>
</tbody>
</table>

SAGES acknowledges educational grants in support of this course from Ethicon Endo-Surgery Inc., Gore & Associates, and Stryker Endoscopy

Bariatric Surgery Hands-On Course

Chair: Marina Kurian, M.D.; Co-Chair: Kevin M. Reavis, M.D.  
Location: Exhibit Hall D

This course will focus on the technical aspects of laparoscopic sleeve gastrectomy, gastric banding and hiatal hernia repair. Participants will also be able to do single incision laparoscopic approaches for gastric banding and sleeve gastrectomy.

Objectives:
At the conclusion of this session, participants will be able to:
- Identify technical aspects and pitfalls of sleeve gastrectomy, hiatal hernia repair and gastric banding
- Define the single incision approach and distinguish the appropriate patients in which to utilize this technique

SCHEDULE

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:30 PM</td>
<td>Introduction</td>
<td>Marina Kurian, M.D. &amp; Kevin M. Reavis, M.D.</td>
</tr>
<tr>
<td>1:35 PM</td>
<td>12 Cadaver Torso Stations, 3 participants, 1 faculty member per station</td>
<td></td>
</tr>
<tr>
<td>5:30 PM</td>
<td>Lab Concludes</td>
<td></td>
</tr>
</tbody>
</table>

Lab Faculty:
- Gregg Jossart, M.D.
- Manoel Galvao, M.D.
- Almino Ramos, M.D.
- Natan Zundel, M.D.
- David Voellinger, M.D.
- Jorge Daes, M.D.
- Matthew Brengman, M.D.
- Michel Gagner, M.D.
- Julio Teixeira, M.D.

SAGES acknowledges educational grants in support of this course from Applied Medical, Covidien and Olympus

SAGES acknowledges contributions in-kind in support of this course from Allergan Inc., Applied Medical, Carefusion, Covidien, Ethicon Endo-Surgery, Ethicon Inc., Gore & Associates, Karl Storz Endoscopy, Microline Surgical, Olympus, and Stryker Endoscopy
There is a gap between the need and the actual number of surgeons who perform flexible endoscopy. Reasons are lack of awareness, knowledge and training. Attempts to close this gap such as increasing flexible endoscopy in surgical residency programs and fellowships and proctoring practicing surgeons are in development.

This course will teach the requirements for surgeons to perform flexible gastrointestinal endoscopy. Experts in the field will address indications and techniques of upper and lower GI-endoscopy, established and new treatment modalities, training requirements and business aspects for the surgical practice. The course will cover the needs for surgeons in areas of demand to provide endoscopy services for the community such as rural areas.

The course design consists of lectures followed by discussions between the expert panel and the audience. Attendees will be able to test their knowledge by interactive electronic feedback after individual blocks of lectures and by Q/A self assessment attached to each lecture in the course syllabus. A follow up questionnaire will assess changes in attendees practice patterns.

**Objectives:**

- To describe existing and new indications and techniques for diagnostic and therapeutic flexible endoscopy of the gastrointestinal tract
- To identify complications and discuss how to manage them
- To describe how to use flexible endoscopy in the operating room
- To list current requirements to start flexible endoscopy and how to set it up in the surgical practice
- To identify and describe experimental modalities in endoscopic diagnosis and treatment

**SCHEDULE**

- **7:30 AM** Introduction
  Klaus Thaler, M.D. & Debbie Youngelman, M.D.
- **7:35 AM** Diagnostic and Therapeutic Upper GI Endoscopy – Common Indications and Techniques
  Jeffrey Hazey, M.D.
- **7:50 AM** Cancer Surveillance, Diagnostic, and Therapeutic Colonoscopy
  Jonathan Efron, M.D.
- **8:05 AM** Basics of ERCP for Surgeons
  Gary Vitale, M.D.
- **8:20 AM** Management of Difficult Scenarios and Endoscopic Complications
  Kevin Wasco, M.D.
- **8:35 AM** Intraoperative Endoscopy
  C. Daniel Smith, M.D.
- **8:50 AM** Discussion
- **9:10 AM** BREAK
- **9:25 AM** Endoscopic Treatment of Complications After Gastrointestinal and Bariatric Surgery
  Brent Miedema, M.D.
- **9:40 AM** New Techniques in Therapeutic Endoscopy – Treatment of GERD, Barrett’s & Weight Loss
  W. Scott Melvin, M.D.
- **9:55 AM** Endoscopic Practice – How to Start Getting Priveleges, Practice Set up
  John Mellinger, M.D.
- **10:10 AM** Training of Advanced Surgical Endoscopist – When are You Ready to Do What?
  Melina Vassiliou, M.D.
- **10:25 AM** Update on Experimental Endoscopic Techniques for Diagnosis and Treatment – What’s the Future
  Christopher Thompson, M.D.
- **10:40 AM** Discussion

*SAGES acknowledges an educational grant in support of this course from Mederi Therapeutics*
Endoscopy for Surgeons Hands-On Course

Chair: Klaus Thaler, M.D.; Co-Chair: Debbie Youngelman, M.D.  
Location: Exhibit Hall D

This Hands-On course will complement the didactic portion of endoscopy for surgeons providing exposure to various techniques in an explant model. Participants will have exposure to therapeutic endoscopic techniques including polypectomy, tattooing, management of GI bleeding, stenting, EMR, mucosal ablation for Barrett's, and endoscopic GERD therapy.

Objectives:
At the conclusion of this session, participants will be able to:
- Discuss the basics of available endoscopic equipment and techniques and develop an improved familiarity with various endoscopic techniques currently available
- Discuss the various endoscopic options for management of gastrointestinal bleeding and how to employ each of these techniques
- Describe different techniques for tissue destruction or resection such as those used for the treatment of GERD or endoscopic mucosal resection (EMR) and develop hands on familiarity with these techniques
- Identify techniques for management of post-operative and post-endoscopic complications
- Understand basic techniques important to NOTES (natural orifice translumenal endoscopic surgery)

SCHEDULE
1:30 PM  Introduction  
Klaus Thaler, M.D. & Debbie Youngelman, M.D.

Explant Stations
Barrett's Ablation Stations
Endoscopic GERD Management Stations
pH Monitoring/Motility

Lab Faculty:
Jeffrey Hazey, M.D.
Jonathan Efron, M.D.
Gary Vitale, M.D.
Kevin Wasco, M.D.
C. Daniel Smith, M.D.
Brent Miedema, M.D.
Dean Mikami, M.D.
Bipan Chand, M.D.
W. Scott Melvin, M.D.
John Mellinger, M.D.
Melina Vassilou, M.D.
Christopher Thompson, M.D.
Robert Fanelli, M.D.

SAGES acknowledges educational grants in support of this course from Boston Scientific Inc., Mederi Therapeutics, and Olympus
SAGES acknowledges contributions in-kind in support of this course from Covidien, Davol Inc, A Bard Company, Ethicon Inc., Karl Storz Endoscopy, Mederi Therapeutics, Merit-Endotek, Olympus and US Endoscopy

Safety for Surgeons Panel:
Is Your Profession Causing You Physical Harm?  
Location: Room 214A-B

Chair: Adrian Park, M.D.; Co-Chair: Ramon Berguer, M.D.  
**Allied Health Personnel encouraged to attend.

This session will review the ergonomics of surgery as well as exposure risks in the operating room. It will raise awareness about health concerns to practicing surgeons and instruct how to optimize the health of the OR for those working there daily.

Objectives:
At the conclusion of this session, participants will be able to:
- Recognize the extent of the physical and mental stresses faced by surgeons at work
- Identify necessarily stressful elements of their work place and apply measures to mitigate those stressors
- Recognize factors in surgeon physical and mental well being that may impact their patients

SCHEDULE
8:30 AM  Introduction  
Adrian Park, M.D. & Ramon Berguer, M.D.

8:35 AM  Ergonomics and NS Injuries in MIS: An Impending Epidemic  
Adrian Park, M.D.

8:50 AM  Ergonomic Impact of MIS: What Can We Do About It?  
Stephen M. Kavic, M.D.

9:05 AM  Stress, Burnout and the Surgeon  
Glen C. Balch, M.D.

9:20 AM  Does Surgeon Safety Impact the Patient Safety?  
George Hanna, M.D.

9:35 AM  Discussion
SAGES/SSAT Joint Symposium: Minimally Invasive Hepatobiliary and Pancreatic Surgery – The Next Frontier

Chair: Craig P. Fischer, M.D.  
Co-Chair: Horacio J. Asbun, M.D.

This session will review state of the art practice in MIS approaches to anatomical liver and pancreatic resection. Novel approaches to liver and pancreas disease will be discussed with a focus on required techniques and training.

Objectives:

At the conclusion of this session, participants will be able to:

• Cite current data and clinical series on laparoscopic Pancreas and Liver Surgery
• Explain patient selection for a minimal access approach in the treatment of hepatobiliary and pancreas pathology
• Identify the basic technical steps of laparoscopic pancreaticoduodenectomy and laparoscopic liver resection.
• Discuss novel techniques in a variety of laparoscopic pancreatic and liver surgeries: pancreas preserving duodenectomy, total pancreatectomy, segmental duodenectomy, transgastric management of pancreatic pseudocyst, bile duct resection.

SCHEDULE

8:30 AM - 9:30 AM  *Included in Registration SuperPass (Option A) or Registration Option B

SAGES Learning Center Rounds

Chair: Brian P. Jacob, M.D.  
Co-Chair: Kent Van Sickle, M.D.

The goal of this session is to provide a brief description of what is available at each station in the learning center. Presenters will give brief presentations about their stations. It is a fast moving, but interesting and informative session.

Objectives:

At the conclusion of this session, participants will be able to:

• Discuss the programs offered in the learning center.

SCHEDULE

7:30 AM - 9:00 AM  *Included in Registration SuperPass (Option A) or Registration Option B

2011 Poster Session

Posters will be on display, Thursday, Friday & Saturday. Poster presenters will be available for Q&A on Friday, from 12:30 - 1:30 PM

SAGES acknowledges our Diamond and Platinum Level Donors for their support of the poster session: Covidien, Ethicon Endo-Surgery, Inc., Karl Storz Endoscopy-America, Olympus
SAGES Poster Rounds

Chair: Melina Vassiliou, M.D.; Co-Chair: Benjamin Poulose, M.D.  
Location: Room 217C-D

The goal of this session is to highlight the top poster presentations of the meeting. Presenters will give brief presentations about their work up to a maximum of 4 slides. It is a fast moving, but interesting and informative session.

This session is not accredited for CME by SAGES

SAGES acknowledges our Diamond and Platinum Level Donors for their support of the Poster Rounds:

Diamond: Covidien, Ethicon Endo-Surgery Inc.  
Platinum: Karl Storz Endoscopy, Olympus

SCHEDULE

9:30 AM - 10:30 AM  
Thursday, March 31, 2011  
	SAGES Poster Rounds  
	Chair: Melina Vassiliou, M.D.; Co-Chair: Benjamin Poulose, M.D.  
	Location: Room 217C-D

**Posters of Distinction**

- **P001 LAPAROSCOPIC LIVER RESECTION FOR HEPATOCELLULAR CARCINOMA WITH CIRRHOsis** Akishige Kanazawa, PhD, Tadaaki Tsukamoto, PhD, Sadatoshi Shimizu, PhD, Shintaro Kodai, PhD, Sadaaki Yamazoe, PhD, Department of Hepato-Biliary-Pancreatic Surgery, Osaka City General Hospital
- **P002 THREE YEAR EXPERIENCE OF SINGLE SITE SURGERY AT A SINGLE COMMUNITY INSTITUTION** Chris Edwards, MD, Alan Bradshaw, MD, Mission Hospitals, Asheville NC
- **P003 STANDARDIZATION OF HALS-SP FOR PanCREATIC MALIGnant TUMORS** Masayuki Tori, MD, Hiroki Akamatsu, MD, Katsuhide Yoshidome, MD, Shiyoukichi Ueshima, MD, Ken Omori, MD, Toshirou Nishida, MD, Osaka Police Hospital
- **P004 ANALYSIS OF A SINGLE INSTITUTION EXPERIENCE WITH LAPAROSCOPIC CHOLEDOCHODUODENOSTOMY** Yoshodan S Khajanchee, MD, Maria A Cassera, BS, Chet W Hammill, MD, Lee L Swanstrom, MD, Paul D Hansen, MD, Providence Portland Medical Center
- **P005 EFFECT OF INCREASING CASE COMPLEXITY ON FUNDAMENTAL LAPAROSCOPIC SKILLS: UNDERSTANDING THE SKILL SET FOR ADVANCED LAPAROSCOPY** Marilou Vaillancourt, MD, Melina C Vassiliou, MD, Simon Bergman, MD, Gerald M Fried, MD, Sebastian Demyttenaere, MD, Pepa Kaneva, MSc, Liane S Feldman, MD, Steinberg-Bernstein Centre for Minimally Invasive Surgery & Innovation, Department of Surgery, McGill University, Montreal, Canada
- **P006 SURGICAL RESIDENT LEARNING CURVE FOR A SIMULATED SINGLE PORT LAPAROSCOPIC SURGICAL TASK** Nathan E Conway, MD, Neal E Seymour, MD, Ron W Bush, BS, John R Romanelli, MD, Baystate Medical Center, Tufts University School of Medicine
- **P007 RADIOFREQUENCY ABLATION FOR INTRAMUCOSAL CARCINOMA IN BARRETT’S ESOPHAGUS** H L Elliott, MD, B J Loew, MD, S R Gordon, MD, I R Rothstein, MD, Dartmouth Hitchcock Medical Center
- **P008 SINGLE PORT TRANSUMBILICAL LAPAROSCOPIC APPENDECTOMY: A PRELIMINARY COMPARTAUVE RANDOMIZED STUDY WITH ACUTE APPENDICITIS** R Vilallonga, PhD, A Nada, PhD, Oscar Gonzalez, PhD, A Sumer, T Demirel, Manuel Armengol, U Barbaros, General Surgery Department. University Hospital Vall d’Hebron. Barcelona. Spain. General Surgery Department. Cairo University. Egypt.
- **P009 A CASE-MATCHED COMPARISON OF LAPAROSCOPIC AND ROBOTIC COLORECTAL SURGERY** Marylise Boutrous, Dr, Anthony III M Vernava, Dr, Physicians Regional Medical Center, Cleveland Clinic Florida
- **P010 EFFICACY OF ALVIMOPAN (ENTEREG) AFTER OPEN VS. LAPAROSCOPIC COLECTOMY** Fia Yi, MD, Stephanie Pappas, MD, Kelly Klinker, MD, David N Armstrong, MD, Georgia Colon and Rectal Surgical Clinic
- **P011 AVOIDANCE OF COLLIS GASTROPLASTY BASED ON GI SYMPTOM CONCERNS IS NOT JUSTIFIED** Wai M Yeung, MD, Vladan N Obradovic, MD, Aamir Akmal, MD, Mohanbabu Alaparthi, MD, Jon D Gabrielsen, MD, Anthony T Petrick, MD, Geisinger Medical Center
- **P012 CAUSES OF DISSATISFACTION FOLLOWING LAPAROSCOPIC FUNDOPPLICATION: THE IMPACT OF RECURRENT SYMPTOMS, NEW SYMPTOMS, AND THE PATIENT EXPERIENCE** Leilag A Humphries, Kenneth Lubercise, BS, Sharona B Ross, MD, Alexander S Roseurgy, MD, Digestive Disorders Center, Tampa General Hospital, Tampa, FL, USA
- **P013 ONCOLOGIC OUTCOMES OF LAPAROSCOPIC SURGERY FOR GASTROINTESTINAL STROMAL TUMOR (GIST) OF THE STOMACH.** Norihito Wada, MD, Tsunehiro Takahashi, MD, Hiroya Takeuchi, MD, PhD, Rieko Nakamura, MD, PhD, Takashi Ohyama, MD, Yoshio Saikawa, MD, PhD, Makio Mukai, MD, PhD, Yuko Kitagawa, MD, PhD, Department of Surgery, School of Medicine, Keio University
- **P014 OUTCOMES OF MINIMALLY INVASIVE IVOR LEWIS ESOPHAGOGASTRECTOMY: ANALYSIS OF 105 CASES** Ninh T Nguyen, MD, Xuan-Mai T Nguyen, PhD, Anderson H Shih, Taraneh Matin, Kevin M Reavis, MD, Brian Smith, MD, UC Irvine Medical Ctr
- **P015 OUTCOMES OF LAPAROSCOPIC COLECTOMY FOR CANCER IN ELDERLY PATIENTS** Wai Lun Law, MD, Jensen T Poon, MD, Joe K Fan, MD, Osvens S Lo, MD, Chi Chung Foo, MD, The University of Hong Kong
- **P016 LAPAROSCOPIC TOTALGASTRECTOMY AND D2 LYMPHADENECTOMY FOR GASTRIC CANCER AND INTRACORPOREAL ROUX-EN-Y RECONSTRUCTION USING ORO-GASTRIC ANVIL, OVER 120 CASES EXPERIENCES** Hitoshi Sotodate, Dr, Haruhiro Inoue, Dr, Junichi Tanka, Dr, Shin-eh Kudo, Digestive Disease Center, Showa University Northern Yokohama Hospital
- **P017 THE CURRENT STATUS OF LAPAROSCOPIC LIVER RESECTION IN JAPANESE SINGLE INSTITUTION AND A PROPOSAL OF CLASSIFICATION OF LAPAROSCOPIC LIVER RESECTION BASED ON TECHNICAL DEMAND** Kan Toriquchi, MD, Etsuro Hatano, MD, PhD, Koji Kitamura, MD, Takamichi Ishii, MD, PhD, Takafumi Machimoto, MD, PhD, Kojiro Taura, M.D, Pentaro Yasukichi, MD, PhD, Shinji Uemoto, MD, PhD, Department of Surgery, Graduate School of Medicine, Kyoto University, Kyoto, Japan
- **P018 EVALUATION OF THE ONCOLOGICAL STANDARD OF MINIMALLY INVASIVE ESOPHAGECTOMY (MIE) IN A UK SPECIALIST UNIT** James A RINK, MD, FRCs, David F HEWIN, MD, FRCs, Martin S WADLEY, MD, FRCs, Worcestershire Royal Hospital, Worcester, UK, and Three Counties Upper GI Unit, Gloucestershire Royal Hospital, Gloucester, UK
- **P019 SINGLE-INCISION LAPAROSCOPIC CHOLECYSTECTOMY RESULTS IN SIMILAR SHORT-TERM POST-OPERATIVE PAIN AND QUALITY OF LIFE SCORES WHEN COMPARED TO MULTI-INCISION: A PROSPECTIVE RANDOMIZED BLINDED COMPARISON** Dennis Leung, MS, Woody Denham, MD, Mohammad Salabat, MD, Zeeshan Butt, PhD, Ernillo Barrera, MD, Michael Ujiki, MD, NorthShore University HealthSystem, Chicago, IL

*Scheduled!*
SAGES Exhibits, Posters & Learning Center Open

SAGES/ACS Obama Health Care Reform Symposium: An Update
Chair: David W. Rattner, M.D.
Co-Chair: David Hoyt, M.D.
Location: Room 217C-D

*Allied Health Personnel encouraged to attend.
One year later, what has been implemented in health care reform and what is the effect? What can we learn from states with experience in universal coverage?

Objectives:
At the conclusion of this session, participants will be able to:
- Understand the role of the IPAB
- Understand the quality metrics that will be used to impact payment schemes
- Understand the legislative process and how to participate in it and influence it

SCHEDULE
10:30 AM - 12:00 PM

10:30 AM Introduction
David W. Rattner, M.D. & David Hoyt, M.D.

10:35 AM Lessons Learned from Universal Coverage in Massachusetts
Timothy Murphy

10:50 AM Physician Payment Reform – The IPAB and Its Role
Andrew Warshaw, M.D.

11:05 AM How Physicians Can Influence the Course of Health Care Reform
John Armstrong, M.D.

11:20 AM Quality and Safety in Health Care Reform – Is It Real or Just Lip Service?
Matthew Hutter, M.D.

11:35 AM Discussion

SAGES/JSES What’s New in Lower GI Surgery Symposium
Chair: Manabu Yamamoto, M.D.
Co-Chair: Barry A. Salky, M.D.
Location: Room 214A-B

This is a joint conference with speakers chosen by each society. Topics include both benign and malignant disease, should incorporate video demonstrations of technique – particularly where there are significant differences between North America and Japan.

Objectives:
At the conclusion of this session, participants will be able to:
- List the latest therapeutic options of minimally invasive lower GI surgeries
- Discuss the similarities and differences between North America and Japan
- Reflect the patient’s care to obtain better outcomes and satisfaction

SCHEDULE
10:30 AM - 12:00 PM

10:30 AM Introduction
Manabu Yamamoto, M.D. & Barry A. Salky, M.D.

Basic Procedures with Anatomical Approach
10:35 AM Kiyokazu Nakajima, M.D. (JSES)
10:42 AM Eric Glenn Weiss, M.D. (SAGES)

Robotic Surgery of the Rectum
10:49 AM Tsunekazu Hanai, M.D. (JSES)
10:56 AM Alessio Pigazzi, M.D. (SAGES)

Single Port and TEM
11:03 AM Eiji Kanehira, M.D. (JSES)
11:10 AM Dan Geisler, M.D. (SAGES)

Rectal Cancer
11:17 AM Yoshiharu Sakai, M.D. (JSES)
11:24 AM Steven D. Wexner, M.D. (SAGES)

IBD
11:31 AM Hiroshi Hasegawa, M.D. (JSES)
11:38 AM John Marks, M.D. (SAGES)
11:45 AM Discussion
### Getting New Technology Into Your Hospital

**Chair:** Dennis L. Fowler, M.D.  
**Co-Chair:** Anand Joshi, M.D., M.B.A.  
**Location:** Room 214C-D  

Surgeons often encounter resistance from their hospital when requesting additional or new technology that would enhance their surgical procedures. This session identifies and explains the reasons for that resistance and offers suggestions to help them overcome that resistance.

**Objectives:**  
At the conclusion of this session, participants will be able to:  
- Describe the basis for hospital decision-making regarding technology acquisition  
- Collaborate with a hospital-based Materials Manager to optimize available technology at his/her institution  
- Participate in technology review committees for their operating room/hospital

**Schedule:**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:30 AM</td>
<td><strong>Introduction</strong></td>
<td>Dennis L. Fowler, M.D. &amp; Anand Joshi, M.D.</td>
</tr>
<tr>
<td>10:35 AM</td>
<td>The Goals: Better Technology for Better Patient Care</td>
<td>Steven Schwaitzberg, M.D.</td>
</tr>
<tr>
<td>10:45 AM</td>
<td>The Impediments: Costs, Inventory Management, Bundling, Compliance Contracts</td>
<td>James Mullin, M.D.</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>Can Industry Help? – The Role of the Company with the New Technology</td>
<td>Gary Johnson</td>
</tr>
<tr>
<td>11:15 AM</td>
<td>Who in Your Hospital Can Help: Materials Manager, Purchasing Agent, CEO?</td>
<td>Anand Joshi, M.D., M.B.A.</td>
</tr>
<tr>
<td>11:25 AM</td>
<td>Strategies for Getting Technology in Your Hospital</td>
<td>Dennis L. Fowler, M.D.</td>
</tr>
<tr>
<td>11:40 AM</td>
<td>Discussion</td>
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SAGES acknowledges an educational grant in support of this course from Ethicon Endo-Surgery, Inc.

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### Education Luncheon: Restoring Independence into Residency Training – Everbody Wants It, But How Do We Do It?

**Chair:** Brent Matthews, M.D.  
**Co-Chair:** John Mellinger, M.D.  
**Location:** Room 217A-B

In the “old days,” chief residents operated independently and gained confidence in their surgical skills while still within the supportive environment of a residency training program. In the modern era of residency training, a patient cannot even be taken into the operating room without the attending surgeon present. This session will discuss the changing nature of the academic surgical environment, including the tension between surgical education and patient care, and will focus on strategies to restore or maintain operative independence during residency training within the limitations of the contemporary operative patient care environment.

**Objectives:**  
At the conclusion of this session, participants will be able to:  
- Recognize barriers between surgical education and patient care  
- Identify strategies to increase resident operative independence in the future academic surgical environment  
- Specify the role of surgical simulation in developing operative independence  
- Describe the impact of resident operative independence on surgery outcomes

**Schedule:**

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<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
<th>Presenter</th>
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<tbody>
<tr>
<td>12:00 PM</td>
<td><strong>Introduction</strong></td>
<td>Brent Matthews, M.D. &amp; John Mellinger, M.D.</td>
</tr>
<tr>
<td>12:05 PM</td>
<td>The Tension Between Surgical Education and Patient Care: How is it Alleviated?</td>
<td>John O’Shea, M.D.</td>
</tr>
<tr>
<td>12:20 PM</td>
<td>Maintaining Operative Independence of the Surgery Resident: Impact on Surgical Outcomes</td>
<td>Brent Matthews, M.D.</td>
</tr>
<tr>
<td>12:35 PM</td>
<td>Can Surgical Simulation Training Improve Operative Performance and Independence?</td>
<td>Dennis Fowler, M.D.</td>
</tr>
<tr>
<td>12:50 PM</td>
<td>Strategies for Maintaining Resident Operative Independence in the Academic Training Program of the Future: A Surgery Program Directors Perspective</td>
<td>John Mellinger, M.D.</td>
</tr>
<tr>
<td>1:05 PM</td>
<td>Discussion</td>
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</table>

SAGES acknowledges our Diamond Level Donors for their support of this activity: Covidien, Ethicon Endo-Surgery, Inc.
Concurrent Sessions

SS03 Best of Video I
Moderators: Steve Eubanks, MD, Steven Bowers, MD
V003 LAPAROSCOPIC ESOPHAGO GASTRECTOMY WITH COLONIC INTERPOSITION C Palanivelu, MCH FACS FRCS, P Senthilnathan, MS DNB MRCs, P S Rajan, MS FACS, P Praveen Raj, MS, V Vaithishwaran, MS, R Parthasarathi, MS, GEM Hospital
V004 LAPAROSCOPIC REVISION OF ESOPHAGOMYOTOMY Michael Edye, MD FACS, Ramin Roohipour, MD, Leon Kushnir, MD, Barry Jaffin, MD, Mount Sinai School of Medicine, New York, N.Y.
V005 LAPAROSCOPIC RESECTION OF AN ESOPHAGEAL Duplication CYST Ross F Goldberg, MD, Michael Parker, MD, John A Stauffer, MD, Horacio J Asbun, MD FACS, C. Daniel Smith, MD FACS, Steven P Bowers, MD FACS, Mayo Clinic - Florida
V006 SINGLE INCISION TRANSLABIAL LAPARO-ENDOSCOPIC GASTRIC BENIGN TUMOR RESECTION Giovanni Dapi, MD, Ruffin Ntounda, MD, Lorenzo Casali, MD, Pietro Carnevali, MD, Jacques Himpens, MD, Guy-Bernard Cadriere, MD PhD, European School of Laparoscopic Surgery, Saint-Pierre University Hospital, Brussels, Belgium
V007 LAPAROSCOPIC ROUX-EN-Y DUODENOEJUNAL BYPASS FOR SUPERIOR MESENTERIC ARTERY SYNDROME G Higa, A Abdemur, M Giansos, S Szomstein, R J Rosenthal, Cleveland Clinic Florida
V008 LAPAROSCOPIC FUNDOPULATION AFTER ENDOLUMENAL THERAPIES FOR GERD Michael Edye, MD, John Harvey, MD, Anthony Starpoli, MD, Barry Salky, MD, Mount Sinai School of Medicine
V009 TRANSENSAL, VIDEO-ASSISTED SURGERY (TAVAS) UTILIZING A SILS™ PORT FOR THE TREATMENT OF COMPLICATIONS FOLLOWING SIGMOID COLON RESECTION AND EAA ANASTOMOSIS Patrick R Reardon, MD, Brian J Dunkin, MD, Eric M Haas, MD, Joanne Chung, MD, Vadim Sherman, MD, Vega Koss, MD, Luis Benavente-Chenals, MD, The Methodist Hospital Department of Surgery Methodist Institute for Technology, Innovation, and Education Houston, Texas 77030
V100 TRANSENSAL SPECIMEN RETREIVAL USING THE TEM SYSTEM IN MINIMALLY INVASIVE COLON RESECTION Konstantinos I Makris, MD, Erwin Rieder, MD, Andrew Kastenmeier, MD, Lee L Swanstrom, MD, Legacy Health
V101 PURE TRANSVAGINAL LAPAROSCOPIC APPENDECTOMY Kurt E Roberts, MD, Dan-Arin Silasi, MD, Robert L Bell, MD, Andrew J Diffy, MD, Yale School of Medicine
V102 ERCP IN A PATIENT WITH PREVIOUS ESOPHAGECTOMY AND BILLROTH II GASTROJEJUNOSTOMY Melissa S Phillips, MD, Jeffrey M Marks, MD, Aminab Chak, MD, University of Nebraska Medical Center
V103 NOVEL TECHNIQUE FOR REDUCED INCISION LAPAROSCOPIC NISSEN FUNDOPULATION USING A SINGLE INCISION MULTIPORT ACCESS DEVICE WITH FLEXIBLE INSTRUMENTATION John G Linn, MD, Kyle A Perry, MD, W. Scott Melvin, MD, The Ohio State University Medical Center
V104 SURGICAL MANAGEMENT OF LARGE HIATAL HERNIA AFTER A FAILED ANTI-REFLUX SURGERY Arpad Juhasz, MD PhD, Abhishek Sundaram, MBBS MPH, Masato Hoshino, MD, Tommy H Lee, MD, Sumeet K Mittal, MD, Department of Surgery, Creighton University Medical Center, Omaha, NE, USA
V105 THE ROLE OF SHORT- LIMB ROUX-EN-Y RECONSTRUCTION FOR FAILED ANTI-REFLUX SURGERY: A SINGLE CENTER 5-YEAR EXPERIENCE K I Makris, MD, A Panwar, MD, A Ali, BS, B Willer, MD, T H Lee, MD, S K Mittal, MD, Department of surgery, Creighton University, Omaha, Nebraska
V106 LAPAROSCOPIC TRANSHIATAL ESOPHAGECTOMY AFTER FAILED HELLER MYOTOMY THROUGH LEFT THORACOTOMY Nestor de la Cruz-Munoz, MD, Alan Livingstone, MD, University of Miami Miller School of Medicine
V107 POSTOPERATIVE DYSPHAGIA DOES NOT PREDICT HIGHER LONG-TERM FAILURE RATES FOR LAPAROSCOPIC ANTIREFLUX SURGERY Konstantinos I Makris, MD, Maria A Cassera, BS, Andrew S Kastenmeier, MD, Christy M Dunst, MD, Lee L Swanstrom, MD, Legacy Health
V108 PSEPSIN DETECTION IN PATIENTS WITH LARYNGOPHARYNGEAL REFLUX BEFORE AND AFTER FUNDOPULATION Elcelo B Wassenaar, MD PhD, Nikkii Johnston, PhD, Albek Merati, MD, Martin Monteno vivo, MD, Rebecca P Petersen, MD MSc, Roger P Tatum, MD, Carlos A Pellegrini, MD, Brant K Oelschlager, MD, Department of Surgery, University of Washington, Seattle WA
V109 TOUPEFT FUNDOPULATION WITH LAPAROSCOPIC HELLER MYOTOMY IS ASSOCIATED WITH MORE POSTOPERATIVE DYSPHAGIA Elizabeth J Honigberg, MD, Gina L Adrales, MD, Jennifer E Tonnesson, BS, William S Laycock, MD, Thadeus L Trus, MD, Dartmouth Hitchcock Medical Center
V110 DOES INTRA-OPERATIVE PERFORATION IMPACT OUTCOMES OF HELLER MYOTOMY FOR ACHALASIA? Simon C Chow, MD, Carlos H Chan, MD PhD, Matthieu Rousseau, MD, Stephen Gowing, MD, Serge Mayrand, MD, Melina C Vassiliou, MSc, Joel M Fried, MD, Lorenzo E Ferri, MD PhD, McGill University
V111 QUALITY OF LIFE OUTCOMES AFTER HELLER MYOTOMY FOR ACHALASIA COMPARING DOR AND TOUPEUT FUNDOPPLICATIONS Michael K Fishman, MD, Seth Judd, MD, Jerome Lyn Sue, MD, Jonathan Tomasko, MD, Christopher S Hollenbeak, PhD, Ann Rogers, MD, Randy Haluck, MD, Penn State Milton S. Hershey Medical Center
V112 TRANSCERVICAL VIDEOESOPHAGEAL DISSECTION DURING TWO-FIELD MINIMALLY INVASIVE ESOPHAGECTOMY – EARLY PATIENT EXPERIENCE Michael Parker, MD, Steven P Bowers, MD, Ross F Goldberg, MD, Jason M Pfluke, MD, John A Stauffer, MD, Horacio J Asbun, MD, C Daniel Smith, MD, Mayo Clinic Florida
When Bad Things Happen to Good Surgeons Panel

Chair: Daniel B. Jones, M.D.  
Location: Room 214C-D

Most surgeons will be sued during their careers and as a result liability concerns contribute to many decisions surgeons make. Video of surgical mishaps will illustrate complications that often lead to malpractice claims and presentations will detail what the medical malpractice experience is like for surgeons who are sued. Focus will be on avoiding complications, managing the situation when they occur including how to disclose information to patients/families/other interested parties, and protection from liability. Presentations will examine how to improve the quality of surgical care including how to analyze the root cause when bad things happen, how to translate the results of analysis into improvements in care, and what tools exist now to help surgeons proactively improve their local system of care before events occur. Presentations by surgeons, attorneys, insurance companies, and the American Board of Surgery are included in the program. Sponsored by SAGES Quality, Outcomes and Safety Committee.

Objectives:
At the conclusion of this session, participants will be able to:
- Manage laparoscopic and endoscopic surgery complications
- Understand and implement risk management strategies
- Apply MIS Safety Checklist
- Meeting requirements of MOC

SCHEDULE

1:30 PM  Introduction  
Daniel B. Jones, M.D.

1:35 PM  Caught on Video – Worst Surgical Mishaps – What Happened Next?  
Raul Rosenthal, M.D.

1:45 PM  The ABC’s of a Medical Malpractice Suit  
Robert W. Bailey, M.D.

1:55 PM  The Medical Expert Witness  
Edward Felix, M.D.

2:05 PM  Managing Risk When an Event Occurs: Disclosure, Liability, and Exposure  
Linda Campbell

2:15 PM  Discussion  

2:30 PM  How Can I Improve My System of Care?  
Root Cause Analysis, SCIP, CQU Initiatives, Etc.  
John Morton, M.D.

2:45 PM  FLS, Team Training and Your Malpractice Carrier  
Daniel B. Jones, M.D.

2:55 PM  SAGES-AORN MIS Safety Checklist  
L. Michael Brunt, M.D.

3:05 PM  American Board of Surgery: Can MOC Really Help?  
Jo Buyske, M.D.

3:15 PM  Discussion  

Unique Features of the 2011 SAGES Program

- Attire for meeting is business casual – Leave your ties at home and western wear encouraged!
- All didactic postgraduate courses are FREE with your meeting registration!
- Humorous Video Shorts are being added to the Sing-off – submit your videos now!
- Special sessions of interest for Allied Health Care Professionals!
  - Fundamentals for the Use of Safe Energy (FUSE) Postgraduate Course
  - Incorporating FLS and FES into Your Residency Panel
  - Device Development: Idea to Product – How to Commercialize Your Great Ideas
  - Safety for Surgeons Panel: Is Your Profession Causing You Physical Harm?
  - SAGES/ACS Obama Health Care Reform Symposium: An Update
  - Getting New Technology Into Your Hospital
  - Lessons Learned From Private Practice Session: Efficiency and Cost Saving
  - Video Symposium: Illustrations of Managing Complications and Re-Operations in MIS
  - SAGES/ASCRS Laparoscopic Colon Surgery Symposium: Why Aren’t More Surgeons Doing This Operation?
  - Patient Safety Panel
  - General Surgery in Obese Patients Session: Tips and Tricks
  - Adolescent Surgery Session: They Look Like Adults, but Aren’t the Same

- The entire 2011 meeting has been designated for Self-Assessment CME Credit, applicable to Part 2 of the American Board of Surgery (ABS) Maintenance of Certification (MOC) Program. In order to claim Self-Assessment credit, attendees must participate in a post meeting assessment in July, 2011. All surgeons are required to have one third of their required Category 1 CME designated as Self-Assessment credits over a three-year cycle. For additional information on the ABS MOC program and its requirements, visit the ABS website at: http://home.absurgery.org/default.jsp?exam-moc.
### Concurrent Sessions

#### SS05 Colorectal II
**Moderators:** Mark Talamini, MD, Denise Gee, MD

**SS01** LAPAROSCOPIC COLECTOMY SIGNIFICANTLY DECREASES LENGTH OF STAY WHEN COMPARED TO OPEN OPERATION
- **Stefanou, MD**, C Reickert, MD, A Falvo, DO, V Velanovich, MD, I Rubinfeld, MD, Henry Ford Hospital

**V017** LAPAROSCOPIC TRANSVAGINAL RIGHT COLECTOMY WITH A NOVEL VAGINAL ACCESS PORT
- **Andrew D Prather, MD**, Manoel G Neto, MD, Almino Ramos, MD, Ricardo Zorron, MD, James J Mateja, Jorge E Marcut, MD, University of South Florida College of Medicine

**SS02** SEPIRAFILM SLURRY DOES NOT INCREASE COMPLICATION RATES AFTER LAPAROSCOPIC COLECTOMY
- **Adithya Suresh, MD**, Ziad T Awad, MD FACS, University of Florida College of Medicine, Jacksonville

**SS03** LAPAROSCOPIC RIGHT HEMICOLECTOMY SHOULD BE THE STANDARD OF CARE FOR DISEASES OF THE RIGHT COLON WHICH REQUIRE SURGICAL RESECTION: A LARGE MULTICENTER OUTCOME STUDY
- **Oleg Dolghi, MD**, Vishal M Kothari, MD, Jason F Reynoso, MD, Elizabeth M Schmidt, MD, Anton Simorov, MD, J U Unnirevi, MBBS, Dmitry Olevnykov, MD, University of Nebraska Medical Center

**SS04** COST EFFICIENCY OF LAPAROSCOPIC VERSUS OPEN COLON SURGERY IN A TERTIARY CARE CENTRE
- **Nawar A Alkhamesi, MD PhD FRCSGenSurg FRCS FRCSEd**, Christopher M Schlachta, BSc MD CM FRCS FACS, CSTAR (Canadian Surgical Technologies and Advanced Robotics), London Health Science Centre, London, Ontario, Canada

**SS05** PRELIMINARY CLINICAL EXPERIENCE ON TRANSCOLONIC NOTES- TRANSRECTAL SINGLE PORT FOR RECTAL RESECTION AND TME
- **Ricardo Zorron, PhD**, Henrique Neubarth, MD, Cristine Quintas, MD, Djalma Coelho, PhD, Fabiano B Lemos, MD, Ricardo Vassallo, MD, Manoel Galvao, MD, Department of Surgery – Hospital Municipal Miguel Couto, Department of Surgery – University Hospital Teresópolis HCTCO-FESO, Rio de Janeiro, Brazil

**SS06** LAPAROSCOPY WITHIN A FAST TRACK PROTOCOL ENHANCES THE SHORT-TERM RESULTS AFTER ELECTIVE SURGERY FOR RESECTABLE COLORECTAL CANCER
- **Francesco Feroci, MD**, Elisa Lenzi, MD, Richard G Whelan, MD, St Luke Roosevelt Hospital Center, Department of Colon and Rectal Surgery, New York, NY 10019, USA

**SS07** NEAR INFRA-RED (NIR) LAPAROSCOPY FOR LYMPHATIC ROAD-MAPPING AND SENTINEL NODE BIOPSY IN PATIENTS WITH LOCALIZED COLORECTAL NEOPLASIA
- **Ronan A Cahill, MD**, Mark Anderson, MD, James East, MD, Lai Mun Wong, MD, Richard Guy, MD, Olivia Jones, MD, Ian Lindsey, MD, Chris Cunningham, MD, Neil J Mortensen, MD, EISRI, Dublin, Ireland and Oxford Radcliffe Hospitals, Oxford, UK

**SS08** MINIMALLY INVASIVE COLORECTAL RESECTION IS ASSOCIATED WITH DECREASED LEVELS OF THE TUMOR GROWTH INHIBITOR PLASMA ANGIOPOIETIN-LIKE PROTEIN 4 (ANGPTL4) DURING THE FIRST MONTH AFTER SURGERY WHICH MAY PROMOTE ANGIOGENESIS AND TUMOR GROWTH
- **HMC Shantha Kumara, PhD**, Daniel Kirchoff, MD, Sajith A Herath, BS, Joon Ho Jang, MD, Vesna Cekic, RN, Richard L Whelan, MD, St Luke Roosevelt Hospital Center, Department of Colon and Rectal Surgery, New York, NY 10019, USA

**SS09** LAPAROSCOPIC APPROACH TO OBSTRUCTIVE COLON CANCER: WHAT ARE THE OPTIONS?
- **Morris E Franklin, JR, MD** FACS, Karla Russek, MD, Daniel Davila, MD, Texas Endosurgery Institute

**SS09** COMPARISON OF POSTOPERATIVE FUNCTIONS BETWEEN LAPAROSCOPIC ISR AND OPEN ISR IN VERY LOW RECTAL CANCER MASAALKI ITO, MD PhD, NORIO SAI TO, MD PhD, YUSUKE NISHIZAWA, MD PhD, MASANORI SUGITO, MD PhD, AKIHITO KOBA YASHI, MD PhD, National Cancer Center Hospital East

**SS09** FIVE STRATEGIES THAT REDUCE TOTAL LENGTH OF STAY FOR COLORECTAL SURGERY AT ACADEMIC TEACHING HOSPITALS
- **Mary-Anne Aarts, MD**, Allan Okrainec, MD, Amy Glicksman, MD, Emily Pearsall, Robin S McLeod, MD, Department of Surgery, University of Toronto

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**Inguinal Hernia – Laparoscopic vs. Open Debate: What is the BEST Practice?**

**Chair:** Edward Felix, M.D.; **Co-Chair:** Robert Fitzgibbons, M.D.  
**Location:** Room 214A-B

Inguinal hernia repair is one of the most common surgical procedures performed today. Despite many publications there is still confusion about which approach, laparoscopic or open, is superior or whether one approach is better under certain circumstances. This session focuses on review of best data for laparoscopic and open inguinal hernia. The common techniques will be discussed and recommendations as to best practices will be presented where possible.

**Objectives:**

At the conclusion of this session, participants will be able to:

- Discuss the risks and benefits of laparoscopic and open repairs for primary hernias
- Understand the differences between TAPP and TEP hernia approaches and take advantage of these differences
- Determine which hernia approach would be most appropriate for complex hernias
- Understand the indications for the use of fixation and determine when fixation in inguinal hernia repair is necessary

**SCHEDULE**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>3:30 PM</td>
<td>Introduction</td>
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<tr>
<td></td>
<td>Edward Felix, M.D.</td>
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<tr>
<td>3:35 PM</td>
<td>Laparoscopic vs. Open (Lichtenstein Repair) for Primary Unilateral Hernias</td>
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<td>3:35 PM</td>
<td>Swedish Results</td>
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<td></td>
<td>Guy Voeller, M.D.</td>
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<td>3:45 PM</td>
<td>VA Study</td>
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<td>Robert Fitzgibbons, M.D.</td>
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<td>3:55 PM</td>
<td>Discussion of Results</td>
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<td></td>
<td>Guy Voeller, M.D.</td>
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<tr>
<td>4:05 PM</td>
<td>What is the Best Choice TAPP or TEP for Laparoscopic Hernia Repair?</td>
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<tr>
<td>4:05 PM</td>
<td>Laparoscopic</td>
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<tr>
<td></td>
<td>Shirin Towfigh, M.D.</td>
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<tr>
<td>4:15 PM</td>
<td>Open</td>
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<td></td>
<td>Bruce Ramshaw, M.D.</td>
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<tr>
<td>4:25 PM</td>
<td>Are There Situations That Are Better Suited for Laparoscopic or For Open Hernia Repair?</td>
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<tr>
<td>4:25 PM</td>
<td>TAPP</td>
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<tr>
<td></td>
<td>Reinhard Bittner, M.D.</td>
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<tr>
<td>4:35 PM</td>
<td>TEP</td>
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<td>Brian Jacob, M.D.</td>
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<tr>
<td>4:45 PM</td>
<td>Do We Need Fixation of the Mesh?</td>
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<td>4:45 PM</td>
<td>No Fixation</td>
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<tr>
<td></td>
<td>Maurice Arregui, M.D.</td>
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<tr>
<td>4:55 PM</td>
<td>Fixation</td>
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<td></td>
<td>Edward Felix, M.D.</td>
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<tr>
<td>5:05 PM</td>
<td>Discussion</td>
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<td>All Faculty</td>
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**Managing Bariatric Surgery Emergencies for the Non-Bariatric Surgeon Session**

**Chair:** Bruce Schirmer, M.D.; **Co-Chair:** Vadim Sherman, M.D.  
**Location:** Ballroom C2-3

With the continually increasing volume of bariatric surgeries performed, non-bariatric surgeons are often faced with dealing with acute and chronic complications following bariatric surgery. This session will provide a concise overview of the most current management of common bariatric clinical situations for both bariatric and non-bariatric surgeons.

**Objectives:**

At the conclusion of this session, participants will be able to:

- Recognize the typical presenting symptoms for complications after gastric bypass that include stenosis of the gastrojejunostomy, bleeding and leaks. List the appropriate evaluation steps to confirm these common diagnoses and describe their treatment.
- Recognize the clinical presentation and likely etiology of a bowel obstruction following gastric bypass. List the appropriate evaluation steps to confirm these common diagnoses. Describe their treatments.
- Recognize the typical symptoms for patients with complications after laparoscopic adjustable gastric banding that include bleeding, erosion, and slippage of the band. Describe the treatments of these conditions.
- Specify the problems and solutions to performing common abdominal operations in patients who have had previous bariatric surgery.

**SCHEDULE**

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<tr>
<th>Time</th>
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<tr>
<td>3:30 PM</td>
<td>Introduction</td>
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<tr>
<td></td>
<td>Bruce Schirmer, M.D. &amp; Vadim Sherman, M.D.</td>
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<tr>
<td>3:35 PM</td>
<td>Dysphagia and Food Intolerance</td>
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<td></td>
<td>Benjamin Schneider, M.D.</td>
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<tr>
<td>3:50 PM</td>
<td>Treatment of GI Bleeding in the Bariatric Patient</td>
</tr>
<tr>
<td></td>
<td>Dean Mikami, M.D.</td>
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<tr>
<td>4:05 PM</td>
<td>Leaks: Their Diagnosis and Treatment</td>
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<td></td>
<td>Peter Hallowell, M.D.</td>
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<tr>
<td>4:20 PM</td>
<td>The Slipped Lap Band</td>
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<tr>
<td></td>
<td>Raul Rosenthal, M.D.</td>
</tr>
<tr>
<td>4:35 PM</td>
<td>Bowel Obstruction After Gastric Bypass</td>
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<td></td>
<td>Shahzeer Karmali, M.D.</td>
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<tr>
<td>4:50 PM</td>
<td>Technical Aspects of Performing Other General Surgery Operations</td>
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<td>in Patients Who Have Had Bariatric Surgery</td>
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<td></td>
<td>Vadim Sherman, M.D.</td>
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<tr>
<td>5:05 PM</td>
<td>Discussion</td>
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</tbody>
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Industry Education Events (No registration required)

Industry presentations will take place on Thursday evening, immediately following SAGES sessions. Symposia on varying topics will be offered in SAGES session rooms. Registration is FREE for any SAGES attendee.

**These events are not planned nor accredited for CME by SAGES.

Davol Inc., a BARD Company

“Evolving Technologies in Laparoscopic Ventral Hernia Repair”

Speaker: Guy Voeller, MD, FACS

This is a non-CME activity presented and supported by Davol Inc., a BARD Company.

Ethicon Endo-Surgery, Inc.

“Innovating to Improve Patient Outcomes: Exploring Surgeon, Device and Tissue Interactions”

Faculty:

C. Daniel Smith, MD, FACS
Professor and Chairman, Department of Surgery, Mayo Clinic, Jacksonville, Florida

Mark A. Talamini, MD, FACS
Professor and Chairman, Department of Surgery, Surgeon-in-Chief, University of California, San Diego

Richard L. Whelan, MD, FACS
Professor of Surgery, Columbia University College of Physicians and Surgeons, Chief, Division of Colon and Rectal Surgery
Chief, Surgical Oncology, St. Luke's-Roosevelt Hospital

This is a non-CME activity presented and supported by Ethicon Endo-Surgery, Inc.

Intuitive Surgical

“da Vinci General Surgery, from Multi-Port to Single-Access Robotic Applications”

Please join Intuitive Surgical for a symposium presenting applications in da Vinci General Surgery. The session includes presentations by expert robotic surgeons on colorectal, upper GI and bariatric surgery. In addition to outcomes based data, presenters will provide practical advice and narrate case videos with a focus on the “how to”. In addition, come learn about the evolution of da Vinci Surgery from multi-port to single-access applications.

This is a non-CME activity presented and supported by Intuitive Surgical.

Novartis Pharmaceuticals Corporation

“Gastrointestinal Stromal Tumors: Considerations for Surgeons”

Presented by:

Peter Pisters, MD, FACS
Professor of Surgery, University of Texas, MD Anderson Cancer Center, Houston, TX

5:30 PM Registration
6:00 - 7:30 PM Dinner Program

This unique disease education opportunity will discuss

• Identification and diagnosis of gastrointestinal stromal tumors (GIST)
• Surgical resection is primary treatment for patients with localized GIST but not necessarily a cure
• Coordination with the full multidisciplinary patient management team

This is a non-CME activity presented and supported by Novartis Pharmaceuticals Corporation.

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## Scientific Sessions & Panels

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<td>SS06 – Plenary Session I</td>
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<tr>
<td>9:00 - 9:30 AM</td>
<td>Ballroom C2-3</td>
<td>SAGES Presidential Address:</td>
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<tr>
<td></td>
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<td>Those to Whom Much is Given, Much is Required, Jo Buyske, MD</td>
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<tr>
<td>9:30 - 10:00 AM</td>
<td>Ballroom C2-3</td>
<td>SAGES Gerald Marks Lecture: War Surgery in Iraq &amp; Afghanistan:</td>
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<td>One Way to Serve, Cameron Wright, MD</td>
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<tr>
<td>10:00 AM - 4:00 PM</td>
<td>Exhibit Hall C</td>
<td>Exhibits/Posters/Learning Center Open</td>
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<tr>
<td>10:00 - 11:30 AM</td>
<td>Ballroom C1</td>
<td>SS07 – Best of Video II</td>
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<tr>
<td>10:00 - 11:30 AM</td>
<td>Room 214C-D</td>
<td>Session: Lessons Learned from Private Practice – Efficiency and Cost</td>
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<tr>
<td></td>
<td></td>
<td>Savings</td>
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<tr>
<td>10:00 - 11:30 AM</td>
<td>Ballroom C2-3</td>
<td>Panel: Controversies about Hernia Mesh</td>
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<tr>
<td>10:00 AM - 12:30 PM</td>
<td>Room 214A-B</td>
<td>Session: Robotic Surgery for General Surgeons – It’s Coming Your Way!</td>
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<td>11:30 AM - 12:30 PM</td>
<td>Ballroom C2-3</td>
<td>SS08 – Foregut II</td>
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<tr>
<td>11:30 AM - 12:30 PM</td>
<td>Ballroom C1</td>
<td>SS09 – Sleeve Gastrectomy</td>
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<tr>
<td>11:30 AM - 12:30 PM</td>
<td>Room 217C-D</td>
<td>SS10 – Instrumentation / Ergonomics</td>
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<tr>
<td>11:30 AM - 12:30 PM</td>
<td>Room 214C-D</td>
<td>SS11 – Flexible Endoscopy II</td>
</tr>
<tr>
<td>12:30 - 1:30 PM</td>
<td>Exhibit Hall C</td>
<td>Break: Exhibits, Posters, Learning Center –</td>
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<td>Poster Presenters will be Available at their Posters</td>
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<tr>
<td>12:30 - 1:30 PM</td>
<td>Room 217A-B</td>
<td>Fellowship Council Lunch</td>
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<tr>
<td>1:30 - 3:30 PM</td>
<td>Room 214C-D</td>
<td>SS12 – Bariatric</td>
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<tr>
<td>1:30 - 3:30 PM</td>
<td>Ballroom C1</td>
<td>Emerging Technology Session</td>
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<tr>
<td>1:30 - 3:30 PM</td>
<td>Room 214A-B</td>
<td>Session: Advanced Ventral Hernia Repair</td>
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<tr>
<td>1:30 - 3:30 PM</td>
<td>Ballroom C2-3</td>
<td>SAGES/ALACE Joint Symposium:</td>
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<tr>
<td></td>
<td></td>
<td>Integrating New Technologies, Old Tricks &amp; Operative Approaches</td>
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<tr>
<td>2:00 - 5:00 PM</td>
<td>Room 217C-D</td>
<td>Residents/Fellows Scientific Session</td>
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<tr>
<td>2:30 PM</td>
<td>Exhibit Hall C</td>
<td>Coffee Break &amp; Cookies in Exhibit Hall!</td>
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<tr>
<td>3:30 - 5:30 PM</td>
<td>Room 214C-D</td>
<td>SS13 – Hernia</td>
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<tr>
<td>3:30 - 5:30 PM</td>
<td>Room 214A-B</td>
<td>Panel: Difficult Problems in Reasonable Patients – What To Do?</td>
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<tr>
<td>3:30 - 5:30 PM</td>
<td>Ballroom C1</td>
<td>Video Symposium:</td>
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<td>Illustrations of Managing Complications &amp; Reoperations in MIS</td>
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<tr>
<td>3:30 - 5:30 PM</td>
<td>Ballroom C2-3</td>
<td>SAGES/ASCRS Joint Symposium:</td>
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<td></td>
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<td>Laparoscopic Colon Surgery – Why Aren’t More Surgeons Doing This</td>
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<td>Operation?</td>
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<tr>
<td>6:00 - 7:00 PM</td>
<td>Marriott</td>
<td>SAGES Meet the Leadership Reception</td>
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<tr>
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<td>RiverCenter Hotel</td>
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<td>Sazo Restaurant</td>
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<tr>
<td>7:30 - 11:00 PM</td>
<td>Sunset Station</td>
<td>A Grand Ol’ Taste of Texas: SAGES Main Event &amp; International Sing-Off</td>
</tr>
</tbody>
</table>

### Important AV Information

You may now upload your presentation online any time before the meeting and until the night before your session during the meeting. Please load your presentation online (http://sages.presentationman.com/).

**Please Note:** Even if you have submitted your presentation online you must visit the Speaker Prep room no later than 2 hours before your presentation. If you do not, your session moderator may not allow you to present.

### Speaker Prep Hours – Room 216

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
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<tbody>
<tr>
<td>3/29/11</td>
<td>12:00 Noon - 5:00 pm</td>
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<td>3/30/11</td>
<td>5:30 am - 5:00 pm</td>
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<td>3/31/11</td>
<td>5:30 am - 5:00 pm</td>
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<th>Date</th>
<th>Time</th>
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<tbody>
<tr>
<td>4/1/11</td>
<td>5:30 am - 6:00 pm</td>
</tr>
<tr>
<td>4/2/11</td>
<td>5:30 am - 6:00 pm</td>
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</tbody>
</table>
**Scientific Session Concurrent Sessions** (accepted oral & video presentations)

**Description:**
This section of the SAGES Meeting includes panels with invited faculty who will speak on specific topics, and sessions of oral & video presentations of abstracts selected by the SAGES Program Committee.

**What is Included:**
The Scientific Session is included in Registration SuperPass (Option A). Thursday sessions (concurrent only) are also included in Registration Option B. Friday/Saturday sessions and panels are included in Registration Option C. All fees include entrance to all didactic session rooms (not including hands-on course labs or lunches), Final Program, entrance to the Exhibit Hall, Learning Center, Posters, access to the Electronic Meeting Guide online, continental breakfast & breaks, and lunch in the Exhibit Hall on Saturday.

**SS06 Plenary Session I**

**Moderators:** Steven Schwartzberg, MD, Alberto Chousleb, MD

**S032 LAPAROSCOPIC CHOLECYSTECTOMY AFTER A QUARTER OF A CENTURY: WHY DO WE STILL CONVERT?** Balazs I Lengyel, MD, Dan E Azagury, MD, Maria T Panizales, MS, Jill Steinberg, MPH RN, David C Brooks, MD, Stanley W Ashley, MD, Ali Tavakkolizadeh, MD, Department of General Surgery, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, USA; Surgical Planning Laboratory, Brigham and Women’s Hospital, Harvard Medical School, Boston, MA, USA

**S033 PROSPECTIVE RANDOMIZED CONTROLLED TRIAL OF TRADITIONAL FOUR PORT LAPAROSCOPIC CHOLECYSTECTOMY VERSUS SINGLE INCISION LAPAROSCOPIC CHOLECYSTECTOMY** Melissa S Phillips, MD, Jeffrey M Marks, MD, Roberto Tacchino, MD, Kurt Roberts, MD, Raymond Onders, MD, George DeNoto, MD, Paraskas Paraskeva, MA, Homero Rivas, MD, Arsall Islam, MD, Nathaniel Soper, MD, Alexander Rosemurgy, MD, Sajani Shah, MD, University Hospitals Case Medical Center, Cleveland, OH, USA

**V018 LAPAROSCOPIC RESECTION OF GE JUNCTION DUE TO STRICTURE POST HIATAL HERNIA REPAIR WITH CIRCUMFERENTIAL BIOLOGIC MESH.** A Bernshteyn, I Fendrich, S Szomstein, R J Rosenthal, Cleveland Clinic Florida

**S034 CLINICAL RESULTS OF PER-ORAL ENDOSCOPIC MYOTOMY (POEM) FOR 56 CONSECUTIVE CASES OF ESOPHAGEAL ACHALASIA** Haruhiro Inoue, MD PhD, Haruo Ikeda, MD, Hitomi Minami, MD, Michitaka Suzuki, MD, Hitoshi Satodate, MD PhD, Noriko Okada, MD PhD, Hiroaki Itoh, MD PhD, Shin-eki Kudo, MD PhD, Showa University Northern Yokohama Hospital

**S035 LAPAROSCOPIC DOR VERSUS TOUPET FUNDUPLICATION FOLLOWING HELLER MYOTOMY FOR ACHALASIA: RESULTS OF A MULTICENTER, PROSPECTIVE RANDOMIZED-CONTROLLED TRIAL** Arthur Rawlings, MD, Nathaniel J Soper, MD, Brant Oelschlager, MD, Lee Swanstrom, MD, Brent D Matthews, MD, Carlos Pellegrini, MD, Richard A Pierce, MD PhD, Aurora Pryor, MD, Valeria Martin, MD, Margaret M Frisella, RN, Maria Cassera, RN, L Michael Brunt, Departments of Surgery, Washington University School of Medicine-St. Louis, Northwestern University, Chicago, IL, University of Washington, Seattle, WA, The Oregon Clinic, Portland, OR, Duke University, Durham, NC

**V019 SIMULATION EDUCATION: FOR TAPP AND TEP LAPAROSCOPIC INGUINAL HERNIA REPAIR** Y Kurashima, MD PhD, P A Kaneva, MSc, L S Feldman, MD, G M Fried, MD, M C Vassiliou, MD MEd, Steinberg-Bernstein Centre for Minimally Invasive Surgery McGill University

*SAGES acknowledges our Diamond Level Donors for their support of this session: Covidien, Ethicon Endo-Surgery, Inc.*

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**President's Address:**

**Location:** Ballroom C2-3

**9:00 AM - 9:30 AM**

*Scheduled in Registration SuperPass (Option A) or Registration Option C

**SAGES Presidential Address:**

**Location:** Ballroom C2-3

**Those To Whom Much Is Given, Much Is Required**

**Jo Buyske, M.D.**

Associate Executive Director, American Board of Surgery, Philadelphia, PA

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**Pencil us in for next year:**

**March 7 - 10, 2012  •  San Diego, CA**

Earlier than Usual!
Gerald Marks Lecture:
War Surgery in Iraq and Afghanistan: One Way to Serve

Cameron Wright, M.D.
Colonel, Medical Corps, United States Army Reserve

This lecture is named in honor of SAGES founder and visionary, Gerald Marks, MD

Born in Detroit, earning his medical degree at the University of Michigan, and undertaking surgical training at Mass General and the U.K., Cameron Wright has become an acknowledged leader in Thoracic Surgery.

From his first posting as Assistant Professor of Surgery at Indiana University to his current role as Professor of Surgery at Harvard University and Colonel, Medical Corps, United States Army Reserve, Dr. Wright has been an innovator and leader.

His extraordinary leadership in thoracic surgery education has earned him (among many) positions as: Director, Coordinating Committee for Continuing Education in Thoracic Surgery Directors Association; Course Director, American College of Surgeon Thoracic Postgraduate Course; American Board of Thoracic Surgery Examination Committee; American Board of Thoracic Surgery; Director, Credentials Committee, American Board of Thoracic Surgery; Chair, Maintenance of Certification Committee, American Board of Thoracic Surgery; Thoracic Surgery Club, Executive Committee.


Dr. Wright's clinical interests encompass Esophageal Cancer, Tracheal Surgery, Lung Cancer, Mediastinal Tumors, Minimally Invasive Chest Surgery, and Thymoma.

Dr. Wright has authored more than 150 peer reviewed papers, 9 CD's and has lectured virtually all over the world.

Most important, throughout it all he has made the commitment to serve our country by his participation in the U.S. Army Reserve with deployments to Iraq and Afghanistan.

SAGES acknowledges our Diamond and Platinum Level Donors for their support of this lecture:

Diamond: Covidien, Ethicon Endo-Surgery Inc.
Platinum: Karl Storz Endoscopy, Olympus

Exhibits, Posters, Learning Center Open

Concurrent Sessions

V020 SURGERY FOR TYPE II DIABETES MELLITUS: LAPAROSCOPIC ILEAL INTERPOSITION (TYPEI) C Palanivelu, MCH FACS FRCS, P Praveen Raj, MS, P Senthilathan, MS DNB, C Chandramaliteswaran, MS, R Parthasarathi, MS, GEM Hospital

V021 AN INNOVATIVE TECHNIQUE FOR CIRCULAR STAPLER INSERTION AND WOUND PROTECTION DURING GASTROJEJUNOSTOMY Alian Garay, MD, Danny V Martinez, BS, Valerie J Halpin, MD, Legacy Good Samaritan Hospital, Portland, OR

V022 LAPAROSCOPIC SLEEVE GASTRECTOMY AFTER FAILED VERTICAL BANDED GASTROPLASTY Michael J Lee, MD, Daniel J Scott, MD FACS, UT Southwestern Medical Center

V023 LAPAROSCOPIC REVISION OF LONG-LUMB LOOP GASTRIC BYPASS Eugenius J Harvey, MD, Kervin Arroyo, MD, Daniel M Herron, MD, Mount Sinai School of Medicine

V024 GASTRIC BYPASS IN A PATIENT WITH UNSUSPECTED MALROTATION OF THE COLON Rahima Nenshi, MD MSc, John Hagen, MD, Humber River Regional Hospital, University of Toronto

V025 REVISION OF ROUX-EN-Y GASTRIC BYPASS FOR GASTROGASTRIC FISTULA, SUBTOTAL GASTRECTOMY, AND ROUX-EN-Y ESOPHAGEALJUNOSTOMY Kelvin Higa, MD FACS, Saber Ghiassi, MD MPH, Ruby Gatschet, MD, Keith Boone, MD FACS, University of California, San Francisco, Fresno

V026 LAPAROSCOPIC TRANSGASTRIC REVERSAL OF VERTICAL BANDED GASTROPLASTY Hubert D Kim, MD, Kevin M Reavis, MD, Chirag Dholakia, MD, Ninh T Nguyen, MD, University of California, Irvine Medical Center

V027 LAPAROSCOPIC GASTRECTOMY FOR GASTRIC CANCER FOLLOWING OPEN ROUX-EN-Y GASTRIC BYPASS Ramin Roohipour, MD, Subhash Kini, MD FACS, Daniel Herron, MD FACS, Mount Sinai School of Medicine, New York, N.Y.

V028 MANAGEMENT OF LINEAR CUTTING STAPLER COMPLICATIONS DURING LAPAROSCOPIC SLEEVE GASTRECTOMY Koji Park, MD, John N Afthinos, MD, David Lee, MD, Ninan Koshy, MBBS, Julio A Teixeira, MD FACS, St. Luke's-Roosevelt Hospital Center, NY
## Lessons Learned From Private Practice Session: Efficiency and Cost Saving

**Chair:** Joseph B. Petelin, M.D.; Co-Chair: Stephen W. Unger, M.D.  
**Allied Health Personnel encouraged to attend.**

Nearly ½ of the SAGES annual meeting attendees are in private practice. Let's hear from them about tips and tricks to be more efficient, less invasive, and save cost in the operating room and the clinic.

### Objectives:
- Describe 3 essential items that efficient outpatient practice requires
- Identify and evaluate electronic/computer/internet-based tools that extend physician capabilities
- Describe at least 3 techniques or tools that improve operating room performance
- Recognize the importance of correct CPT coding and identify practices that improve collections

### SCHEDULE

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<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Chair/Co-Chair</th>
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<tbody>
<tr>
<td>10:00 AM</td>
<td>Introduction</td>
<td>Joseph B. Petelin, M.D. and Stephen W. Unger, M.D.</td>
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<tr>
<td>10:05 AM</td>
<td>Strategies for Efficiency in the Outpatient Clinic</td>
<td>Stephen W. Unger, M.D.</td>
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<tr>
<td>10:20 AM</td>
<td>EMR/Database/WWW/“Electronic Helpers”</td>
<td>Alex Gandsas, M.D.</td>
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<tr>
<td>10:35 AM</td>
<td>Efficiency in the Operating Room – From Initial Setup Through Closure</td>
<td>Joseph B. Petelin, M.D.</td>
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<tr>
<td>10:50 AM</td>
<td>Coding and Collecting – Show Me the Money – So I Can Pay My Staff and My Overhead</td>
<td>TBD</td>
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<tr>
<td>11:05 AM</td>
<td>Discussion</td>
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### Controversies About Hernia Mesh Panel

**Chair:** Bruce Ramshaw, M.D.  
**Co-Chair:** Michael Franz, M.D.

This session will describe the physiologic basis for the use of mesh for hernia repair and current meshes available. The fallacy of believing there is an ideal mesh, the materials science and mesh comparisons will also be discussed.

### Objectives:
- List available mesh products for hernia repair, including their similarities and differences
- Describe potential interactions between mesh and the body and apply this knowledge to surgical technique
- Apply mesh choices to specific clinical situations

### SCHEDULE

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<tr>
<td>10:00 AM</td>
<td>Introduction</td>
<td>Bruce Ramshaw, M.D. &amp; Michael Franz, M.D.</td>
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<tr>
<td>10:05 AM</td>
<td>Physiologic Basis for Using Mesh</td>
<td>Michael Franz, M.D.</td>
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<td>10:20 AM</td>
<td>Materials Sciences, Explanted Mesh</td>
<td>Sheila Grant, M.D.</td>
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<td>10:35 AM</td>
<td>Mesh Comparisons/Applications Synth</td>
<td>Sharon Bachman, M.D.</td>
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<tr>
<td>10:50 AM</td>
<td>Mesh Comparisons/Applications Biological</td>
<td>B. Todd Heniford, M.D.</td>
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<tr>
<td>11:05 AM</td>
<td>Fallacy of an “Ideal Mesh”</td>
<td>Bruce Ramshaw, M.D.</td>
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<tr>
<td>11:20 AM</td>
<td>Discussion</td>
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To fully comply with ACCME regulations, all SAGES Meeting attendees must have their badge scanned before entering any course or session room in order to receive CME credit for that event.

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- Read interesting articles
- Members can share and collaborate with the SAGES community

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Robotic Surgery for General Surgeons Session: It's Coming Your Way!

Chair: Keith Kim, M.D.  
Co-Chair: Eric Wilson, M.D.

This session will review the current and future robotic technology as well as current clinical applications of robotic surgery in general surgery. Additionally the role of robotic technology in general surgery will be discussed and debated.

Objectives:

At the conclusion of this session, participants will be able to:

- Describe the salient features and advantages of the current robotic platform
- Describe current general surgery applications and outcomes of robotic technology
- Debate the clinical advantages and disadvantages of the robotic platform
- Evaluate the applicability of robotic technology to their current practice

SCHEDULE

10:00 AM Introduction  
Keith Kim, M.D. and Eric Wilson, M.D.

10:05 AM Past, Present, and Future of Robotic Surgery  
Myriam Curet, M.D.

10:20 AM Colorectal Robotic Surgery: Current Applications, Outcomes, and Advantages  
Alessio Pigazzi, M.D.

10:35 AM Bariatric Robotic Surgery: Current Applications, Outcomes, and Advantages  
Michelle Toder, M.D.

10:50 AM There is No Need for Robotics in General Surgery  
Moises Jacobs, M.D.

11:05 AM Panel Debate: Pro vs Con for Role of Robotics in General Surgery  
Myriam Curet, M.D. and Moises Jacobs, M.D.

11:25 AM Robotic Thyroidectomy: Technique and Outcomes  
Woung Young Chung, M.D.

11:40 AM Robotics in Hepato-biliary and Pancreas  
Piero Giulianotti, M.D.

11:55 AM Robotic Gastrectomy: Technique and Outcomes  
Woo Jin Hyung, M.D.

12:10 PM Discussion

11:30 AM - 12:30 PM *Included in Registration SuperPass (Option A) or Registration Option C

Concurrent Sessions

SS08 Foregut II  
Location: Ballroom C2-3

Moderators: Michael Nussbaum, MD, John Hunter, MD

S036 DECREASING MORBIDITY AND MORTALITY IN ONE HUNDRED CONSECUTIVE ESOPHAGECTOMIES  
Kfir Ben-David, MD, George A Sarosi, MD, Juan C Cendan, Drew Howard, MD, Georgios Rossidis, MD, Steven N Hochwald, University of Florida College of Medicine

S037 TECHNICAL AND PERIOPERATIVE OUTCOMES OF MINIMALLY INVASIVE ESOPHAGECTOMY USING PRONE VATS  
Ross F Goldberg, MD, Steven P Bowers, MD FACS, Michael A Parker, MD, John A Stauffer, MD, Horacio J Asbun, MD FACS, C Daniel Smith, MD FACS, Mayo Clinic - Florida

S038 LAPAROSCOPIC GASTRIC ISCHEMIC CONDITIONING PRIOR TO MINIMALLY INVASIVE ESOPHAGECTOMY, THE LOGIC TRIAL  
DARMARAJAH VEERAMOOTOO, MB BS MRCS MD, ANGELA C SHORE, PHD, SHAHJAHAN A WAJED, MA BM BCh MChir FRCS, Department of Upper Gastro-Intestinal Surgery, Royal Devon and Exeter NHS Foundation Trust, Exeter, United Kingdom. Institute of Biomedical and Clinical Sciences, University of Exeter, Exeter, United Kingdom.

S039 THE EFFECTS OF PHENYLEPHRINE AND NOREPINEPHRINE ON TISSUE OXYGENATION IN AN EXPERIMENTAL GASTRIC CONDUIT MODEL AS MEASURED BY OPTICAL FIBER SPECTROSCOPY  
Erin W Gilbert, MD, Vivan V Hou, MD, James P Dolan, MD, Brett C Sheppard, MD, Steven L Jacques, PhD, John G Hunter, MD, Dan Gareau, PhD, Department of Surgery, Oregon Health & Science University, Portland, OR, Department of Anesthesiology, Oregon Health & Science University, Portland, OR, Department of Dermatology &Biomedical Engineering, Oregon Health & Science University, Portland, OR

S040 SURVIVAL COMPARISON OF LAPAROSCOPIC VERSUS OPEN CURATIVE GASTRECTOMY FOR EARLY AND ADVANCED GASTRIC CANCER, A MATCHED COHORT STUDY  
Fabrizio Moisan, MD, Enrique Norero, MD, Milenko Slako, MD, Fernando Crovari, MD, Luis Ibañez, MD, Gustavo Perez, MD, Fernando Pimentel, MD, Sergio Guzmán, MD, Alex Escalona, MD, Nicolás Jarufe, MD, Camilo Boza, MD, Ricardo Funke, MD, Department of Digestive Surgery, Faculty of Medicine, Catholic University of Chile

S041 LAPAROSCOPIC GASTRECTOMY FOR PATIENTS WITH ADVANCED GASTRIC CANCER PRODUCES SIMILAR ONCOLOGIC OUTCOMES TO OPEN RESECTION  
S J MacLellan, MD, H MacKay, MD, L Jacks, MSc AStat, Z Kassam, MD FRCP, T Conrad, MD, I Khalili, MD, J Ringash, MD MSc FRCPC, A Okrainec, MDCM MHPE FACS FRCS, University Health Network, University of Toronto, Toronto, ON, Canada. Princess Margaret Hospital, Toronto, ON, Canada.

2011 Poster Session

Posters will be on display, Thursday, Friday & Saturday. Poster presenters will be available for Q&A on Friday, from 12:30 - 1:30 PM

SAGES acknowledges our Diamond and Platinum Level Donors for their support of the poster session: Covidien, Ethicon Endo-Surgery, Inc., Karl Storz Endoscopy-America, Olympus
SS09  Sleeve Gastrectomy
Moderators: Alfons Pomp, MD, Edward Felix, MD

S042 LAPAROSCOPIC SLEEVE GASTRECTOMY FOR OBESITY: CAN IT BE CONSIDERED A DEFINITIVE PROCEDURE? Edward Chao, MD, Yana Etkin, MD, Lynn Merklinger, NP, Jayne A Lieb, MD, Ajay K Chopra, MD, Jacobi Medical Center, Albert Einstein College of Medicine

S043 MANAGEMENT OPTIONS FOR SYMPTOMATIC STENOSIS FOLLOWING SLEEVE GASTRECTOMY IN THE MORBIDLY OBESE Amit Parikh, DO, Joshua B Alley, MD, Richard M Peterson, MD MPH, Michael C Harnisch, MD, Jason M Pfluke, MD, Donovan N Tapper, MD, Stephen J Fenton, MD, San Antonio Military Medical Center, University of Texas Health Sciences Center at San Antonio

S044 NOTES-INSPIRED SLEEVE GASTRECTOMY Elie CHOUILLARD, MD, Abe Fingerhut, MD FAC, On behalf of the Intercontinental Society of Natural Orifice, Endoscopic, and Laparoscopic Surgery (i-NOELS), Poissy, FRANCE

S045 META-ANALYSIS OF LEAK AFTER LAPAROSCOPIC SLEEVE GASTRECTOMY FOR MORBID OBESITY Alexander Aurora, MD, Leena Khaltian, MD, Alan Saber, MD, University Hospitals Case Medical Center

S046 LAPAROSCOPIC SLEEVE GASTRECTOMY IN PATIENTS WITH BMI 30 - 34.9 MARCOS BERRY, MD, LIONEL URRUTIA, MD, CRISTOBAL GUIXE, MD, RODRIGO VILLAGRAN, MD, HECTOR CONOMAN, MD, PATRICIO LAMOZA, MD, Bariatric Surgical Unit, Clinica Las Condes, Santiago-Chile

S047 ONE-YEAR HUMAN EXPERIENCE WITH A NOVEL ENDOLUMINAL, ENDOSCOPIC GASTRIC BYPASS SLEEVE FOR MORBID OBESITY Bryan J Sandler, MD, Roberto Rumbaut, MD, C. Paul Swain, MD, Gustavo Torres, MD, Luis Morales, MD, Lizzel Gonzalez, MD, Sarah Schultz, MPH, Mark Talamini, MD, Santiago Horgan, MD, Division of Minimally Invasive Surgery, Department of Surgery, UC San Diego, San Diego, CA, USA; Hospital de Tec de Monterrey, Monterrey, Mexico; Imperial College of London, London, England

SS10 Instrumentation / Ergonomics
Moderators: Adrian Park, MD, Albert Ferreres, MD

S050 TRANSVAGINAL CHOLECYSTECTOMY VERSUS MINILAPAROSCOPIC CHOLECYSTECTOMY Angel Cuadrado-Garcia, MD, PhD, José F Noguera, MD PhD, Rafael Morales, MD, Carlos Dolz, MD PhD, Jose M Olea, MD, Jose C Vicens, MD PhD, Luis Lozano, MD, Hospital Son Llatzer, Palma de Mallorca, Spain

S051 SINGLE PORT LAPAROSCOPIC CHOLECYSTECTOMY WITH TRANSENTERIX SPIDER: EARLY SUCCESS IN HUMANS. Chan W Park, MD, Hector R Herrera Cabral, MD, Roberto J Manson, MD, Aurora D Pryor, MD, Duke Endosurgery, Department of Surgery, Duke University

S052 MINIATURE SURGICAL ROBOT FOR LAPAROENDOSCOPIC SINGLE-INCISION COLECTOMY Tyler D Wortman, BS, Oleg Dolghi, MD, Amy C Lehman, MS, Ryan L McCormick, Shane M Farritor, PhD, Dmitry Olevnikov, MD, University of Nebraska-Lincoln, University of Nebraska Medical Center

S053 RE-EVALUATION OF NEEDLESCOPE SURGERY Nobumi Tagaya, PhD, Keichi Kubota, PhD, Second Department of Surgery, Dokkyo Medical University, Tochigi, Japan

SS11 Flexible Endoscopy II
Moderators: Frederick Greene, MD, George Berci, MD

S054 TRANSVAGINAL CHOLECYSTECTOMY VERSUS MINILAPAROSCOPIC CHOLECYSTECTOMY Elie CHOUILLARD, MD, Abe Fingerhut, MD, Philadelphia, PA; Indian Institute of Technology, Roorkee, India; World Laparoscopic Institute, Mumbai, India

S055 QUANTIFYING MENTAL WORKLOAD OF SURGEONS PERFORMING NOTES PROCEDURES Bin Zheng, MD PhD, Erwin Rieder, MD, Maria A Cassera, BS, Danny V Martinez, BS, Lee L Svanstrom, MD, Department of Surgery, University of British Columbia, Canada; Minimally Invasive Surgery Program, Legacy Health, Portland, Oregon

S056 TRANSENGAL OR TRANSABDOMINAL SPECIMEN EXTRACTION AFTER LAPAROSCOPIC LEFT COLECTOMY: CLINICAL PROSPECTIVE EVALUATION OF PERITONEAL CONTAMINATION RISKS Joel Leroy, MD FRCS, Federico Costantino, MD, Michele Diana, MD, Jacopo D’Agostino, MD, Didier Mutter, MD PhD, James Wu, MD, Jacques Marescaux, MD FRCS FACS, IRCAD-EITS, Department of Digestive and Endocrine Surgery, University Hospital of Strasbourg, France

S057 MAGNETIC SCOPE GUIDE DURING ENDOSECOPIC EXAMINATIONS OF COLON Miroslaw Szura, MD PhD, Krzysztof Bucki, MD, Andrzej Matyja, MD PhD, MEDICINA Specialist Diagnostic & Therapeutic Centre

S058 A PURE NATURAL ORIFICE TRANSRECTAL APPROACH FOR ONCOLOGIC RESECTION OF THE RECTO-SIGMOID: AN EXPERIMENTAL RANDOMIZED COMPARISON TO CONVENTIONAL LAPAROSCOPY Erwin Rieder, MD, Georg O Spauin, MD, Yashodhan Skhajanchee, MD, Danny V Martinez, BS, Brittany N Arnold, BS, Lee L Svanstrom, MD, Mark H Whiteford, MD, MIS Program, Legacy Health, Portland, OR

S059 LAPAROSCOPIC VERSUS NOTES RECTOSIGMOID RESECTION USING TRANSENGAL ENDOSECOPIC MICROSURGERY (TEM) IN A SWINE SURVIVAL MODEL Patricia Sylla, MD, Min-Chan Kim, MD, Abdulmetin Dursun, MD, Liliana Bordeianou, MD MPH, Ifode Ajari, MD, Sevdenur Cizginer, MD, Brian Turner, MD, Denise W Gee, MD, Mari Mino-Kenudson, MD, William R Brugge, MD, David W Rattner, MD, Massachusetts General Hospital

12:30 - 1:30 BREAK: Exhibits, Posters, Learning Center
Poster Presenters available at their posters
Fellowship Council Lunch
Chair: Bruce Schirmer, M.D.
Co-Chair: Maurice Arregui, M.D.

The program will enable interested surgeons, current and prospective fellows, and fellowship council members to become familiar with major changes in the scope and services of the Fellowship Council since 2009. The Fellowship Council’s relationship to the Foundation for Surgical Fellowships, as well as the role of non-ACGME fellowships in the fields of colorectal and thoracic surgery will be discussed.

Objectives:
At the conclusion of this session, participants will be able to:
• Recognize the role of the Foundation for Surgical Fellowships in funding for postgraduate medical education for non-ACGME surgical fellowships. They will relate their current situation to the effects the Foundation will have on their training program or contemplated training program.
• Determine if their career performance would be enhanced by a non-ACGME fellowship
• Define more completely the economic costs of fellowship training and mechanisms of meeting such costs.

SCHEDULE
12:30 PM  Introduction
12:35 PM  The Foundation for Surgical Fellowships: Where Do We Stand?
12:50 PM  Non-ACGME Fellowships in Colorectal Surgery
1:05 PM  Non-ACGME Fellowship in Thoracic Surgery
1:20 PM  Discussion

SAGES acknowledges an educational grant in support of this activity from Ethicon Endo-Surgery, Inc.
Emerging Technology Session

Chair: Daniel Herron, M.D.; Co-Chair: Ronald Clements, M.D.

For the 7th year, SAGES, as part of the SAGES Technology Initiative, will present the Emerging Technology Session. Surgeons, physicians, scientists from academic centers as well as industry are invited to submit abstracts for consideration. Submissions that reflect “late breaking”, “cutting-edge” or novel information are greatly encouraged. Submission of preliminary results for new technologies is encouraged as well.

SAGES does not offer CME for this session.

SAGES acknowledges our Gold Level Donor for their support of this session: Stryker Endoscopy

ET001 A NEW MAGNETIC CAMERA-ROBOT ENABLING A MULTI-INSTRUMENT PROCEDURE IN SINGLE INCISION LAPAROSCOPIC SURGERY: PRELIMINARY EXPERIENCE

Giancarlo Basili (1), MD, Pietro Valdastri (2), PhD MScEE, Dario Pietrasanta (1), MD, Irene Mosca (1), MD, Massimiliano Simi (2), MScBE, Arianna Menciassi (2), Prof, Paolo Dario (2), Prof, Orlando Goletti (1), Prof, General Surgery Unit, Ponzedera Hospital, Health Unit S Pisa (1) - CRIM Lab, Research Center of Industrial BioEngineering, Scuola Superiore Sant’Anna, Pisa (2), ITALY

ET002 ENDOSCOPIC INFRARED COAGULATION: WIDE RANK OF NOVEL AND PRACTICAL UTILITY RATING FROM INTERNAL HEMORRHOIDS TO NOTES

Elisabeth C McLemore, MD, Sonia Ramamoorthy, MD, Rudy Rai, MD, Junaid Siddiqui, MD, P Patrick Basu, MD, University of California, San Diego

ET003 LASER GUIDED LAPAROSCOPIC VENTRAL HERNIARRHAPHY

Danny A Sherwinter, MD, Matthew Dixon, MD, Maimonides Medical Center Department of Minimally Invasive Surgery

ET004 RECONSTRUCTION OF HUMAN ANATOMY USING 3-DIMENSIONAL PRINTING: AORTA AND LIVER MODELS

Rahul Gupta, MBBS MS DNB, Robert A Andrews, MD, Theodore Korelitz, Crispin Weinberg, PhD, Kung Justin, MD, Scott Johnson, MD, Daniel B Jones, MD MS FACS, Beth Israel Deaconess Medical Center

ET005 NEW DEVICE FOR FLEXIBLE LAPAROSCOPY WITH STRENGTH AND STABILITY: SPIDER® VERTEBRAL ENDOMECHANICAL SYSTEM

Juan-Carlos Verdeja, MD, South Miami Hospital

ET006 ENDOSCOPIC SUBMUCOSAL DISSECTION OF Gastric Lesion BY USING A MASTER AND SLAVE TRANSLUMINAL ENDOSCOPIC ROBOT (MASTER): A SURVIVAL STUDY.

Davide Lomanto, MD PhD FAMS Surg, Soo Jay Phee, PhD, Khek YU-HO, MD, Dep.of Surgery and Dept. Of Medicine, Y L L School of Medicine, National University of Singapore; School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore

ET007 LETO MEDICAL’s™ CONTINENT OSTOMY SYSTEM – A PRECLINICAL UPDATE OF A NOVEL ELECTRICAL STIMULATION DEVICE TO RESTORE CONTINENCE CONTROL TO INDIVIDUALS WITH COLOSTOMY

Paolo Aribitabile, MD, Christoph A Maurer, Prof, Department of Surgery, Kantonsspitai Liestal, CH-4410 Liestal, Switzerland

ET008 INTRAOPERATIVE REAL-TIME ULTRASOUND-ELASTOGRAPHY OF THE PANCREAS: A METHOD FOR “VISUAL PALPATION”

Paolo Abitabile, MD, Christoph A Maurer, Prof, Department of Surgery, Kantonsspitai Liestal, CH-4410 Liestal, Switzerland

ET009 A NOVEL SNAKE ROBOT FOR NOTES

Michael M Awad, MD PhD, Shyam Thakkar, MD, Howie Choset, PhD, Washington University in St. Louis, Drexel University, Carnegie Mellon University

ET010 A NOVEL ENDOSCOPIC ESOPHAGEAL RECONSTRUCTION TECHNIQUE

Silvana Perretta, MD, James Wall, MD, Bernard Dallamaghe, MD, Jacques Marescaux, MD, FRCs FACS, IRCAD Department of Digestive and Endocrine Surgery, University of Strasbourg

ET011 INTRAOPERATIVE DISTENSIBILITY AS MEASURED USING A NOVEL FUNCTIONAL LUMINAL IMAGING PROBE: ENDOFLIP

Andrei Iliczyszyn, MBBS BScHons MRCSEng, Abrie Botha, MD FRCS, Department of Upper GI Surgery, St Thomas’ Hospital, London, UK

ET012 TRANSABDOMINAL, TRANSCOLONIC POLYPECTOMIES IN A PORCINE MODEL: AVOIDING UNNECESSARY BOWEL RESECTIONS WITH THE USE OF THE MINILAP DEVICE

Donald M Davis, MD, James JL Mateka, Jorge E Marcet, MD, University of South Florida

ET013 A NOVEL ENDOSCOPIC SURGICAL DEVICE FOR REAL-TIME MEASUREMENT OF HERNIA DEFECTS AND OTHER ANATOMIC GEOMETRIES

Gyusung Lee, PhD, Dmitry Nepomnayshy, MD, Anton Galitsky, MD, Desmon Birkett, MD, Lahey Clinic

ET014 NOVEL TECHNIQUE FOR SIGNIFICANT COST REDUCTION IN LAPAROSCOPIC INGUINAL HERNIA REPAIR

Dmitry Nepomnayshy, MD, Anton Galitsky, MD, Desmon Birkett, MD, Lahey Clinic

ET015 USE OF A NOVEL ENDOSCOPIC SUTURING DEVICE TO OVERSEW A LARGE MARGINAL ULCERATION

Pichamol Jirapinyo, Christopher C Thompson, MD, Brigham and Women’s Hospital, Boston, MA, USA
Dynamic Scheduler: This year, the on line meeting guide will include a Dynamic Schedule Feature, allowing attendees to select sessions of interest and import them into their calendar systems.

Second Chance Sessions: Too busy to attend an interesting session? SAGES will help accommodate your busy meeting schedule by posting select sessions on line within 4 hours of the session ending. To view these videos, please follow the “Second Chance Sessions” tab from on line meeting guide menu.

SELECTED SESSIONS INCLUDE:

**Wednesday, March 30, 2011**
- 12:30 PM – 2:30 PM: Unexpected Intraoperative Findings Video Session

**Thursday, March 31, 2011**
- 7:00 AM – 8:30 AM: Military Session
- 8:30 AM – 10:00 AM: Safety for Surgeons Panel: Is Your Profession Causing You Physical Harm?
- 10:30 AM – 12:00 PM: SAGES/JSES What’s New in Lower GI Surgery Symposium
- 3:30 PM – 5:30 PM: Inguinal Hernia Debates
- 3:30 PM – 5:30 PM: Managing Bariatric Surgery Emergencies for the Non Bariatric Surgeon

**Friday, April 1, 2011**
- 9:00 AM – 9:30 AM: SAGES Presidential Address: Those To Whom Much Is Given, Much Is Required
- 9:30 AM – 10:00 AM: Gerald Marks Lecture: War surgery in Iraq and Afghanistan: One Way to Serve
- 10:00 AM – 11:30 AM: Controversies About Hernia Mesh Panel
- 1:30 PM – 3:30 PM: SAGES/ALACE Symposium: Integrating New Technologies, Old Tricks, and Operative Approaches
- 3:30 PM – 5:30 PM: SAGES/ASCRS Laparoscopic Colon Surgery Symposium: Why Aren’t More Surgeons Doing This Operation?

SMS Updates: Attendees that OPT IN for this feature during pre-meeting registration will receive important meeting updates via text message. This mechanism will also be utilized to communicate with confirmed speakers and faculty.

2011 Meeting Twitter Feed: Attendees can optimize their meeting experience by staying in tune with Real Time meeting trends. Participating SAGES Leadership will be tweeting meeting updates regarding ongoing presentations, critical debates, and other important meeting information. Follow Us Now @sages2011 or link to us on site via the “Meeting Twitter” tab on the On Line Meeting Guide.

Audience Response Via SMS: Selected Sessions will accept audience questions via text. To submit questions attendees can simply text their questions to (909) 833-1302 (Information will also be available in the session rooms).

SELECTED SESSIONS INCLUDE:

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To continue our efforts to reduce waste and support the environment SAGES has revised and upgraded the Electronic Meeting Guide. This year, the guide will be available only at [www.sages.org/2011/resource/](http://www.sages.org/2011/resource/).

The printed Final Program will include the regular schedule and course/panel outlines, as well as abstracts for Podium Presentations and the Posters of Distinction as well as a full listing of regular posters. However, all Abstracts, Digital Posters, and Postgraduate Course Syllabi will be available via the on-line meeting guide. The meeting guide will be accessible and supported by most mobile devices.
Advanced Ventral Hernia Repair Session
Chair: B. Todd Heniford, M.D.
Co-Chair: Morris E. Franklin, Jr., M.D.

This session is for surgeons who currently perform laparoscopic ventral hernia repair and want to learn about challenging cases and restoring abdominal wall physiology. Expert presentations and panel discussions will be used to present the data on laparoscopic closure of abdominal wall defects prior to mesh placement, use of component separation for improving abdominal wall function, and choice of mesh. Difficult case management will also be discussed including suprapubic, subxyphoid, flank, and parastomal hernias.

Objectives:
At the conclusion of this session, participants will be able to:
• Discuss the use of defect closure and component separation to restore abdominal wall physiology
• Compare minimally invasive methods of abdominal wall closure
• Evaluate repair techniques for managing difficult abdominal wall hernias
• Compare characteristics of commonly used ventral hernia meshes

SCHEDULE
1:30 PM  Introduction  B. Todd Heniford, M.D. & Morris E. Franklin, Jr., M.D.
1:35 PM  Laparoscopic Ventral Hernia Repair with Defect Closure  Morris E. Franklin, Jr., M.D.
1:45 PM  Ventral Hernia Repair: The Physiologic Advantages of Restoring Abdominal Wall Continuity  Guy Voeller, M.D.
1:55 PM  Hiatal Hernia Repair and Mesh: Who, How and What Have We Learned?  Nathaniel Soper, M.D.
2:05 PM  Discussion
2:25 PM  Parastomal Hernia Repair 101  Kristi Harold, M.D.
2:35 PM  Components Separation – Laparoscopic and Open  Bruce Ramshaw, M.D.
2:45 PM  Tips and Tricks to Open and Laparoscopic Repair of Suprapubic and Subxiphoid Hernias  Alfredo Carbonell, M.D.
2:55 PM  Maximizing Reimbursement  Karl Boyd, M.D.
3:05 PM  Discussion

SAGES acknowledges an educational grant in support of this session from Gore & Associates

1:30 PM - 3:30 PM  *included in Registration SuperPass (Option A) or Registration Option C

SAGES/ALACE Symposium: Integrating New Technologies, Old Tricks, and Operative Approaches
Chair: Natan Zundel, M.D.
Co-Chair: Jeffrey L. Ponsky, M.D.

The session will present new approaches to common general surgical problems focusing on new and evolving minimally invasive technologies.

Objectives:
At the conclusion of this session, participants will be able to:
• Inform on the current status of single port laparoscopic approaches to intra-abdominal disease
• Update on recent development in natural orifice surgery
• Present a concise approach to bile duct stones
• Understand new technologies for endoscopically approaching common diseases of the foregut and peri-pancreatic collections

SCHEDULE
1:30 PM  Introduction  Natan Zundel, M.D. & Jeffrey L. Ponsky, M.D.
1:35 PM  Single Port/Single Incision – What’s New?  Paul Curcillo, M.D.
1:45 PM  NOTES – What’s New?  Almino Ramos, M.D.
1:55 PM  Common Bile Duct Exploration Options When You Don’t Have Everything  Samuel Shuchleib, M.D.
2:05 PM  Trans-Esophageal Surgery - Heller  Silvana Perretta, M.D.
2:15 PM  Discussion
2:30 PM  Advanced Endolumenal Therapies – Ablation of Barrett’s, Transoral Fundoplication, and Bariatric Procedures  Brian Dunkin, M.D.
2:40 PM  Magnetic Surgery  Homero Rivas, M.D.
2:50 PM  Endoscopic Management of Complications – Stent Technique  Jose Martinez, M.D.
3:00 PM  Pancreatic Collections  Claudio Navarrete, M.D.
3:10 PM  Discussion
Residents and Fellows Scientific Session

Chair: James G. Bittner, M.D. & Lora Melman, M.D.

In this session, residents and fellows will present their clinical and basic science research to a panel of prominent faculty who are respected in the fields of minimally invasive / bariatric surgery, flexible gastrointestinal endoscopy, and surgical education. After each presentation, panelists will discuss study content and originality, design and methodology, interpretation of results, and overall presentation skills. An award for the best clinical and best basic science presentation will be given at the conclusion of the session.

Objectives:
At the conclusion of this session, participants will be able to:
- Identify challenges and pitfalls in research design, methodology, and critical review of results
- Discuss these challenges and pitfalls in order to improve future study design
- Recognize optimum communication skills in terms of a 10 minute presentation
- Acquire an appreciation for the depth and breadth of research conducted by surgical residents and fellows

SCHEDULE
2:00 PM  Introduction
2:05 PM  Resident/Fellow presentations
5:00 PM  Adjourn

Expert Panelists:
David B. Earle, M.D., Gerald Fried, M.D., Leena Khaitan, M.D., Brent Matthews, M.D., Jeffrey Peters, M.D.

S111 THE NATURAL HISTORY OF ANATOMIC FAILURE AFTER LAPAROSCOPIC PARAESOPHAGEAL HERNIA REPAIR Nathaniel Stoikes, MD, Mary Quasebarth, RN, Brent Matthews, MD, Margaret Frisella, RN, L. Michael Brunt, MD, Section of Minimally Invasive Surgery, Washington University School of Medicine, St. Louis, MO

S112 PREVIOUS HIATAL MESH IS ASSOCIATED WITH SIGNIFICANT MORBIDITY AFTER LAPAROSCOPIC REVISIONAL PARAESOPHAGEAL HERNIA REPAIR (PEHR) Vladan N Obradovic, MD, Horatiu C Dancea, MD, Aamir Akmal, MD, Wai M Yeung, MD, Mohanbubu Alaparthi, MD, Jon D Gabrielsen, MD, Anthony T Petrick, MD, Geisinger Medical Center - Danville, PA

S113 TRANSESOPHAGEAL ENDOSCOPIC MYOTOMY (TEEM) FOR ACHALASIA – RECOGNIZING POTENTIAL PITFALLS BEFORE CLINICAL APPLICATION Mahmoud Abu Gazala, MD, Abed Khalaila, MD, Noam Shussman, MD, Samir Abu Gazala, MD, Ram Elazany, MD, Oleg Ponomernco, MD, Gideon Zamir, MD, Avraham I Rivkind, MD, M FACS, Yoav Mintz, MD, Hadassah Ein Kerem Medical Center

S114 COMPARISON OF TRANSRECTAL NOTES® APPROACHES IN A CADAVERIC APPENDECTOMY MODEL: ANTERIOR IS BETTER Byron F Santos, MD, Eric S Hungness, MD, Nathaniel J Soper, MD, Anne-Marie Boller, MD, Northwestern University Department of Surgery, Chicago, IL

S115 ENDOSCOPIC VS. SURGICAL AMPULLECTOMY: AN ALGORITHM TO TREAT DISEASE OF THE AMPULLA OF VATER. Eugene P Ceppa, MD, Rebecca A Burbridge, MD, Kristy L Rialon, MD, Philip A Omotosho, MD, Dawn Emick, MD MPH, Paul S Jowell, MD, M S Branch, MD, Theodore N Pappas, MD, Duke University Medical Center

S116 INCIDENCE OF GASTROJEJUNOSTOMY STRICATURE AFTER LAPAROSCOPIC ROUX-EN-Y GASTRIC BYPASS USING AN AUTOLOGOUS FIBRIN SEALANT Anna Ibele, MD, Frank Bendewald, MD, Scott Mims, MD, Samer Mattar, MD, Daniel McKenna, MD, Indiana University School of Medicine

S117 SURGICAL TECHNIQUE INFLUENCES PERFUSION OF THE GASTRIC CONDUIT USED FOR A MINIMALLY INVASIVE ESOPHAGECTOMY. DARMARAJAH VEERAMOOTOOG, MB BS MBRC, MD, ANGELA C SHORE, PhD, SHAHJIEHAN A WAJED, MA MBBC MChir FRCS, Department of Upper Gastro-Intestinal Surgery, Royal Devon and Exeter NHS Foundation Trust, Exeter, United Kingdom. Institute of Biomedical and Clinical Sciences, University of Exeter, Exeter, United Kingdom.

S118 IS SINGLE-INCISION LAPAROSCOPIC RIGHT COLECTOMY FEASIBLE AND SAFE AT A VETERANS AFFAIRS HOSPITAL? A COMPARATIVE STUDY WITH STANDARD LAPAROSCOPIC RIGHT COLECTOMY AT THE ROUDEBOUSH VA HOSPITAL IN INDIANAPOLIS, INDIANA. Andrea L Jester, MD, Michael J Guzman, MD, Joshua A Waters, MD, Bruce Robb, MD, Don L Selzer, MD, Virgilio V George, MD, Department of Surgery, Indiana University School of Medicine

S119 NEW DOG, NEW TRICKS: TRENDS IN LAPAROSCOPIC SIMULATOR PERFORMANCE FOR INCOMING SURGERY RESIDENTS Nicolota O Kolozsvary, MD, Pepa Kaneva, MSc, Melina C Vassiliou, MD, Gerald M Fried, MD, Liane S Feldman, MD, Steinberg-Bernstein Centre for Minimally Invasive Surgery and Innovation, McGill University, Montreal, QC, Canada

S120 GRADUATED OPERATIVE TRAINING OF FELLOWS CAN BE SAFELY ACCOMPLISHED IN A MINIMALLY INVASIVE SURGICAL FELLOWSHIP Paul N Montero, MD, Neal Agee, MD, Kent Kercher, MD, William Hope, MD, Amy E Lincourt, PhD, Dimitrios Stefanidis, MD PhD, B Todd Heniford, MD, Carolinas Laparoscopic and Advanced Surgery Program, Carolinas Medical Center

S121 ROUTINE PELVIC DRAINAGE REDUCES PELVIC ABSCESS FORMATION AFTER LAPAROSCOPIC APPENDECTOMY FOR GANGRENOUS OR PERFORATED APPENDICITIS Andrea Pakula, MD MPH, Amber Jones, MSIV, Ray Chung, MD FACS, Kern Medical Center
Concurrent Sessions

SS13 Hernia
Moderators: David Edelman, Robert Fanelli, MD

**S072 OUTCOMES OF VENTRAL HERNIA REPAIR IN THE NON OBESE AND THE OBESE**
Mohamed Dahman, MD, Katherine Grav, MD, Anna Dietrich-Covington, NP, Bruce Schirmer, MD, Peter Hallowell, MD, Department of Surgery, University of Virginia Health System, PO Box 80079, Charlottesville, VA 22908, USA

**S073 RISK FACTORS FOR INCISIONAL HERNIA AFTER LAPAROSCOPIC COLON RESECTION: MIDLINE VERSUS TRANSVERSE EXTRACTION SITE**
Lawrence Lee, MD, Salman Al-Sabah, MD, Pepe Kamyshchu, MSc, Sender Liberman, MD, Patrick Charlebois, MD, Barry Stein, MD, Gerald Fried, MD, Liane Feldman, MD, McGill University

**S074 PILOT STUDY OF OBJECTIVE MEASUREMENT OF ABDOMINAL WALL FUNCTION IN VENTRAL INCISIONAL HERNIA PATIENTS**
Michael Parker, MD, Ross F Goldberg, MD, Maryane M Dinkins, PT, Horacio J Asbun, MD, C Daniel Smith, MD, Steven P Bowers, MD, Mayo Clinic Florida

**S075 LAPAROSCOPIC VENTRAL HERNIA REPAIR – DOES PRIMARY REPAIR IN ADDITION TO PLACEMENT OF MESH DECREASE RECURRENT?**
Ambar Banerjee, MD, VIMAL K NARULA, MD, DEAN J MIKAMI, MD, Center for Minimally Invasive Surgery, Division of Gastrointestinal Surgery, The Ohio State University

**S076 PERFORMING CLINICAL STUDIES INVOLVING MESH DEVICES: WHAT EVERY INVESTIGATOR SHOULD KNOW ABOUT THE FDA INVESTIGATIONAL DEVICE EXEMPTION (IDE) PROCESS**
Binita S Ashar, MD MBA, Jiyong Dang, PhD, David Krause, PhD, Markham Luke, MD PhD, U.S. Food and Drug Administration

**S077 MESH FIXATION COMPARED TO NON-FIXATION IN TOTAL EXTRAPERITONEAL INGUINAL HERNIA REPAIR: A RANDOMIZED CONTROLLED TRIAL IN A RURAL HOSPITAL SETTING**
Pankaj Garg, MMBS MS, Srijith Naar, MMBS MS, Geetha R Menon, PhD, Jai D Thakur, MBBS, Mohamed Ismail, MMBS MS. 1.Fortis Super Specialty Hospital, Mohali, India. 2.Moulan Hospital, Periantalmannala, Kerala, India 3. Indian Council of Medical Research, New Delhi, India 4. University of Arkansas for Medical Sciences, Little Rock, Arkansas, USA

**S078 FIXATION OF POLYPROPYLENE MESH ON THE RABBIT ABDOMINAL WALL USING POLY L-LACTIC ACID (PLLA) NANOSHEET**
Keiichi FUJINO, MD PhD, Manabu KINOSHITA, MD PhD, Hidekazu YANO, MD, Akhiro SAITO, PhD, Toshinori FUJIE, PhD, Kahoko NISHIKAWA, PhD, Keiichi IWAYA, MD PhD, Shinji TAKEOKA, PhD, Daizoh SAITO, MD PhD, Yuji TANAKA, MD PhD, Department of General Medicine, National Defense Medical College

**S079 META-ANALYSIS OF STUDIES LOOKING INTO STAPLE VERSUS FIBRIN GLUE MESH FIXATION IN LAPAROSCOPIC TOTAL EXTRA PERITONEAL REPAIR OF INGUINAL HERNIA**
Amit Kaul, MD, Susan Hutfless, PhD, Senan A Hamed, MD, Kevin Tymitz, MD, Hamilton Le, MD, Hien Nguyen, MD, Michael Maroohn, MD, Johns Hopkins University School of Medicine

**S080 LAPAROSCOPIC FIXATION OF BIOLOGIC MESH AT THE HIATUS WITH FIBRIN OR POLYETHYLENE GLYCOL (PEG) SEALANT IN A PORCINE MODEL**
Eric D Jenkins, MD, Sopon LerdSirisopon, MD, Kevin P Costello, Lora Melman, MD, Margaret M Frisella, RN, Brent D Matthews, MD, Corey R Deeken, PhD. Dept. of Surgery, Section of Minimally Invasive Surgery, Washington University School of Medicine (St. Louis, Missouri)

**S081 MESH FIXATION WITH A BARBED ANCHOR SUTURE RESULTS IN SIGNIFICANTLY LESS STRANGULATION OF THE ABDOMINAL WALL**
Calvin Lyons, MD, Rohan Joseph, MD, Nilson Salas, MD, Patrick R Reardon, MD, Barbara L Bass, MD, Brian J Dunkin, MD, The Methodist Hospital

**S082 FELLOWSHIP TRAINING ELIMINATES THE LEARNING CURVE FOR LAPAROSCOPIC INGUINAL HERNIA REPAIR**
Tiffany C Cox, MD, Jonathan P Pearl, MD FACS, Dionne Parreno, MD, Robert Moore, BS, E. Matthew Ritter, MD FACS, National Capital Consortium Bethesda, Maryland

**S083 THE COMING OF AGE OF COMPLEX LAPAROSCOPY IN A COMMUNITY TEACHING HOSPITAL: PRACTICE PATTERNS LEARNED FROM A LAPAROSCOPIC VENTRAL HERNIA REPAIR MODEL.**
Ashwin A Kurian, MD, Siddhah Gallagher, MD, Robert Josloff, MD, Abington Memorial Hospital

Difficult Problems in Reasonable Patients Panel: What to Do?

Chair: W. Scott Melvin, M.D.; Co-Chair: Thadeus L. Trus, M.D.

This session focuses on postoperative problems that are difficult to manage even in cooperative patients. Problems such as groin pain/sports hernia, suture fixation site pain after VH, dysphagia/chest pain after Nissen, and RUQ pain after lap cholecystectomy will be explored.

Objectives:

At the conclusion of this session, participants will be able to:

- Describe appropriate diagnostic tests and syndromes associated with post operative inguinal hernia repair pain
- Understand the physiology, workup and management of swallowing disorders following anti-reflux surgery
- Describe the evaluation and management of post-operative abdominal wall pain in patients following ventral hernia repair
- Understand the appropriate workup and treatment of complications following cholecystectomy

**SCHEDULE**

3:30 PM  Introduction  W. Scott Melvin, M.D. & Thadeus L. Trus, M.D.
3:35 PM  Groin Pain Following Inguinal Hernia Repair  Jeffrey Hazey, M.D.
3:50 PM  Dysphagia Following Nissen Fundoplication  Peter Crookes, M.D.
4:05 PM  Abdominal Wall Pain, Following Ventral Hernia  Matthew Goldblatt, M.D.
4:20 PM  Chronic Drainage From Wound with Mesh in Place  Bruce Schirmer, M.D.
4:35 PM  Recurrent RUQ Pain and Abnormal LFTs Following Laparoscopic Cholecystectomy  Diego Camacho, M.D.
4:50 PM  Discussion
Video Symposium: Illustrations of Managing Complications and Re-Operations in MIS

Chair: Mark A. Talamini, M.D.  
Co-Chair: Michael S. Nussbaum, M.D.  
Location: Ballroom C1  **Allied Health Personnel encouraged to attend.

A video session on the management or avoidance of common and unusual complications in MIS. Reoperative MIS will also be emphasized.

Objectives:
At the conclusion of this session, participants will be able to:
• Familiarize attendees with potential operative pitfalls in minimally invasive surgery.
• Provide attendees with a common lexicon to describe and categorize intra-operative complications.
• Demonstrate operative strategies to avoid complications in minimally invasive operations.
• Provide attendees with a “toolbox” of potential solutions to difficult problems and complications in minimally invasive surgery.
• Provide attendees with strategies for avoiding complications in re-operative minimally invasive surgery.

Schedule:

3:30 PM Introduction  
Mark A. Talamini, M.D. & Michael S. Nussbaum, M.D.

3:35 PM Re-Do Anti-Refux Surgery – Oh, The Troubles That Can Come!!  
Santiago Horgan, M.D.

3:42 PM Re-Operation for Failed Heller Myotomy  
William Richards, M.D.

3:49 PM Thoracoscopic Management of Postoperative Chylothorax  
Joseph Friedberg, M.D.

3:56 PM Re-Defining and Attacking the Difficult Abdomen – Laparoscopic Lysis of Adhesions  
Raymond Onders, M.D.

4:03 PM Discussion

4:15 PM Laparoscopic Bowel Repair – Help, There’s a Hole in the Bowel!  
Daniel Herron, M.D.

4:22 PM Laparoscopic Control of Hemorrhage – Logical Steps, When to Convert  
Ziad Awad, M.D.

4:29 PM Fear During the Routine Lap Chole – The Bile Duct Might Be/Is Injured  
Michael Marohn, M.D.

4:36 PM Re-Operations on Lap Bands – Why and When?  
Kfir Ben David, M.D.

4:43 PM Discussion

4:55 PM Re-Operations After RYGB – When and When?  
Ronald Clements, M.D.

5:02 PM Laparoscopic Groin Hernia – I’m Confused by What I See – How to Sort Out the Anatomy  
Guy Voeller, M.D.

5:09 PM Laparoscopic Groin Hernia – Re-Operation for Mesh Problems  
Robert Fitzgibbons, M.D.

5:16 PM Laparoscopic Ventral/Incisional Hernia – Treating Early Recurrence  
B. Todd Heniford, M.D.

5:23 PM Discussion

A Gentle Reminder About Safety/Security:
We have taken every precaution to assure the safety and security of our guests and their possessions. However, we urge you to be aware and take simple steps to guard your possessions.

• Do not leave your purse or briefcase unattended.
• Do not leave your laptop, phone or other electronic devices on the floor or out of your sight in a darkened room
• Be aware of your surroundings, in the Convention Center, in and around the RiverWalk Area and in San Antonio.

Have a safe & secure meeting!
SAGES/ASCRS Laparoscopic Colon Surgery Symposium: Why Aren’t More Surgeons Doing This Operation?

Chair: Tonia M. Young-Fadok, M.D. 
Co-Chair: John H. Marks, M.D.

Surgeons who perform laparoscopic colorectal operations are supported by evidence that patient outcomes are improved. Yet fewer than 10% of colorectal procedures are performed laparoscopically in the United States.

We will examine and discuss the evidence that supports better patient outcomes, and be surprised by rates of adoption of this technique in the US and around the world. We will isolate the obstacles to performing these procedures and suggest and support means of hurdling these barriers.

Objectives:
At the conclusion of this session, participants will be able to:
• Be cognizant of evidence-based outcomes of laparoscopic colorectal surgery
• Realize the current dismal percentage of colorectal cases performed laparoscopically in the US
• Contrast US data with the penetration of laparoscopic colorectal operations in other countries
• Consider the potential role of Centers of Excellence, which advanced the practice of bariatric surgery, as a motivational factor in improving patient outcomes
• Assimilate and emulate means of learning these skills
• Be educated about a government-imposed ground-breaking program in the UK

SCHEDULE
3:30 PM Introduction Tonia M. Young-Fadok, M.D. & John H. Marks, M.D.
3:35 PM With Results Like These Why is Anyone Still Doing Open Surgery? Tom Read, M.D.
3:50 PM What IS the Rate of Adoption in the United States? Patrick Roberts, M.D.
4:05 PM What are Adoption Rates Around the World? Juan Patron, M.D.
4:20 PM Is There a Role for a Center of Excellence? Steven D. Wexner, M.D.
4:35 PM How Do I Get Started? George Chang, M.D.
4:50 PM So What is REALLY Happening in the UK? LAPCO and MATTU Michael Bailey, M.D.
5:05 PM Maximizing Reimbursement Karl Boyd, M.D.
5:20 PM Discussion

SAGES acknowledges an educational grant in support of this symposium from Olympus

Meet the Leadership Reception For Residents, Fellows & New Members
Location: Marriott RiverCenter Hotel, Sazo Restaurant

Don’t miss the SAGES Main Event – Featuring: The International Sing-Off and Video Shorts!
Location: Sunset Station. See page 101 for details.
Time: 7:30 PM - 11:00 PM
Free to all SuperPass Registrants (Registration Option A).
Registration Options B & C must purchase tickets.
### Saturday, April 2, 2011

#### Scientific Sessions & Panels

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<th>Time</th>
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<th>Session</th>
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<td>7:30 AM - 5:00 PM</td>
<td>Room 217A-B</td>
<td>SAGES Career Development Seminar</td>
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<tr>
<td>8:00 - 9:30 AM</td>
<td>Ballroom C2-3</td>
<td>S514 – Plenary Session II</td>
</tr>
<tr>
<td>9:30 - 10:00 AM</td>
<td>Ballroom C2-3</td>
<td>SAGES Karl Storz Lecture: Blow the Whistle! Timeout for our Conflict of Interest Policies, David Rattner, MD</td>
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<tr>
<td>10:00 AM - 1:00 PM</td>
<td>Exhibit Hall C</td>
<td>Exhibits/Posters/Learning Center Open</td>
</tr>
<tr>
<td>10:00 - 11:30 AM</td>
<td>Room 214C-D</td>
<td>S515 – Best of Video III</td>
</tr>
<tr>
<td>10:00 - 11:30 AM</td>
<td>Ballroom C1</td>
<td>Panel: Patient Safety</td>
</tr>
<tr>
<td>10:00 - 11:30 AM</td>
<td>Ballroom C2-3</td>
<td>Session: General Surgery in Obese Patients – Tips and Tricks</td>
</tr>
<tr>
<td>10:00 - 11:30 AM</td>
<td>Room 214A-B</td>
<td>Session: GERD and Paraesophageal Hernia</td>
</tr>
<tr>
<td>11:30 AM - 12:00 PM</td>
<td>Ballroom C1</td>
<td>SAGES Annual General Membership Business Meeting – All SAGES Members Should Attend!</td>
</tr>
<tr>
<td>12:00 - 1:00 PM</td>
<td>Exhibit Hall C</td>
<td>FREE Lunch in Exhibit Hall for All Meeting Attendees</td>
</tr>
<tr>
<td>1:00 - 2:30 PM</td>
<td>Room 214A-B</td>
<td>S516 – Education / Simulation</td>
</tr>
<tr>
<td>1:00 - 2:30 PM</td>
<td>Room 214C-D</td>
<td>S517 – Solid Organ</td>
</tr>
<tr>
<td>1:00 - 2:30 PM</td>
<td>Ballroom C1</td>
<td>Panel: How Good Are You Really? Incorporating Patient Centered Measurement Tools Into Your Busy Practice</td>
</tr>
<tr>
<td>2:30 - 4:00 PM</td>
<td>Room 214C-D</td>
<td>S518 – Hepatobiliary</td>
</tr>
<tr>
<td>2:30 - 4:00 PM</td>
<td>Ballroom C1</td>
<td>Session: Advancing Beyond Optical Imaging – We Can Do Better Than Relying on Our Eyes</td>
</tr>
<tr>
<td>2:30 - 4:00 PM</td>
<td>Room 214A-B</td>
<td>Session: Adolescent Surgery – They Look Like Adults, but Aren’t the Same</td>
</tr>
</tbody>
</table>

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### Important AV Information

You may now upload your presentation online any time before the meeting and until the night before your session during the meeting. Please load your presentation online (http://sages.presentationman.com/).

**Please Note:** Even if you have submitted your presentation online you must visit the Speaker Prep room no later than 2 hours before your presentation. If you do not, your session moderator may not allow you to present.

**Speaker Prep Hours – Room 216**

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Date</th>
<th>Time</th>
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<tbody>
<tr>
<td>3/29/11</td>
<td>12:00 Noon - 5:00 pm</td>
<td>4/1/11</td>
<td>5:30 am - 6:00 pm</td>
</tr>
<tr>
<td>3/30/11</td>
<td>5:30 am - 5:00 pm</td>
<td>4/2/11</td>
<td>5:30 am - 6:00 pm</td>
</tr>
<tr>
<td>3/31/11</td>
<td>5:30 am - 5:00 pm</td>
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</tbody>
</table>

### 2011 Poster Session

**Posters will be on display, Thursday, Friday & Saturday. Poster presenters will be available for Q&A on Friday, from 12:30 - 1:30 PM**

*SAGES acknowledges our Diamond and Platinum Level Donors for their support of the poster session: Covidien, Ethicon Endo-Surgery, Inc., Karl Storz Endoscopy-America, Olympus*
SAGES Career Development Seminar  
**Location:** Room 217 A-B

This workshop has been designed by the SAGES Research Committee in order to provide its membership with education and personalized training on obtaining the skill set required for academic success. The overarching goal of this 1-day program is to provide fellows, junior faculty, and chief residents with a venue for interaction with experienced faculty with a track record of successful publication, funding, and mentorship.

This seminar will allow participants to submit grants and copies of manuscripts to obtain feedback throughout the seminar. Participants will be able to take part in a “mock grant review” as well as take part in a session dedicated to writing manuscripts. Additional interactive sessions will include negotiating and “mock interviews”. Lectures will be integrated into the course to give a foundation for participants including how to balance work and personal life, tips on writing a grant, as well as partnering with Industry.

**SAGES does not offer CME for this seminar.**

**SS14 Plenary Session II**  
**Moderators:** Jo Buyske, MD, Abe Fingerhut, MD  
**Location:** Ballroom C2-3

* * Included in Registration SuperPass (Option A) or Registration Option C

**S084 BROAD CLINICAL UTILIZATION OF NOTES. IS IT SAFE?**  
Santiago Horgan, MD, Ozanan Meireles, MD, Garth Jacobsen, MD, Bryan Sandler, MD, Kari Thompson, MD, Toshio Katagiri, MD, Sonia Ramamooorthy, MD, Michael Sedrak, MD, Thomas Savides, MD, Alberto Ferreres, MD, Saniea Majid, MD, Sheetal Nijhawan, MD, Takayuk, University of California San Diego, San Diego - CA

**S085 COMPARISON STUDIES ON EMERGENT LAPAROSCOPIC LAVAGE AND DRAINAGE VS HARTMANN’S PROCEDURE IN 83 CONSECUTIVE COMPLICATED DIVERTICULITIS WITH GENERALIZED PURULENT PERITONITIS: DAMAGE CONTROL STRATEGY IN THE MANAGEMENT OF SEVERE DIVERTICULITIS**  
Song Liang, Morris E Franklin, The Texas Endosurgery Institute

**S086 COMPARISON OF CLAVIEN CLASS IV AND V COMPLICATIONS FOR LAPAROSCOPIC VERSUS OPEN COLECTOMY USING NSQIP DATA AND RISK ADJUSTMENT**  
Shawn Webb, MD, Ilan Rubinfeld, MD, Velanovich Vic, MD, M H, MD, Reickert Craig, MD, Henry Ford Health Systems

**S087 COMPARISON BETWEEN RYGB, DS, AND VSG EFFECT ON GLUCOSE HOMEOSTASIS: INTERIM REPORT OF PROSPECTIVE STUDY.**  
Mitchell S Roslin, MD FACS, Yuriy Dudyi, MD, Joanne Weiskopf, PA, Paresh Shah, MD FACS, Paresh Shah, MD FACS, Lenox Hill Hospital, Northern Westchester Hospital Center

**S088 GASTRIC BYPASS SURGERY RESTORES MEAL STIMULATION OF THE ANOREXIGENIC GUT HORMONES, PEPTIDE YY AND GLUCAGON-LIKE PEPTIDE-1 INDEPENDENTLY OF CALORIC RESTRICTION.**  
Sarah Evans, MD, Zehra Pamuklar, MD, Jonathan Rosko, RN, Patrick Mahaney, RD, Ning Jiang, MD, Chan Park, MD, Alfonso Torquati, MD, Duke University, Department of Surgery

**SAGES acknowledges our Diamond Level Donors for their support of this session: Covidien, Ethicon Endo-Surgery, Inc.**

**Karl Storz Lecture**

**Blow the Whistle! Timeout for our Conflict of Interest Policies**

**David W. Rattner, M.D.**

**Professor of Surgery, Harvard Medical School**  
**Chief, Division of General and Gastrointestinal Surgery, and Director Clinical Programs, Center for Innovative Minimally Invasive Therapy, Massachusetts General Hospital, Boston, MA**

This award is named in memory of Prof. Med Karl Storz

David Rattner is the best kind of innovator; one who is prepared for anything, expects nothing and understands that progress sometimes comes in unexpected forms. That is why he was perfect to be a pioneer and leader in NOTES and NOSCAR. His areas of research and publication have also included: Minimally invasive surgery; operating room of the future; pancreatic disease

Dr. Rattner served on the SAGES Board since 1999, was Treasurer from 2001-2003, and President 2004-2005. He currently is Chairman of the SAGES/ASGE Joint Committee on NOTES. He is also President of SSAT, The Society for Surgery of the Alimentary Tract.

He is the founding member of The Center for Integration of Medicine and Innovative Technology (CIMIT) and has served on the Board of Governors of the American College of Surgeons. He has served as editor or reviewer for more than ten journals. Dr. Rattner has helped to disseminate innovation by serving as visiting professor on four continents, publishing more than 200 peer review papers and reviews and by teaching anywhere that a group of interested surgeons wanted to learn from Maine to Manila; From Hawaii to Honduras. Despite this dedication to science and technology, David has managed to play a mean game of golf from time to time.

**SAGES acknowledges Karl Storz Endoscopy-America** for a generous endowment in support of this lecture.
Saturday, April 2, 2011

**Scientific Sessions & Panels**

**Last Chance to Visit Exhibits, Posters, Learning Center Open**

Please note 1:00 PM Closing Time!

**Concurrent Sessions** (accepted oral & video presentations)

<table>
<thead>
<tr>
<th>Session</th>
<th>Title</th>
<th>Location</th>
<th>Moderators</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS15</td>
<td>Best of Video III</td>
<td>Room 214C-D</td>
<td>William Richards, MD, David McClusky, MD</td>
</tr>
<tr>
<td>V031</td>
<td>LAPAROSCOPIC REPAIR OF MALROTATION IN THE ELDERLY RAHAGHA S PAVOOR, MD, FENG BO, PhD, JEFFREY W MILSOM, MD FACS, WEIL CORNELL MEDICAL COLLEGE/NEW YORK PRESBYTERIAN HOSPITAL</td>
<td></td>
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<tr>
<td>V032</td>
<td>LAPAROSCOPIC SUBTOTAL COLECTOMY WITH TRANSRECTAL EXTRACTION OF THE WHOLE COLON AND ILEORECTAL ANASTOMOSIS Mark A Dobbertien, DO FACS, Ziad T Awad, MD FRCSI FACS, Michael Nussbaum, MD FACS, Sunil Sharma, MD, University of Florida College of Medicine at Jacksonville, Department of Surgery, Minimally Invasive Surgery Division</td>
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<tr>
<td>V033</td>
<td>LAPAROENDOSCOPIC SINGLE-SITE COMMON BILE DUCT EXPLORATION. Kazunori Shibao, MD PhD, Aichiro Higure, MD PhD, Koji Yamaguchi, MD PhD, Dept. of Surgery I, School of Medicine, University of Occupational and Environmental Health</td>
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<tr>
<td>V034</td>
<td>MINIMALLY INVASIVE ESOPHAGO- GASTRECTOMY WITH INTRA THORACIC ANASTOMOSIS (IVOR-LEWIS) C Palanivelu, MCH FACS FRCS, S Rajapandian, MS DNB, R Sathiymurthy, MS, P Praveenraj, MS, R Parthasarathi, MS, V Vaithiswaran, MS, GEM Hospital</td>
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<tr>
<td>V035</td>
<td>LAPAROSCOPIC REPAIR OF DIAPHRAGMATIC HERNIA AFTER CARDIAC TRANSPLANT AND LVAD EXPLANTATION Philip Bao, MD, Kevin Watkins, MD, Stony Brook University Medical Center</td>
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<tr>
<td>V036</td>
<td>LAPAROSCOPIC REPAIR OF MORGAGNI HERNIA Salman Al-Sabah, MD MBA FRCSC, LS Feldman, MD, MC Vassiliou, MD, LE Ferri, MD, GM Fried, MD, McGill University</td>
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<tr>
<td>V037</td>
<td>LAPAROSCOPIC TREATMENT OF MEDIAN ARCUATE LIGAMENT SYNDROME Erik G Lough, MD, Sam Rossi, MD, Albeir Mousa, MD FACS, WVU - Charleston Division, CAMC Health Sciences Institute</td>
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<tr>
<td>V038</td>
<td>LAPAROSCOPIC REDO NISSEN FUNDOPLICATION WITH ESOPHAGEAL DIVERTICULOTOMY Sachin S Kukreja, MD, James R Wallace, MD PhD, Matthew I Goldblatt, MD, University of Illinois at Mount Sinai Hospital, Froedtert Memorial Lutheran Hospital and the Medical College of Wisconsin</td>
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<tr>
<td>V039</td>
<td>THORACOSCOPY REMOVAL OF A SUTURE NEEDLE FROM THE POSTERIOR PERICARDIUM AFTER CABG N T Liu, MD, R C Gilkeson, MD, A H Markowitz, MD, C Schroeder, MD PhD, Case Medical Center, Cleveland, Ohio</td>
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<tr>
<td>V040</td>
<td>LAPAROSCOPIC EXPERIENCE WITH VERNIX CASEOSA PERITONITIS Jonathan G Bailey, MD, Dennis Klasssen, MD, Dalhousie University</td>
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</table>

**Patient Safety Panel**

**Chair:** Steven Schwaitzberg, M.D.

**Co-Chair:** Thomas Aloia, M.D.

**Location:** Ballroom C1

**Objectives:**

At the conclusion of this session, participants will be able to:

- Identify situations in the operating rooms that may pose greater risk for medical error so that they may be avoided
- Analyze the available SCIP data and their limitations in order to recognize and employ opportunities for complication reduction
- Identify local barriers to safety checklists or other process improvement initiatives in order to better integrate the OR team and achieve improved results
- Discuss new technologies that might reduce the incidence or retained foreign bodies in the OR

**Schedule**

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 AM</td>
<td>Introduction</td>
<td>Steven Schwaitzberg, M.D. &amp; Thomas Aloia, M.D.</td>
</tr>
<tr>
<td>10:05 AM</td>
<td>Anatomy of an Error</td>
<td>Don Moorman, M.D.</td>
</tr>
<tr>
<td>10:20 AM</td>
<td>Does the Aviation Analogy Work in the Operating Room?</td>
<td>Thomas Aloia, M.D.</td>
</tr>
<tr>
<td>10:35 AM</td>
<td>Barriers to WHO Surgical Safety Checklist Adoption</td>
<td>Maureen Mulcare, M.D.</td>
</tr>
<tr>
<td>10:50 AM</td>
<td>Does SCIP Make a Difference?</td>
<td>Lauren Nicholas, Ph.D.</td>
</tr>
<tr>
<td>11:05 AM</td>
<td>Will RFID or Other Technologies Really Reduce Retained Foreign Bodies in OR?</td>
<td>Dmitry Oleynikov, M.D.</td>
</tr>
<tr>
<td>11:20 AM</td>
<td>Discussion</td>
<td></td>
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</table>

*SAGES acknowledges our Silver Level Donors for their support of this session: Boston Scientific, Davol Inc., a BARD Company, and Gore & Associates*
General Surgery in Obese Patients Session: Tips and Tricks

Chair: Samer Mattar, M.D.  
Co-Chair: David Earle, M.D.  
Location: Ballroom C2-3

This session focuses on the difficulties in performing non-bariatric surgery in obese patients. Participants will learn tips and tricks about overcoming technical difficulties in exposure as best practices recommendations about the perioperative management of these patients will be presented.

Objectives:
At the conclusion of this session, participants will be able to:

• Learn strategies for safe initial port placement, port anchoring during surgery, and port site closure techniques in obese patients
• Learn management strategies for small (<5cm), medium (5-10 cm), and large (>10 cm) ventral hernias in obese patients.
• Develop a treatment algorithm based on hernia size, when to avoid operatives without pre-op weight loss, and strategies for pre-op weight loss
• Diagnose and treat perforated duodenal, marginal ulcer after gastric bypass, and how/when to perform laparoscopic peritoneal lavage for perforated diverticulitis.
• Learn strategies to avoid ostomy necrosis in obese patients if ostomy is necessary
• Learn a treatment algorithm for the use of anti-reflux/weight loss surgery for gastroesophageal reflux disease, and strategies for hiatal hernia repair in obese patients including how/when to use mesh and Collis gastroplasty

SCHEDULE

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 AM</td>
<td>Introduction</td>
<td>Samer Mattar, M.D. &amp; David Earle, M.D.</td>
</tr>
<tr>
<td>10:05 AM</td>
<td>Establishing Pneumoperitoneum and Managing Port Sites in Obese Patients</td>
<td>John Romanelli, M.D.</td>
</tr>
<tr>
<td>10:20 AM</td>
<td>Ventral Hernia Repair in Obese Patients: Strategies for Preoperative Weight Loss</td>
<td>B. Todd Heniford, M.D.</td>
</tr>
<tr>
<td>10:35 AM</td>
<td>Management of Perforated Viscus in the Obese Patient: Small and Large Bowel</td>
<td>Bruce Schirmer, M.D.</td>
</tr>
<tr>
<td>10:50 AM</td>
<td>Management of GERD/Hiatal Hernia in the Obese Patient</td>
<td>Barry Salky, M.D.</td>
</tr>
<tr>
<td>11:05 AM</td>
<td>Discussion</td>
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</tbody>
</table>

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• Read interesting articles
• Members can share and collaborate with the SAGES community

Participate now at www.sages.org
GERD and Paraesophageal Hernia Session

Chair: Lee L. Swanstrom, M.D.  
Co-Chair: Karim Trad, M.D.  
Location: Room 214A-B

A dissection of critical issues around the practice of antireflux surgery, including politics of referral, surgical practice issues and unresolved or controversial technical problems.

Objectives:
At the conclusion of this session, participants will be able to:
• Demonstrate knowledge of current referral trends in ARS (antireflux surgery)
• Adopt techniques to build a viable practice in ARS
• Improve their technical outcomes of ARS and PEH surgery
• Develop a strategy for patient evaluation for improved outcomes

SCHEDULE

10:00 AM  Introduction  Lee L. Swanstrom, M.D. & Karim Trad, M.D.
10:05 AM  Current Trends in Referrals for ARS: What Happened and What Can We Do About it?  Vic Velanovich, M.D.
10:20 AM  GERD Treatment in the “Grey Zone”  Thomas DeMeester, M.D.
10:35 AM  Working the Patient Up: How Much is Needed and Who Should Do It?  Christy Dunst, M.D.
10:50 AM  The Hiatal Mesh Question: Pro and Con  Brant Oelschlager, M.D.
11:05 AM  New Developments: TIFF, Torax, and Others  Reginald Bell, M.D.
11:20 AM  Discussion

11:30 AM - 12:00 PM  
SAGES Annual General Membership Business Meeting  
All SAGES Members Encouraged to Attend!  
Location: Ballroom C1

AGENDA

President’s Introduction – Jo Buyske, MD
Report of Ballots, Bylaws Changes, Introduction of new Officers / Board Members – Adrian Park, MD
Committee Reports:
  Finance / Assets
  Development
  Business Development
  Membership
  Legislative
  Industry Relations
  Publications / Journal
  Guidelines
  Flexible Endoscopy
  Educational Resources
  Resident Education
  Continuing Education
  FLS
  FES
  FUSE
  Research & Career Development
  Quality, Outcomes & Safety
  Program
  Technology
  Web Task Force & Communications
  Global Affairs
  Military Working Group
  Liaison Groups (Bariatric, Ethics, Pediatric)
Remarks by Incoming President – Steven Schwatzberg, MD
Saturday, April 2, 2011

Scientific Sessions & Panels

11:30 AM - 1:00 PM

BREAK: Exhibits, Posters & Learning Center Open

12:00 PM - 1:00 PM

FREE Lunch in Exhibit Hall for all SAGES Scientific Session Registrants! Last Chance to visit Exhibits, Posters & Learning Center!

1:00 PM - 2:30 PM

Concurrent Sessions (accepted oral & video presentations)

Location: Room 214A-B

Concurrent Sessions

SS16 Education / Simulation

Moderators: James “Butch” Rosser, MD, Jacques Marescaux, MD

S089 VALIDATION OF OBSERVATIONAL CLINICAL HUMAN RELIABILITY ASSESSMENT (OCHRA) IN LAPAROSCOPIC COLORECTAL SURGERY PERFORMED BY SPECIALISTS Danilo Miskovic, MD FRCS, Melody Ni, PhD, Susannah M Wyles, MSc MRCS, Amjad Parvaiz, FRCS, George B Hanna, PhD FRCS, Imperial College, London, United Kingdom

S090 PROFICIENCY-BASED TRAINING FOR ROBOTIC SURGERY: CONSTRUCT VALIDITY AND WORKLOAD FOR NINE INANIMATE EXERCISES Genevieve Dulan, MD, Robert V Rege, MD, Deborah C Hogg, BS, Kristine K Gilberg-Fisher, RN BSN, Nabeel A Arain, MD MBA, Seifu T Tesfay, RN MS, Daniel J Scott, MD, University of Texas, Southwestern

S091 RANDOMIZED CONTROLLED TRIAL OF LAPAROSCOPIC PARTIAL TASKS WITH A REVERSED CAMERA VIEW VERSUS REVERSED-VIEW ORIENTATION DRILLS Samaan Sattarzadeh, Adnan Mohsin, Shawn Tsuda, MD, University of Nevada School of Medicine

S092 DOES PREVIOUS LAPAROSCOPIC EXPERIENCE IMPROVE THE ABILITY TO PERFORM SINGLE INCISION LAPAROSCOPIC SURGERY? Trystan M Lewis, Mr, Rajesh Aggarwal, Mr, Richard M Kwasnicki, Mr, Ara Darzi, Prof, Parskevada Paraskeva, Mr, Imperial College London

S093 COMPARISON OF LAPAROSCOPIC SKILLS PERFORMANCE USING LAPAROSCOPIC SINGLE-SITE ACCESS (SSA) DEVICES VS. AN INDEPENDENT-PORT SSA APPROACH Matthew R Schill, BS, J Esteban Varela, MD, Margaret M Frisella, RN, L. Michael Brun, MD, Section of Minimally Invasive Surgery, Washington University School of Medicine, St. Louis, MO

S094 DEFINING A PROFICIENCY-BASED VIRTUAL REALITY CURRICULUM FOR LAPAROSCOPIC COLORECTAL SURGERY Vanessa, N Palter, MD, Mauritis Graafland, MD, Marlies P Schijven, MD PhD, Teodor P Grantcharov, MD PhD, St. Michael's Hospital, Toronto, On, Canada,., Academic Medical Center Amsterdam, Amsterdam, The Netherlands

S095 GAZE TRAINING IMPROVES TECHNICAL PERFORMANCE AND RESISTANCE TO DISTRACTIONS IN VIRTUAL LAPAROSCOPIC SURGERY Mark Wilson, Sam Vine, James Brewer, Elizabeth Bright, Rich Masters, John McGrath, University of Exeter

S096 METHODIST ADVANCED (MAD) SKILLS DRILLS : MODIFICATION OF A BOX TRAINER TO ENABLE “OFF AXIS” TRAINING IN ADVANCED LAPAROSCOPIC SURGERY Rohan A Joseph, MD, Brian J Dunkin, MD, Barbara L Bass, MD, Patrick R Reardon, MD, Methodist Institute for Technology, Innovation and Education (MITIE), Department of Surgery, The Methodist Hospital, Houston -TX

S097 MASTERY VERSUS STANDARD PROFICIENCY TARGETS FOR BASIC LAPAROSCOPIC SKILL TRAINING: EFFECT ON SKILL TRANSFER AND RETENTION Nicoleta O Kolozsvari, MD, Pepa Kaneva, MSc, Chantalle Brace, Genevieve Chartrand, Marlou Vaillancourt, MD, Melina C Vassiliou, MD, Gerald M Fried, MD, Liane S Feldman, MD, Steinberg-Bernstein Centre for Minimally Invasive Surgery and Innovation, McGill University, Montreal, Qc, Canada

SAGES 30th Anniversary

SAGES celebrates its 30th anniversary this year. Thirty years of great thinking, great action and great leadership. Look around the meeting to find reminders of our enormous accomplishments over three decades.

We have changed surgery. We have saved patients’ lives.

Chair: Vic Velanovich, M.D.
Co-Chair: L. Michael Brunt, M.D.

A panel session of five experts on use of patient-centered outcomes on how and when to use the various tools available so that the practicing surgeon can routinely incorporate these outcomes in daily practice. The session will focus on what is a patient-centered outcome, patient satisfaction, quality of life, particularly in the areas of minimally invasive surgery, oncologic surgery, and bariatric surgery.

Objectives:
At the conclusion of this session, participants will be able to:
- Summarize the concepts of patient reported outcomes, particularly quality of life and satisfaction
- Incorporate various instruments which are available to assess patient-reported outcomes in their practice
- Incorporate patient-reported outcomes into daily practice, this will lead to improved communication with their patients and thereby better able to address patients’ needs
- Summarize newer computer-based methods of collecting patient-reported outcomes

SCHEDULE
1:00 PM - 2:30 PM

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>1:00 PM</td>
<td>Introduction</td>
<td>Vic Velanovich, M.D. &amp; L. Michael Brunt, M.D.</td>
</tr>
<tr>
<td>1:05 PM</td>
<td>Patient Satisfaction: What is It? How to Measure It</td>
<td>Andrew Chow, B.Sc.</td>
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<tr>
<td>1:20 PM</td>
<td>Patient-Reported Outcomes in the Clinical Practice of Cancer Care</td>
<td>Albert Wu, M.D.</td>
</tr>
<tr>
<td>1:35 PM</td>
<td>Patient-Reported Outcomes in the Practice of Bariatric Surgery</td>
<td>Michel Murr, M.D.</td>
</tr>
<tr>
<td>1:50 PM</td>
<td>A Practical Guide for Incorporating Patient-Reported Outcomes into Your Practice</td>
<td>Vic Velanovich, M.D.</td>
</tr>
<tr>
<td>2:05 PM</td>
<td>The Future? The National Institutes of Health PROMIS Project</td>
<td>David Nerenz, Ph.D.</td>
</tr>
<tr>
<td>2:20 PM</td>
<td>Discussion</td>
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</tbody>
</table>
Concurrent Sessions  (accepted oral & video presentations)

**SS18 Hepatobiliary**

**Moderators:** Greg Stiegmann, MD, Tehemton Udwadia, MD

- **S103 LAPAROSCOPIC COMMON BILE DUCT EXPLORATION: CLINICAL STUDIES ON TRANSCHOLEDCHAL VS TRANSYSTIC APPROACHES IN 374 CONSECUTIVE CASES**  
  Song Liang, MD PhD, Morris E Franklin, MD, The Texas Endosurgery Institute

- **S104 RESULTS OF LAPAROSCOPIC COMMON BILE DUCT EXPLORATION: PROSPECTIVE RANDOMIZED TRIAL**  
  V. V. Grubnik, Prof, O. I. Tkachenko, O. L. Kovalchuk, Odessa State Medical University

- **S105 LAPAROSCOPIC TRANS-CYSTIC EXPLORATION FOR SINGLE-STAGE MANAGEMENT OF COMMON DUCT STONES AND ACUTE CHOLECYSTITIS**  
  Massimo Chiarugi, MD FACS, Christian Galatioto, MD, Piero Lippolis, MD, Luigi Decamini, MD, Adolfo Puglisi, MD, Chiara Bagnato, MD, Sonia Panicucci, MD, Marco Pelosini, MD, Pietro Iacconi, MD, Massimo Seccia, MD, Department of Surgery, University of Pisa, Pisa, Italy

- **S106 SYSTEMIC IMMUNE RESPONSE AND CLINICAL RESULTS AFTER SINGLE PORT VERSUS CONVENTIONAL LAPAROSCOPIC CHOLECYSTECTOMY: PROSPECTIVE NONRANDOMIZED STUDY**  
  Hyung-Joon Han, MD, Sae-Byeol Choi, MD, Wan-Bae Kim, MD, Tae-Jin Song, MD, Sung-Ock Suh, MD, Sang-Yong Choi, MD, Chung-Yun Kim, MD, Jong-Han Kim, MD, Seong Heum Park, MD, Dong-Sik Kim, MD, Jin-Suk Lee, MD, Young-Chul Kim, MD, Department of Surgery, Korea University College of Medicine

- **S107 A-DEFENSINS AND HSCRP FOR COMPARING THE INFLAMMATORY REACTION IN 4-PORT LAPAROSCOPIC VS LESS CHOLECYSTECTOMY Konstantinos Tsimoyiannis, MSc, Konstantinos Tellis, Maria Mpakola, Alexandros Tselepis, PhD, Evangelos Tsimoyiannis, PhD FACS, Michalis Pitiakoudis, "G.HATZIKOSTA" GENERAL HOSPITAL OF IOANNINA,GREECE, UNIVERSITY OF IOANNINA, GREECE

- **S108 LAPAROSCOPIC ROBOTIC ASSISTED WHIPPLE: EARLY RESULTS OF A NOVEL TECHNIQUE AND COMPARISON WITH THE STANDARD OPEN PROCEDURE**  
  Matthew Walsh, MD, Sri Chalikonda, MD, Juan Ramon Aguilar Saavedra, MD, Gregory Lentz, PhD, John Fung, MD, Cleveland Clinic Foundation

- **S109 OUTCOMES AND COSTS OF LAPAROSCOPIC DISTAL PANCREATECTOMY: COMPARISON TO OPEN RESECTION IN A SINGLE CENTRE.**  
  Adrian M Fox, Dr, Kristen B Pitzul, Faizal D Bhojani, Dr, Max Kaplan, Carol-anne Moulton, Dr, Alice Wei, Dr, Sean P Cleary, Dr, Allan Okrainec, Division Of General Surgery, Toronto General Hospital, University Health Network, Toronto, ONTARIO; Division Of General Surgery, Toronto Western Hospital, University Health Network, Toronto, ONTARIO

- **S110 SINGLE CENTER EXPERIENCE OF 327 CONSECUTIVE LAPAROSCOPIC LEFT PANCREATECTIC RESECTION: CHANGING OF SURGICAL PARADIGM OF LEFT PANCREATECTIC RESECTION**  
  Songcheol Kim, Ki byung Song, Duck jong Han, Younghun Kim, Jaebum Park, Haeran Ha, Haeryun Seo, Yunbaik Choi, Depement of surgery, Ulsan University College of Medicine and Asan Medical Center

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**Advancing Beyond Optical Imaging Session:**

**We Can Do Better Than Relying on Our Eyes**

*Chair:* Michael Marohn, M.D.  
*Co-Chair:* Yoav Mintz, M.D.

As Minimally Invasive Surgery is performed for more complex operations, and the size and number of ports are ever decreasing, the vision capability is becoming critical for safety and success. This session will review advances in radiologic and biologic imaging as well as image guidance capabilities for MIS and how they are practiced in other surgical specialties.

**Objectives:**

- Recognize some of the new developments in medical biologic imaging and guidance systems
- Discuss the use of biological imaging in minimally invasive surgery
- Describe the different applications in image guided surgery in other surgical specialties

**SCHEDULE**

- **2:30 PM**  
  Introduction  
  Michael Marohn, M.D. & Yoav Mintz, M.D.

- **2:35 PM**  
  Fluorescence Imaging in Robotic Assisted Surgery  
  Catherine Mohr, M.D.

- **2:50 PM**  
  Augmented Reality – How Far Away are We From Clinical Practice  
  Jacques Marescaux, M.D.

- **3:05 PM**  
  Computer Assisted Navigation Surgery for Complex Pelvic and Acetabular Trauma  
  Yoram Weil, M.D.

- **3:20 PM**  
  Computer-Aided Navigation in Neurosurgery  
  Patrick Kelly, M.D.

- **3:35 PM**  
  Intraoperative MRI for Image Guided Surgery  
  Andreas Melzer, M.D.

- **3:50 PM**  
  Discussion
Adolescent Surgery Session:
They Look Like Adults, but Aren’t the Same

**Chair:** Gretchen Purcell Jackson, M.D., Ph.D.
**Co-Chair:** Carroll Mac Harmon, M.D.

Adolescent surgical patients often resemble adults in size and shape, but there are fundamental differences in development, pathophysiology, and cognitive abilities that may affect their management. This session will examine the unique features of adolescent patients, the disease processes that occur in adolescents, and their treatment.

**Objectives:**
At the conclusion of this session, participants will be able to:
- Enumerate the physiologic and cognitive difference between adolescent and adult patients
- Apply relevant legal and ethical principles in obtaining consent and assent for procedures and research studies in adolescents
- Distinguish the characteristic of child, adolescent and adult inguinal hernias and discuss the approaches to their management
- Identify the unique features of adult diseases when present in adolescent patients and select appropriate management plans

**SCHEDULE**

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<tr>
<th>Time</th>
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<tr>
<td>2:30 PM</td>
<td>Introduction</td>
<td>Gretchen Purcell Jackson, M.D., Ph.D. &amp; Carroll Mac Harmon, M.D.</td>
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<td>2:35 PM</td>
<td>Adolescent Anatomy, Physiology, and Psychology</td>
<td>Gretchen Purcell Jackson, M.D., Ph.D.</td>
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<td>2:45 PM</td>
<td>Surgery and Research in Adolescents: Consent, Assent, and Legal Emancipation</td>
<td>Thom Lobe, M.D.</td>
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<td>2:55 PM</td>
<td>Adolescent Inguinal Hernia Repair</td>
<td>Todd Ponsky, M.D.</td>
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<td>3:10 PM</td>
<td>Gastroesophageal Reflux Disease and Severe Asthma in the Adolescent</td>
<td>Saundra Kay, M.D.</td>
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<td>3:25 PM</td>
<td>The Adolescent Female with Abdominal Pain</td>
<td>Marjorie J. Arca, M.D.</td>
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<td>3:45 PM</td>
<td>Discussion</td>
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At the conclusion of this activity, the endoscopic experience, organ resection a peritoneal exploration. For the more or transcolonic access in order to perform how to establish transgastric, transvaginal how to operate a lexible endoscope and lexible endoscopic experience can learn NOTES®. Laparoscopic surgeons without tactile feedback, which is essential to necessary to meet their learning objectives. and spend whatever time is

1. Natural Orifice Translumenal Endoscopic Surgery (NOTES™)

Coordinator: Kai Mattges, M.D., Ph.D.
Natural Orifice Translumenal Endoscopic Surgery (NOTES®) is an emerging research area of minimally-invasive surgery. The development of new surgical procedures and devices can be simulated effectively in a training model. For the NOTES® Station of the SAGES learning center, a novel ex-vivo simulator is used to provide a realistic training experience using commercially available laparoscopic and flexible endoscopic devices. The ex-vivo model consist of a complete porcine peritoneal cavity explant, which is harvested from the meat production industry, thoroughly cleaned, embalmed and modified to closely resemble human anatomy. Real tissue provides a realistic tactile feedback, which is essential to assess and train new techniques such as NOTES®. Laparoscopic surgeons without lexible endoscopic experience can learn how to operate a flexible endoscope and how to establish transgastric, transvaginal or transcolonic access in order to perform a peritoneal exploration. For the more advanced ‘digestivists’ with flexible endoscopic experience, organ resection (appendectomy, cholecystectomy, distal pancreatectomy, nephrectomy, liver lobe resection, hysterectomy, oophorectomy) or gastrointestinal anastomosis techniques (gastrojejunostomy, partial gastrectomy, colectomy) will be simulated.

Objectives:
At the conclusion of this activity, the participant will be able to:
- Perform translumenal access of the peritoneal cavity by using a transgastric, transcolonic or transvaginal approach using flexible endoscopes with or without laparoscopic assistance
- Perform NOTES® appendectomy, cholecystectomy, distal pancreatectomy, nephrectomy, liver lobe resection, hysterectomy, oophorectomy
- Perform a secure closure of the translumenal access port using various techniques such as t-tags, clips or sophisticated closure devices
- Review the limitation of currently available standard endoscopic devices and the advantage of additional laparoscopic ports for visualization and retraction using a hybrid-NOTES® approach

2. Single Incision Laparoscopic Surgery: Instruments & Techniques

Coordinators: Brian Jacob, MD, Greg Dakin, MD
Elliot Silverman, PA-C
Single incision or single port access is emerging as an optional technique for entry into the abdominal cavity to perform a variety of different laparoscopic procedures. To date, there is no dominantly-preferred entry method, but instead a variety of options exist that include using multiple trocars through a single skin incision or using one of many specially designed single port access devices. At this station, you will become familiar with both options. A variety of low-profile trocars that are routinely used in single incision laparoscopic surgery will be available for use in an inanimate model. Additionally, you will be able to practice inserting and setting up a variety of single port access devices that are currently available for clinical use. By the end of your visit, you will be more familiarized with and more able to compare and contrast the different entry methods available to perform single incision laparoscopic surgery operations. In addition, this station will also provide an opportunity to suture using single incision techniques in a trainer box and then to compare your skills to traditional laparoscopic suturing. Both straight instruments and articulating instruments will be compared. Participants will have the opportunity to use a variety of single incision laparoscopic surgery instruments.

Objectives:
At the conclusion of this activity, the participant will be able to:
- Perform different single incisions tasks such as suturing, running bowel, or dissecting
- Demonstrate how to insert and set up a variety of single port access devices
- Compare and contrast different entry methods available to perform single incision laparoscopic surgery operations
- Demonstrate how to insert and set up a variety of single port access devices

3. Fundamentals of Laparoscopic Surgery (FLS)

Coordinator: Melina Vassiliou, MD
This station will introduce participants to the Fundamentals of Laparoscopic Surgery (FLS) didactic and technical skills modules. FLS was designed to teach the physiology, fundamental knowledge, and technical skills required to perform basic laparoscopic surgery, and is a joint ACS-SAGES program. Participants will use the interactive web-based format and the lap trainer boxes to become familiar with the program while working on their laparoscopic knowledge and skills. This station will also give new residency program directors the opportunity to have hands-on time with the module and to learn about the Covidien Educational Fund.

Objectives:
At the conclusion of this activity, the participant will be able to:
- Describe the components of the FLS program
- Explain some of the preoperative, intraoperative, and postoperative considerations fundamental to laparoscopic surgery
- Familiarize themselves with the FLS manual skills tasks and equipment

4. Fundamentals of Endoscopic Surgery (FES)

Coordinators: Thadeus Trus, MD, & Charles Ro, MD
Come get hands-on experience in flexible endoscopy. This station will showcase the newly developed Fundamentals of Endoscopic Surgery (FES) testing platform (the flexible endoscopy equivalent of FLS) - the first hands-on test for gastrointestinal endoscopic skills. FES will be loaded on a Simbionix virtual reality simulator for you to “test drive”. The station will also feature endoscopy training on real tissue using an explant model for mucosal banding, polypectomy, submucosal injection, clipping, and coagulation. Finally, video based education material will be available to view the new SAGES flexible endoscopy hands-on training curriculum and preview the developing FES website.

This is your chance to practice your endoscopic skills with the help of expert proctors, or throw your hat into the ring to pit your skills against others in an FES shootout. The winner of the FES shootout will receive a SAGES Top 14 DVD video set.

Objectives:
At the conclusion of this activity, the participant will be able to:
- Evaluate the FES manual skills testing module
- Assess his/her flexible endoscopy skills

Chair: Brian Jacob, M.D., Co-Chair: Kent Van Sickle, M.D.
2011 Learning Center

- Develop basic endoscopic skills on virtual reality and real tissue simulation platforms.
- Evaluate the SAGES flexible endoscopy hands-on training curriculum

5. Laparoscopic Hernia Techniques

Coordinators: Greg Mancini, MD, Sharon Bachman, MD, and David Earle, MD

The repair of the complex abdominal wall has continued to be a challenge for many specialists, and it remains an option to incorporate the use of laparoscopic techniques to augment outcomes in a number of hernia cases. For instance, to complete the repair of some challenging abdominal wall hernias, the surgeon may choose to employ an endoscopic component separation to release (or separate) the external oblique aponeurosis. Both open and laparoscopic techniques (also known as minimally invasive or “perforator sparing” techniques) are now employed to accomplish this portion of a complex abdominal wall repair, however there is never enough adequate training in this portion of the procedure. At this booth, both instructional video and box trainer hernia modules will allow participants to review the basic steps required to perform a minimally invasive component separation with experts in the field. This station will also have inanimate models that will help to review abdominal wall anatomy and to demonstrate the steps involved in an open hernia repair, laparoscopic ventral hernia repair, as well as a laparoscopic inguinal hernia repair.

Objectives:
At the conclusion of this activity, the participant will be able to:
- Describe the anatomy of the abdominal wall
- Describe learn the steps involved with performing a minimally invasive component separation.
- Practice mesh deployment and securing techniques.

6. Suturing

Coordinators: Zoltan Szabo, PhD & Neal Seymour, MD

Participants receive intense hands-on suturing including intracorporeal techniques with instantaneous feedback. Laparoscopic handling and complex suturing maneuvers will also be demonstrated. Virtual reality suturing simulators will be used to allow “virtual” suturing practice – no suture required, just a fancy videogame with needle driver handles instead of joysticks. Trainees will be able to compare their scores with established expert levels for both types of simulators.

Objectives:
At the conclusion of this activity, the participant will be able to:
- Describe the key steps for intracorporeal suturing and knot-tying.
- Practice intracorporeal suturing and knot-tying in inanimate and virtual reality environments.
- Demonstrate proficiency compared to “experts.”

7. Top Gun

Coordinator: James “Butch” Rosser, MD

The Top Gun Laparoscopic Skill Shootout Station will allow participants to establish and enhance basic laparoscopic skills and suturing ability. All participants can gain skill advancement no matter their baseline. The station will feature the validated “Rosser TOP GUN” skill development stations developed by Dr. Rosser and made famous at Yale. To date, over 6000 surgeons have participated around the world. Instructors will show tactics and techniques that will transfer readily into the clinical environment. In addition, participants will be competing for slots in the Top Gun Shoot Out that will crown one SAGES 2011 TOP GUN.

Objectives:
At the conclusion of this activity, the participant will be able to:
- Review the Rosser suturing algorithm and be able to list and recite
- Perform dexterity skills and suturing exercises using the “Rosser TOP GUN” training stations.
- Compete with other surgeons in the Top Gun Shoot Out (no CME credits will be given for this competition)

8. Laparoscopic Common Bile Duct Exploration

Coordinator: Mark Reiner, MD

At this station, participants will gain exposure to the laparoscopic transcystic method of common bile duct stone management. The station utilizes the latest in inanimate model technology to simulate an actual situation for the management and retrieval of common bile duct stones.

Objectives:
At the conclusion of this activity, the participant will be able to:
- Identify the indications for laparoscopic common bile duct exploration.
- Describe the necessary equipment utilized during laparoscopic transcystic common bile duct exploration including common bile duct access instrumentation, cholecdochoscopy, and stone retrieval methods.

- Work as part of a simulated operating room team to perform laparoscopic transcystic common bile duct exploration.

9. Intraoperative Ultrasound

Coordinator: David Sindram, MD

This station will focus on Intraoperative Ultrasound techniques and applications. Participants will use the latest ultrasound technology with a new inanimate phantom that was developed to mimic the ultrasound properties of abdominal organs. Instructors will demonstrate and help participants perform intraoperative ultrasound for liver, biliary and pancreatic disease, as well as discuss their surgical applications.

Objectives:
At the conclusion of this activity, the participant will be able to:
- Describe basic ultrasonography techniques.
- Describe how ultrasound may be used to diagnose and treat biliary and pancreatic disease.

10. Laparoscopic Sleeve Gastrectomy and other Surgical Weight Loss Techniques

Coordinators: Greg Jossart, MD, Shalu Kothari, MD, and Dan Rosen, MD

The learning curve for gaining proficiency in weight-loss procedures, specifically the sleeve gastrectomy at this station, may be shortened with proper instruction and training. The laparoscopic sleeve (vertical) gastrectomy is growing in popularity, yet the techniques employed vary widely on trocar positioning, stapling techniques, the use of buttress materials, and bougie sizes. At this station, a participant will be able to review a traditional sleeve gastrectomy procedure with an expert, and then get to perform a simulated sleeve gastrectomy in a training box. In addition, the Laparoscopic Adjustable Gastric Band Simulator allows participants to introduce a laparoscopic adjustable band, “run” the tubing, place the band in its correct anatomic position, and fixate the port into the subcutaneous tissue. The technical aspects of laparoscopic adjustable gastric band placement may be enhanced by simulation and allow a greater preprocedural understanding for the trainee and expert alike. A virtual laparoscopic gastric bypass trainer will similarly allow for participants to familiarize themselves with the steps and techniques necessary to perform gastric bypass.
Objectives:
At the conclusion of this activity, the participant will be able to:
• Review laparoscopic adjustable gastric band anatomy, structure, and function.
• Describe the basic steps of placing a laparoscopic adjustable gastric band.
• Explain the steps and techniques necessary to perform laparoscopic gastric bypass surgery.

11. Media Madness
Coordinators: Vadim Sherman, MD & Archana Ramaswamy, MD
This station will highlight some of the new media advancements that SAGES now offers members. Participants will have the opportunity to explore and navigate through some of these new technologies such as:
iMAGES: www.sages.org/image_library
SAGESTV: www.sages.tv
SAGES WIKI: www.sageswiki.org
SAGES PAGES: www.sages.org/sagespages

Objectives:
At the conclusion of this activity, the participant will be able to:
• Upload new images and videos to SAGESTV and iMAGES
• Gain access to the video and images library & have ability to edit and resubmit images
• Create new WIKI pages, edit existing pages, and learn how to search for WIKI pages
• Access SAGES PAGES, create a profile, create groups, access links to the other SAGES sites
• List the benefits these sites offer members

12. Video Editing
Coordinator: Matthew Goede, MD & John Romanelli, MD
The presentation of surgical videos is now an integral component of scientific meetings both for educational reasons, as well as for the demonstration of new techniques. The purpose of this station will be to learn the basic tools needed for capturing video in the operating room, and become familiar with the various software available for video editing on both PC and Mac platforms. Participants will have the opportunity to perform basic video editing of short videos at the station.

Objectives:
At the conclusion of this activity, the participant will be able to:
• Identify basic tools needed to capture video in operating room
• Perform basic video editing of short videos

13. Team Simulations
Coordinator: Shawn Tsuda, MD
Team training through simulation enables safe and efficient performance in the operating theater. Simulation is evolving as an essential part of residency training and continuing surgical education. As with aviation, team training in surgery has been used for crisis management. However, performance measures may exist within technical, cognitive, and behavioral domains that affect cost and compliance as well as safety. This station will feature a mock endosuite that will allow surgeons to plan, execute, debrief, and improve upon best practices during surgery, with a focus on cost-containment, team/patient safety, and quality of care.

Objectives:
At the conclusion of this activity, the participant will be able to:
• Use team-based concepts in optimizing time, compliance, performance, and quality during a common surgical procedure
• Use technology and techniques in team-based training, including video-capture and debriefing
• Generate templates for effective team training for residency programs and continuing education

14. Patient Safety
Coordinator: Gretchen Purcell Jackson, MD, PhD
The last decade has seen increasing emphasis on patient safety and quality of care from government agencies, regulatory bodies, and payers. At this station, participants can explore a variety of topics related to surgical patient safety including proper use of operative instrumentation, informed consent, care-team communications, and avoiding malpractice lawsuits through videos, web-based instructional modules, and interactive instruction.

Objectives:
At the conclusion of this activity, the participant will be able to:
• Identify critical patient safety issues relevant to the practicing surgeon
• Enumerate educational resources for learning about surgical patient safety
• Demonstrate competencies in one or more areas of patient safety
Why Join SAGES?

Surgeons join SAGES because our primary mission is to:

- Provide revolutionary educational programs.
- Support and encourage achievement in endoscopic surgery for the surgeon.
- Promulgate guidelines in standards of practice and training that reflect up-to-date scientific data and surgical thinking.
- Protect the interests of our patients in assuring them access to the BEST operation.
- Keep surgeons aware of innovative technology that will improve the practice of surgery.
- Support innovative endoscopic research.

Surgeons join because SAGES is an unconventional surgical association in the best sense of the word. It is a collegial group in which newcomers are welcomed like long-term members of the “family.” SAGES members “networked” before that word had been invented. If you participate, you are valuable. If you work for the Society, you are invited into its leadership circle. SAGES is inclusive while preserving quality. It is statistically more difficult to have a paper accepted for oral presentation at a SAGES meeting than almost any other group. But new ideas are welcomed. We have a service-oriented staff. When you call with a question, someone answers it or finds the answer or helps you find out where to find the answer. This organization was founded FOR our members, and its primary responsibility is TO our members.

What We’ve Done in a Short Time:

SAGES (The Society of American Gastrointestinal and Endoscopic Surgeons) was founded in 1981 to foster, promote, support, and encourage academic, clinical, and research achievement in gastrointestinal endoscopic surgery. The Society has grown from fewer than 50 original members to more than 6,000 from every state and many countries.

There are many benefits of membership in SAGES, but surgeons do not join just to get discounts for meeting registration or reserve spaces in our basic and advanced resident courses.

SAGES...

- has a representative on the American College of Surgeons Board of Governors.
- is a Nominating Member of the American Board of Surgery.
- holds a seat in the House of Delegates of the A.M.A.
- is the voice for surgery of the future.

For more information about SAGES, or to join the organization, please visit sages.org or contact the membership department at (310) 437-0544, ext. 110.
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<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Thomas Aloia</td>
<td>Assistant Professor of Surgery, UT MD Anderson Cancer Center</td>
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<tr>
<td>Marjorie J. Arca</td>
<td>MD, Milwaukee, WI</td>
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<tr>
<td>John H. Armstrong</td>
<td>MD, Ocala, FL</td>
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<tr>
<td>Maurice E. Arregui</td>
<td>Director of Fellowship in Advanced GI surgery, Laparoscopy</td>
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<tr>
<td>Horacio J. Asbun</td>
<td>MD, Hepato-Biliary and Pancreas Surgery, Mayo Clinic,</td>
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<tr>
<td>Ralph W. Aye</td>
<td>Director, Mayo Clinic Florida, Director, Hepato-Biliary and</td>
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<tr>
<td>Sharon L. Bachman</td>
<td>MD, Assistant Professor of Clinical Surgery, University of</td>
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<tr>
<td>Robert W. Bailey</td>
<td>MD, Clinical Professor of Surgery, Florida International</td>
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<tr>
<td>Katherine A. Barsness</td>
<td>MD, Assistant Professor, Feinberg School of Medicine,</td>
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<tr>
<td>Valerie P. Bauer</td>
<td>MD, Assistant Professor, UTMB Galveston, John Sealy Hospital,</td>
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<td>Reginald Bell</td>
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<td>Ramon Berguer</td>
<td>MD, Clinical Professor of Surgery, University of California</td>
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<td>Chairman of Pathology and Laboratory Medicine, Cleveland</td>
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<td>David B. Boyt</td>
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<td>Matthew Brengman</td>
<td>MD, Professor of Surgery, Washington University School of</td>
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<td>L. Michael Brunt</td>
<td>MD, Professor of Surgery, University of Florida, Shands</td>
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<td>Jo Buyske</td>
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<td>Angel Miguel Caban</td>
<td>MD, Clinical Assistant Professor, University of Florida,</td>
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<td>Alfredo M. Carbonell</td>
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<td>Lily C. Chang</td>
<td>MD, Attending Surgeon, Director Digestive Disease Institute,</td>
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<td>Andrew Chow</td>
<td>Clinical Innovation Fellow, Imperial College London, St Mary's</td>
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<td>W. Y. Chung</td>
<td>Associated professor, Yonsei University College of Medicine,</td>
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<td>Ronald Hanson Clements</td>
<td>MD, Professor of Surgery, Vanderbilt University, Director,</td>
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<td>Peter F. Crookes</td>
<td>MD, Associate Professor of Surgery, University of Southern</td>
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<tr>
<td>Janet Cuddigan</td>
<td>Associate Professor, University of Nebraska Medical Center,</td>
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<tr>
<td>Paul G. Currillo II</td>
<td>MD, Associate Professor &amp; Vice Chairman of Surgery, Drexel</td>
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<tr>
<td>Giovanni Dapi</td>
<td>MD, Assistant Professor of Surgery, Department of Gastrointestinal</td>
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<tr>
<td>Tom R. DeMeester</td>
<td>MD, Professor of Surgery, University of Southern California,</td>
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<tr>
<td>Steven R. DeMeester</td>
<td>MD, Associate Professor, U of So. California, Los Angeles, CA</td>
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<tr>
<td>Daniel J. Deziel</td>
<td>MD, Professor of Surgery, Rush University, Senior Attending</td>
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<td>David W. Easter</td>
<td>MD, Program Director in Surgery, UCSD Medical Center, San</td>
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</table>

**SAGES Invited Faculty List**
SAGES Invited Faculty List

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David Aaron Edelman, MD, Plymouth, MI
Michael B. Edye, MD, Adjunct Associate Professor of Surgery, Mount Sinai School of Med, Attending, The Mount Sinai Hospital, New York, New York, NY
Jonathan E. Efron, MD, Associate Professor, Johns Hopkins University, Chairman of the Ravitch Division, Johns Hopkins Hospital, Owings Mills, MD
David Etzioni, Phoenix, AZ

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<td>Other</td>
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<td>Educational grant from Pfizer</td>
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SAGES 2011 Scientific Session & Postgraduate Course
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SAGES Social Programs

Welcome Reception – First Glimpse of Exhibits!
Date: Wednesday, March 30, 2011
Time: 5:00 - 7:00 PM
Place: Exhibit Hall
Fee: No Fee for Registrants & registered guests
Dress: Business casual

Special promotions, presentations and entertainment. Great food! Ticket and cash bar.
Note: Children under the age of 14 will not be permitted in the Exhibit Hall due to safety considerations.

SAGES Meet the Leadership Reception for New SAGES Members Residents and Fellows
Date: Friday Evening, April 1, 2011
Time: 6:00 - 7:00 PM
Place: Marriott RiverCenter Hotel, Sazo Restaurant
Dress: Casual
This is a ticketed event.

It’s not a Gala! It’s a Classic SAGES Celebration!

Back to FRIDAY! An evening at Sunset Station, with a Grand Ol’ Taste of Texas

Dinner, Sing-Off and Video Shorts
Date: Friday Evening, April 1, 2011
Place: Sunset Station
Time: 7:30 - 11:30 PM
Dress: Western Casual (Jeans and cowboy hats!)
Fee: Included in Registration for SAGES Super Pass (Option A), & registered guests.
Tickets: $110.00 (for additional guests and SAGES Registration Options B & C)
This is a ticketed event.

Buses begin loading at the following hotel lobbies at 7:00 PM:

Marriott RiverCenter
Hilton
Grand Hyatt

The evening will conclude with the SAGES International Sing-Off.

Western wear / attire encouraged for the 2011 SAGES Meeting!
# SAGES Housing Locations

## 2011 SAGES Annual Meeting • March 30 - April 2, 2011

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## Map of San Antonio

- **Main Plaza**: Located in the heart of downtown San Antonio, this plaza is a popular gathering spot and features numerous attractions.
- **River Walk Area**: A scenic walkway along the San Antonio River, offering a variety of shops, restaurants, and cultural attractions.
- **Hemisfair Park**: A large public park featuring a variety of attractions, including the Tower of the Americas.
- **King William Historic District**: A historic neighborhood known for its well-preserved 19th-century homes and distinctive architecture.

### Hotel Codes
- **MRC**: Marriott Rivercenter
- **GRH**: Grand Hyatt
- **HPR**: Hilton Palacio del Rio
- **LQC**: La Quinta Inn & Suites Convention Center
- **QGC**: Henry B. Gonzalez Convention Center
SAGES 2012
scientific session & postgraduate courses
March 7 - 10, 2012
San Diego, CA

Program Chair: Daniel Jones, MD
Program Co-Chair: Daniel Scott, MD

www.sages.org
Society of American Gastrointestinal and Endoscopic Surgeons

Registration & program information will be available Fall, 2011
**S001**

**SYMPTOM RESOLUTION AFTER TRANSORTAL INCISIONLESS FUNDOPLICATION IN PATIENTS WITH PROVEN GASTROESOPHAGEAL REFUX** David J Darquis, DO, Matthew S Ralph, DO Allegen Surgical Associates, Allegen, Michigan

**INTRODUCTION:** Transoral incisionless fundoplication (TIF) using EsophyX offers a less invasive alternative to laparoscopic fundoplication. A retrospective community-based study investigated safety, symptom resolution, patient satisfaction, and medication use after TIF.

**METHODS:** Forty-one patients underwent TIF between April 2009 and June 2010 because they had GERD symptoms persistent on antacid therapy and gastroesophageal reflux proven by pH-metry or reflux esophagitis. Follow-up assessment consisted of typical and atypical symptom evaluation using three GERD-specific, validated questionnaires [GERD Health-related Quality of Life (HRQL), GERD Symptom Score (GERSS), Reflux Symptom Index (RSI)]. Symptoms were considered eliminated if individual scores were between 0 (none) to 2 (rare). Normalization rates were calculated for patients with abnormal scores at baseline.

**RESULTS:** At baseline all 41 treated patients (68% female, median age 58 (range 25-80) years, mean BMI 32 (18-44) kg/m2) were taking proton pump inhibitors (PPIs), and 88% (36/41) of them continued to have moderate to severe typical and atypical symptoms despite medical therapy. Gastroesophageal reflux was proven by abnormal pH findings in 92% (34/37) of patients or the presence of esophagitis in 46% (19/41) of patients. All patients had an incompetent gastroesophageal junction. Hiatal hernia was diagnosed in 34 patients and repaired laparoscopically in 4 before TIF. The TIF procedure reduced hiatal hernia and created a 270 (180-310) degree wrap reaching 3 (2-4) cm above the z-line and restored the gastroesophageal junction to Hill grade I. There were two cases of post-operative pleural effusion, which were treated conservatively with antibiotics and resolved within two weeks. At a median 7 (3-16) month follow-up, 79% (15/19) of patients were completely off PPIs, and 68% (13/19) were satisfied, 26% neutral (5/19) and 5% dissatisfied (1/19) with their current health status. Regurgitation present before TIF was reduced [median RSI scores 2 (0-15) vs. 16 (4-42) pre-TIF, P<0.001] and indicated heartburn elimination in 84% (16/19) of patients. Regurgitation present before TIF was eliminated in 89% (17/19) patients [median scores 0 (0-18) vs. 14 (0-30) pre-TIF, P<0.001]. Atypical symptoms were significantly reduced [median RSI scores 2 (0-15) vs. 16 (4-42) pre-TIF, P<0.001] and normalized in 79% (15/19) of patients. The effectiveness of TIF in eliminating typical and atypical symptoms was further supported by a significant reduction in GERSS scores [median GERSS scores of 1 (0-23) vs. 29 (8-54) pre-TIF, P<0.001] and their normalization in 68% (13/19) of patients.

**CONCLUSION:** The preliminary results at median 7-month follow-up support the safety of TIF and its effectiveness in alleviating typical and atypical GERD symptoms and eliminating completely the need for medication in 79% of patients. A longer-term objective assessment using pH testing is underway.

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**S002**

**COMPREHENSIVE EVALUATION OF AN ENDOSCOPIC FUNDOPLICATION USING THE ESOPHYX DEVICE** Rebecca P Petersen, MD, MS, Laura Filippa, MD, Eelco B Wassenaar, MD PhD, Ana V Martin, MD, Roger Tatum, MD, Brant K Oelschlager, MD University of Washington Medical Center

**Introduction:** There are limited studies that evaluate the efficacy of an endoscopic fundoplication (EF) for GERD with EsophyX™ device, especially with the most recent procedural iteration (TIF-2). This study is a prospective evaluation of our early experience with this device and procedure.

**Methods:** Data were collected prospectively on 23 consecutive patients undergoing EF between March 2009 and August 2010. All patients completed a symptom questionnaire assessing frequency and severity of GI & respiratory symptoms, 24 hr pH and manometry studies preoperatively and were encouraged to repeat these at 6 months.

**Results:** All patients had an abnormal pH study and were on PPI therapy prior to EF. The mean age was 47±11 and 6 (27%) were male. Nine (41%) patients had a BMI>30, and three had a small hiatal hernia (<2 cm) detected on endoscopy. The procedure was aborted in 2 patients for retained food, though subsequently successful in one. EF was incomplete in 2 patients due to difficulty with maintenance of insufflation. The median LOS was 1 day and there were no major perioperative complications. To date, 6 month follow-up is complete in 9 patients (Table 1). One patient, who had an incomplete EF, has undergone a subsequent Nissen fundoplication secondary to persistent GERD.

**Conclusion:** EF with EsophyX™ is associated with a significant reduction in heartburn and abnormal acid exposure at 6 months, although many patients ultimately resume PPI therapy. The procedure has an acceptable safety profile, but further study is necessary to determine its place in the treatment of GERD.

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**S003**

**EARLY EXPERIENCE WITH LAPAROSCOPIC NISSEN FUNDOPLICATION FOR RECURRENT GERD AFTER TRANSORTAL INCISIONLESS FUNDOPLICATION** Kyle A Perry, MD, Jeffery L Eakin, MD, John G Linn, MD, Raymond P Onders, MD, VC Velanovich, MD, W. Scott Melvin, MD Center for Minimally Invasive Surgery, Department of Surgery, The Ohio State University Hospitals Case Medical Center, Cleveland, OH; Division of General Surgery, Henry Ford Hospital, Detroit, MI

**INTRODUCTION:** Transoral incisionless fundoplication (TIF) has been employed for endoscopic treatment of gastroesophageal reflux disease. Full thickness polypropylene H-fasteners create a serosa to serosa gastroesophageal plication. A certain subset of TIF patients will require subsequent antireflux surgery to achieve adequate reflux control, and it is unknown whether this procedure increases the technical difficulty of laparoscopic Nissen fundoplication for recurrent GERD. The aim of this study was to evaluate the initial North American experience performing laparoscopic Nissen fundoplication following failed TIF procedure.

**METHODS:** Between 2008 and 2010, patients demonstrating objective evidence of recurrent gastroesophageal reflux following TIF using the EsophyX device (Endogastric Solutions Inc., Redmond, WA) underwent laparoscopic Nissen fundoplication. The study endpoints included operative time, operative blood loss, gastric or esophageal perforation, and length of hospital stay. All data are presented as median (range).

**RESULTS:** A total of 7 patients underwent laparoscopic Nissen fundoplication for recurrent GERD at a median interval of 7.0 (3-28) months after TIF. Revisional fundoplication required 97 (48-122) minutes and was performed in all cases with minimal blood loss. There were no cases of esophageal or gastric perforation during the dissection of the previous fundoplication.
A significant hiatal hernia was noted during one case, and all others revealed partially disrupted gastroesophageal fundoplications with visible prolene H-fasteners visible. All patients were discharged from the hospital on the first postoperative day.

**CONCLUSION:** Severe recurrent gastroesophageal reflux necessitating laparoscopic Nissen fundoplication occurs in a subset of patients following TIF. In this series, previous TIF did not result in prolonged operative times, significant operative hemorrhage, oriatrogenic hollow viscus injury. These data suggest that laparoscopic Nissen fundoplication can be safely performed in this patient population without increased operative morbidity.

**S004**

**LONG-TERM OUTCOMES AFTER TRANSORAL INCISIONLESS FUNDOPPLICATION IN PATIENTS WITH GERD AND LPR SYMPTOMS**

Karim S Trad, MD, Daniel S Turgeon, MD Reston Hospital Center, Reston, Virginia

**OBJECTIVE:** A retrospective study evaluated safety, symptom resolution, patient satisfaction and medication use after one to two years following transoral incisionless fundoplication (TIF) in patients with GERD and laryngopharyngeal (LPR) symptoms.

**METHODS AND PROCEDURES:** Thirty-eight patients underwent TIF using Esophyx at our community-based hospital because they had persistent GERD and/or LPR symptoms, which were not controlled or only partially controlled on antisecretory medications, and were either dissatisfied with their current therapy or not willing to continue taking medication. The preoperative evaluation followed our routine protocol for surgical fundoplication patients and consisted of a complete history and physical, symptom assessment and gastroesophageal reflux evaluation by endoscopy, barium swallow, and manometry. Reflux measurement by pH testing was performed, if clinically required. The TIF procedure was considered appropriate as an alternative to laparoscopic fundoplication when the axial height of the hiatal hernia was ≤2 cm. Follow-up assessment consisted of symptom evaluation using three GERD-specific, validated questionnaires and was completed in 20 patients.

**RESULTS:** Median age was 59 (range 25-77) years, BMI was 25 (21-36) kg/m2, and 50% were female. All patients had documented chronic GERD for a median 5 (1-15) years and refractory symptoms to proton pump inhibitors (PPIs). Hiatal hernia was present in 60% (12/20) of patients, and 20% (6/30) had erosive esophagitis (LA grade A or B). TIF was performed following a standardized TIF2 protocol and resulted in reducing hiatal hernia and restoring the natural anatomy of the GE junction (Hill grade I). There were no post-operative complications. At a median 14-month follow-up 85% (17/20) of patients were off daily PPIs (65% completely off PPIs), and 50% were female. All patients had documented chronic GERD for a median 5 (1-15) years and refractory symptoms to proton pump inhibitors (PPIs), and 65% (13/20) were satisfied with their current health condition compared to 0% before TIF. Median GERD Health-related Quality of Life scores were significantly improved (reduced) to 6 (0-25) from 27 (0-45) before TIF (P < 0.001). Heartburn was eliminated in 68% (13/19) of patients and regurgitation in 80% (12/15). Atypical LPR symptoms such as hoarseness, coughing, and throat clearing were eliminated in 58% (11/19) of patients as measured by Reflux Symptom Index scores, which were significantly reduced to 4 (0-22) from 16 (3-42) pre-TIF (P < 0.001). High incidence of typical and atypical symptom resolution was also supported by GERD Symptom Scores [5 (0-25) vs. 2 (9-60) pre-TIF, P < 0.001].

**CONCLUSION:** Our preliminary outcomes are encouraging and document long-term symptomatic improvement of GERD and LPR symptoms following TIF and elimination of daily medication in 85% of patients.
approach (LC vs OC) and risk-adjusted overall mortality, overall morbidity, serious morbidity and wound complications. The relationship between operative approach, operative duration and length of stay were also examined.

Results: We identified a total of 7629 patients that underwent colon resection for symptomatic diverticulosis. For comparative analysis, they were sub-divided into two groups – Open colectomy (OC, n = 3,870 (50.7%)) and laparoscopic colectomy (LC, n = 3759 (49.3%)). Patients who underwent OC were significantly older (59.0 vs 55.7 yrs, p < 0.0001) with more comorbidities compared to those who underwent LC. After risk adjusted analysis it was noted that the patients treated with LC were less likely to experience overall mortality (11.9% vs 23.2%), serious morbidity (4.6% vs 10.9%) and wound complications (9.1% vs 17.5%), but not mortality (0.3% vs 0.8%). Operative duration was significantly longer with LC (176.64 vs 166.70 mins, p < 0.0001) but the length of stay was significantly shorter (4.77 vs 7.68 days, p < 0.0001). On logistic regression analysis, patients that had history of peripheral vascular disease, percutaneous coronary interventions, current steroid use, and hypertension requiring medication, were at an increased risk of morbidity and mortality within 30 days. Patients that had history of chronic obstructive pulmonary disease and smoking experienced more wound complications by 30 days.

Conclusion: In elective setting, for symptomatic diverticulosis, LC appeared to be associated with lower morbidity and complications when compared to OC. However, no difference in mortality was noted between these two procedures.

S007
LAPAROSCOPIC APPROACH IN COMPLICATED DIVERTICULAR DISEASE Alejandro Canelas, MD, Esteban Grzona, MD, Emmanuel Sadava, MD, Maximiliano Bun, MD, Mariano Laporte, MD, Nicolás Rotholtz, MD Colorcetal Section. Hospital Alemán. Buenos Aires - Argentina.

INTRODUCTION: Studies have shown clear benefits of the use of laparoscopic colectomy in diverticulitis disease. However, this is not defined in patients with complicated disease. The aim of this paper is to analyze the results of laparoscopic colectomy in complicated diverticular disease and secondarily to determine feasibility of emergency laparoscopic sigmoid colectomy in patients Hinchey III / IV.

METHODS AND PROCEDURES: Patients who underwent laparoscopic colectomy for diverticular disease between July 2000 to June 2010 were included. The series was divided into two groups. G1: patients with complicated disease (abssesx, perforation, fistula, or stenosis), and G2: patients undergoing surgery for recurrent diverticulitis. Univariate analysis was made between the two groups. Furthermore sigmoidectomies without ostomy in Hinchey III / IV (G1A) versus other complicated diverticular (G1B) were compared.

RESULTS: 205 patients were included; G1: 56 (27%) and G2: 149 (73%). G1 consists of: 8 (14%) pericolonic abscesses or severe inflammatory sequelae, 12 (21%) Hinchey II, 16 (29%) Hinchey III / IV, 12 (22%) Fistulas (9 colovesical / 3 colocutaneous), 8 (14%) stenosis. Procedures performed in G1 were: 49 (87%) sigmoidectomies; 5 (9%) with proximal ileostomy and 2 (4%) Hartmann’s procedures. Patients in G2 presented more previous episodes of diverticulitis (G1: 1.5 +/- 1.4 vs. G2: 2.6 +/- 1.3, p < 0.05). G1 had longer operating time G1 (203 +/- 66 vs. G2: 159 +/- 58 minutes, p <0.05) and higher conversion rate [G1: 11/56 (20%) vs. G2: 5/149 (3.3 %), p <0.05]. There were no differences in complications. G1 had longer hospital stay (G1: 4.7 +/- 3.1 vs. G2: 3 +/- 1.8 days, p <0.05) and more postoperative complications [G1: 14/56 (25%) vs. G2: 18/149 (12%), p = 0.04], but there were no differences in major complications.

Comparing G1A (n = 10) vs. G1B (n = 39) vs. G2 (n = 149) G1B had longer operative time (G1A: 159 +/- 35 vs. G1B: 205 +/- 65 vs. G2: 159 +/- 58 minutes, p <0.05). There were no differences in intraoperative complications between the groups. G1 showed higher conversion rate [G1A: 0/10 (0%) vs. G1B: 11/39 (28.2%) vs. G2: 5/149 (3.3%), p < 0.05] and increased hospital stay (G1A: 5.1 +/- 4.1 vs. G1B: 4.1 +/- 2.2 vs. G2: 3 +/- 1.8 days, p <0.05). No differences in postoperative complications were identified.

CONCLUSION: The laparoscopic approach in complicated diverticular disease is safe. Laparoscopic sigmoid resection without ostomy in Hinchey III / IV is feasible with acceptable results.

S008
SINGLE-INCISION VERSUS CONVENTIONAL LAPAROSCOPIC COLECTOMY: A CASE-MATCHED SERIES Diego I Ramos-Valadez, MD, Javier Nieto, MD, Madhu Ragupathi, MD, Chirag B Patel, PhD MSE, T. Bartley Pickron, MD, Eric M Haas, MD FACS FACSRS Division of Minimally Invasive Elective Surgery, Department of Surgery, University of Texas Medical School at Houston, Houston, Texas.

Introduction: Single-incision laparoscopic surgery is an emerging modality that has proven to be feasible in case reports and series involving colon resection. We report the efficacy and safety of single-incision laparoscopic colectomy (SILC) through a matched-case comparison with conventional laparoscopic colectomy (CLC) for the treatment of sigmoid colon disease.

Methods: Between July 2009 and September 2010, 77 consecutive laparoscopic single incision colectomies were performed for benign and malignant diseases. A cohort of 20 patients who underwent sigmoid resection were case-matched to a cohort of patients who underwent conventional laparoscopic sigmoid colectomy based on four matching criteria. Demographic data, intraoperative parameters, and postoperative outcomes were assessed. All cases were performed with IRB approval by one of two board-certified colorectal surgeons (T.B.P. and E.M.H.). Student’s t-test was used for continuous variables and chi-square analysis was used for categorical parameters.

Results: Twenty SILC and 20 CLC cases were paired together based on four matching criteria: gender (p<1.0), age (p<0.47), pathology (p<1.0), and surgical procedure (p<1.0). Ten patients (50%) in the SILC group and eight patients (40%) in the CLC group had prior abdominal surgery (p<0.53). In the SILC group, the mean incision length was 3.3±0.8 cm. Whereas one incision was made for SILC procedures, four incisions were made for CLC procedures (one extraction site and three trocar sites). The mean operating time and intraoperative complication rate did not significantly differ between the groups. The EBL was significantly reduced in the SILC group compared to the CLC group (p<0.007). There were no conversions to open surgery and one SILC procedure (5%) required conversion to CLC (p<0.31). There were a total of 2 complications in each group (ileus x2, sepsis and hematoma). The mean length of stay for the SILC and CLC groups was 3.2±1.0 and 3.8±2.1 days, respectively (p<0.25) with no readmissions or re-operative interventions. In the subset of patients with malignant disease, there was no significant difference in lymph node extraction rate (p<0.68).

Conclusion: When compared with standard laparoscopic approach, the single-incision technique did not result in longer operative times, intraoperative complication or conversion rate. This technique avoids multiple trocar sites, can be safely offered to those patients with prior abdominal surgery, and maintains a short hospital length of stay and low complication rate. Prospective series will analyze additional short-term outcomes and cost.
INTRODUCTION: The surgical treatment of choice in patients with ulcerative colitis (UC) is the restorative proctocolectomy with ileo-anal J pouch. This surgery is performed laparoscopically with excellent results. In patients with severe disease or deteriorate clinical conditions, surgery should be done in 3 steps, performing primarily a subtotal colectomy. In these circumstances the laparoscopic approach is debatable. The aim of this paper is to evaluate the feasibility and results of laparoscopic subtotal colectomy in patients with severe UC or poor clinical condition.

METHODS AND PROCEDURES: A retrospective analyses from a prospective database was made from all patients who underwent laparoscopic subtotal colectomy for severe UC or poor clinical condition between August 2003 to July 2010. To categorize the disease activity the Truelove and Witts index as disease activity was used.

RESULTS: In the study period 58 patients were operated for UC. Thirty two (55%) of those required 3 steps: 24 (75%) for severe UC or poor clinical condition is feasible and safe.

CONCLUSION: The laparoscopic approach in patients with severe UC or poor clinical condition is feasible and safe.
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S012
HIATAL HERNIA REPAIR WITH BIOLOGIC MESH REINFORCEMENT REDUCES RECURRENCE RATE IN SMALL HIATAL HERNIAS
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Introduction: The use of biological mesh for crural reinforcement during hiatal herniorrhaphy has been shown to decrease recurrence rates in patients with hiatal hernia greater than 5cm. However, there remains some controversy as to the benefit of crural reinforcement in smaller hernias. Our current practice is to employ the use of absorbable mesh in all hiatal hernia repairs. This study compares the results of those patients in our database with small hiatal hernias (1 to 5 cm) who had absorbable mesh implanted at the hiatus versus those who had suture cruroplasty repair.

Methods: A single-institution retrospective review was performed between 2002 and 2009. All patients with hiatal hernia measuring 1 to 5 cm seen on barium swallow and/or esophagastroduodenoscopy (EGD) were included in the study. These patients were then evaluated based on surgical repair: one group had crural reinforcement with biologic or synthetic absorbable mesh and the other group had suture cruroplasty only. All patients underwent a standardized hiatal hernia repair with complete excision of the sac, mediastinal dissection to attain 2-3 cm of intrabdominal esophagus, suture cruroplasty with or without U shaped absorbable mesh overlay and gastric fundoplication. The patients were followed with a postoperative symptom questionnaire at 1, 6 and 12 months. All patients had follow up barium swallow and/or EGD at 12 months.

Results: 70 patients with a hiatal hernia measuring 1 to 5 cm were identified. 39 patients had a hernia repair with absorbable mesh and 31 patients had hiatal herniorrhaphy with suture cruroplasty only. All patients had at least 12 months of follow up. Recurrence rate at one year was 16% (5/31) in patients who had suture cruroplasty only. Recurrence rate at one year was 0% (0/39) in patients who had crural reinforcement with absorbable mesh, which was a statistically significant difference (p=0.014).

Conclusions: Small hiatal hernias repaired without mesh recur at a significant rate. Suture cruroplasty alone appears to be inadequate for hiatal hernias measuring 1 to 5cm. Crural reinforcement with absorbable mesh significantly reduces hiatal hernia recurrence rate in small hiatal hernias. We recommend that all hiatal hernias, regardless of size, should be repaired with absorbable mesh reinforcement.
S014
THE ROLE OF SHORT- LIMB ROUX-EN-Y RECONSTRUCTION FOR FAILED ANTI-REFLUX SURGERY: A SINGLE CENTER 5-YEAR EXPERIENCE
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Introduction: The aim of our study is to demonstrate the safety and efficacy of short-limb Roux-en-Y (SLRNY) reconstruction for failed anti-reflux procedures.

Methods: Prospectively collected data was retrospectively analyzed for morbidity, mortality, pre- and post-procedure symptom scores (scale 0-3) and BMI, along with patient satisfaction (scale 1-10).

Results: 72 patients with one to four (mean 1.45) previous anti-reflux procedures underwent SLRNY reconstruction either to gastric pouch (n=64) or to the esophagus (n=8). There were 37 laparoscopic, 24 open abdominal and 2 combined thoracic and abdominal procedures. Nine additional patients underwent conversion from laparoscopy to open surgery. There were 43 complications in 19 (26%) patients with no in-hospital or 30-day mortality.

A mean follow-up of 22 months (range 6- 60) was available in 56 (78%) patients. There was significant decrease in mean symptom scores for heartburn (1.61 to 0.57, p<0.0001), regurgitation (1.16 to 0.48, p=0.001), and dysphagia (1.34 to 0.75, p=0.009). Reduction in reported chest pain (0.77 to 0.48, p=0.14) was not significant. There was an increase in reported nausea (0.16 to 0.75, p=0.0002). Bothorsome diarrhea and constipation was reported by 4 (7.4%) patients each. There have been 5 long term complications attributable to reconstruction noted in 3 patients (3 internal hernias, one marginal ulcer perforation and one gastric remnant perforation). Mean post-operative BMI was 25.1 (18.1 to 36.8) compared to pre-operative BMI of 31 (19.1 – 49.3). Mean reported satisfaction score was 8.1.

Conclusions: SLRNY reconstruction is a safe and effective remedial procedure for a subset of patients with failed anti-reflux surgery.

S016
PEPSIN DETECTION IN PATIENTS WITH LARYNGOPHARYNGEAL REFLUX BEFORE AND AFTER FUNDOPLICATION
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Background: Laryngopharyngeal reflux (LPR) is an extreme manifestation of gastroesophageal reflux disease that can lead to substantial airway damage. No single diagnostic test can accurately determine its presence. We hypothesized that the presence of pepsin (which originates in the stomach) in the epithelium of the larynx and potentially in sputum may provide the diagnostic accuracy that is needed to guide therapy.

Methods: Ten patients with clinical LPR, undergoing fundoplication were enrolled in this pilot study. Pre-operative laryngoscopy, laryngeal epithelial biopsy and/or sputum analysis, 24-hr pH monitoring, and a standardized questionnaire about symptoms were completed. The same testing was performed 6 months post-fundoplication. Pepsin content was measured by Western blot analysis.

Results: The primary presenting LPR symptom was hoarseness in 7, cough in 2 and globus in 1 patient. Pepsin was detected in 8 of the 10 patients pre-operatively. There was correlation between biopsy and sputum (+/+) or (-/-) in 4 of 5 patients who had both analyzed pre-operatively. Nine patients were available for follow-up. Post-operative pH monitoring improved in all patients and normalized in 5 of 8 patients studied. Eight of 9 patients had improvement of their primary LPR symptom (6 good and 2 mild). Only one patient (who had negative pre-operative pepsin) reported no response to treatment of her primary LPR symptom. Post-operatively pepsin was detected in only 1 patient, though it was substantially decreased compared with the pre-operative value.

Conclusion: Our study shows that pepsin is found consistently in the laryngeal epithelial biopsy and sputum of patients with pH-proven GERD and symptoms of LPR. In such patients, a fundoplication results in the clearance of pepsin from the upper airway and corresponds to clinical improvement. Detection of pepsin may have value in the diagnostic armamentarium of LPR. A larger clinical trial is needed to further delineate its predictive value.
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**S017**

**TOUPET FUNDOPLICATION WITH LAPAROSCOPIC HELLER MYOTOMY IS ASSOCIATED WITH MORE POSTOPERATIVE DYSPHAGIA**

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**INTRODUCTION**

Laparoscopic Heller myotomy (LHM) is the treatment of choice for achalasia. Its efficacy is largely defined by subjective outcome measures, with the majority of patients reporting good to excellent short and long term symptom improvement. However, 10 to 20% of patients experience postoperative symptoms of reflux or recurrent dysphagia on long-term follow-up. The aim of this study is to evaluate the efficacy of LHM with or without fundoplication at our institution by determining the incidence of patients requiring endoscopic intervention for postoperative reflux or recurrent dysphagia.

**METHODS**

A retrospective analysis of all patients treated for achalasia with LHM +/- fundoplication at a tertiary care center from 1996 to 2010 was performed. Main outcome measures include patient demographics, operative variables, postoperative symptoms, and postoperative endoscopic interventions.

**RESULTS**

During the study period, 116 patients (62 men, 54 women) with achalasia underwent LHM +/- fundoplication. The mean age was 56 years (range 16-80). All LHM were completed laparoscopically and an anti-reflux procedure was performed at the discretion of the surgeon. Of the 116 operations performed, 43.1% were LHM alone (n=50), 46.6% were LHM with Toupet fundoplication (n=54), and 10.4% were LHM with Dor fundoplication (n=12). The mean operative time was 175.9 minutes (range 118-376). The mean LOS was 2 days (range 1-5). Fifteen minor complications occurred within 30 days and were classified as Grade 1 (n=12) and Grade 2 (n=3). There were no mortalities.

Follow up data was available for 110/116 patients (94.8%). Of these patients, 23 (20.9%) reported new-onset postoperative reflux and were managed as follows: 4 patients underwent diagnostic esophagastroduodenoscopy (EGD), 18 were managed medically, and 1 was not treated. Recurrent dysphagia was reported by 18 patients (16.4%) after surgery. Of these, 16 underwent endoscopic intervention: 9 patients underwent dilation, 4 underwent dilation with botox injection, 2 underwent botox injection alone, and 1 patient had a diagnostic EGD. Two patients were not treated. The average time from surgery to symptom development was 4.4 years (range 0.1-11.7). Patients underwent an average of 2.4 endoscopies postoperatively (range 1-8). Overall, 18.2% (20/110) of our study population required one or more endoscopic interventions for new-onset reflux or recurrent dysphagia after LHM +/- fundoplication.

There was a significant association between the operative procedure performed and the need for postoperative endoscopic intervention. The majority of patients (80%) requiring postoperative endoscopic intervention had undergone LHM with Toupet fundoplication, p<0.001 (Chi-square analysis). Conversely, significantly more patients developed reflux after LHM alone versus LHM with Toupet fundoplication (52% vs. 34.8%), p=0.007 (Chi-square analysis).

**CONCLUSION**

Laparoscopic Heller myotomy with Toupet fundoplication provides better reflux control postoperatively compared to Laparoscopic Heller myotomy alone, but this reflux control comes at a cost of significantly more postoperative dysphagia.

**S018**

**DOES INTRA-OPERATIVE PERFORATION IMPACT OUTCOMES OF HELLER MYOTOMY FOR ACHALASIA?**

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**INTRODUCTION**

Laparoscopic Heller myotomy with partial fundoplication is a highly effective treatment for achalasia, however it carries a risk of mucosal injury. The natural tendency is to either stop or proceed tentatively with the myotomy if a mucosal perforation occurs, potentially resulting in less effective surgical palliation of dysphagia. The objective of our study is to compare the short and long-term outcomes in patients with intraoperative esophageal perforation to those patients without this complication.

**METHODS AND PROCEDURES**

A retrospective review was performed on a prospectively entered database for all patients who underwent primary Heller myotomy and anterior fundoplication for achalasia between 1999 and 2010 at a single institution. Demographic, pre-surgical treatment, peri-operative outcomes (operative time, complications, length of stay), and post-operative symptom scores (dysphagia - 0 best: 5 worse) were compared between patients with (Perf) and without (NoPerf) mucosal perforation. For Perf patients, we employed a strategy of completing the myotomy even if extension of the mucosal injury was required to do so. Wilcoxon Signed Rank and Mann-Whitney U tests determined significance (*p<0.05). Data is presented as median with range.

**RESULTS**

121 patients underwent Heller myotomy and Dor fundoplication for achalasia. The median age was 47 (20-84) and symptom duration was 3 years (0.5-20). Intra-operative mucosal perforation was identified in 7 (5.8%) and was repaired primarily by laparoscopy (6/7) or laparotomy (1/7). No patient had delayed perforation, developed intra-abdominal abscess, or required reoperation. Twelve patients (9.9%) had prior endoscopic interventions (botulinum toxin = 5, pneumatic dilatation = 9). Two of 12 (16.7%) with prior intervention had perforation, while 5 of 109 (4.6%) without prior intervention had perforation; this was not statistically different. Preoperatively, the dysphagia score was Perf=3 (2-5);NoPerf=4 (1-5)NS. The length of the myotomy was Perf=7cm (6-8);NoPerf=7cm (4.5-11)NS, and patients stayed in the hospital for Perf=3 days (1-13);NoPerf=1 day (1-5)NS. The operative time was longer in the Perf group (140 vs. 120 minutes*). For all patients, the preoperative dysphagia score decreased dramatically as early as 6 weeks postoperatively [1 (0-3)*] and remained at that level at 12 months [0 (0-5)*]. Between the Perf and NoPerf groups, the dysphagia scores at 6 weeks [0 (0-3) vs. 0 (0-3)], 3 months [0 (0-1) vs. 0 (0-4)], 6 months [1 (0-2) vs. 0 (0-4)], and 1 year [1 (0-4) vs. 0 (0-5)] postoperatively were not significantly different.

**CONCLUSION**

Esophageal perforations may occur at the time of Heller myotomy, but do not seem to impact surgical outcomes. By ensuring an adequate myotomy distal to the injury, accompanied with primary suture repair of the perforation and Dor fundoplication, we have avoided complications and provided our patients with excellent control of their dysphagia.

**S019**

**QUALITY OF LIFE OUTCOMES AFTER HELLER MYOTOMY FOR ACHALASIA COMPARING DOR AND TOUPEF FUNDOPLICATIONS**

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**Background**

Laparoscopic Heller cardiomyotomy (LHC) has become the gold standard therapy for achalasia. Traditionally, an antireflux procedure has accompanied the myotomy. This study
was undertaken to compare the outcomes between patients undergoing a myotomy with Toupet fundoplication vs. those undergoing a myotomy with Dor fundoplication. In addition, we investigated the overall patient satisfaction after LHC in the treatment of achalasia.

Methods: 185 patients who underwent LHC between 1998 and 2010 were studied by telephone survey. Patient study design and data collection were approved by the Institutional Review Board of Penn State Hershey Medical Center. Symptoms queried included dysphagia, heartburn, and bloating utilizing the GERD-HRQL and a secondary GERD/dysphagia scale. Overall satisfaction after surgery as compared to before the myotomy was also rated. Data were compared based on type of fundoplication, Dor or Toupet. Symptom scores after myotomy were analyzed utilizing a Student t test and Fisher’s exact test.

Results
25 patients completed the ongoing survey (13.5%). There were no perioperative deaths or reoperations. One patient required conversion from laparoscopic to open procedure. Mean length of stay was 2.8 days. Mean operative time for all LHC with fundoplication was 135.9 minutes. Mean operative time for LHC with Toupet fundoplication was 136.5 ± (30.91) minutes and LHC with Dor fundoplication was 128.9 ± (32.44) minutes. There was no statistical difference in operative time for Toupet vs. Dor fundoplication (p=0.379). There was no difference between Dor and Toupet fundoplication with respect to incidence and severity of postoperative heartburn, dysphagia, and bloating based on analysis using a Student t-test. Overall satisfaction for Toupet was 94.4 % and 100% (p>0.999) for Dor fundoplication.

Conclusion: LHC with Toupet or Dor fundoplication has excellent patient satisfaction. Post-operative symptoms of heartburn and dysphagia were equivalent when comparing LHC with both antireflux procedures. The Dor and Toupet fundoplication were found to have equivalent outcomes, however, we prefer the Dor over the Toupet due to its decreased need for extensive dissection. This may result in decreased operative times. As we accrue more patient responses, we may find more statistical differences between the two populations.

S020
TRANSCERVICAL VIDEOSCOPIC ESOPHAGEAL DISSECTION DURING TWO-FIELD MINIMALLY INVASIVE ESOPHAGECTOMY — EARLY PATIENT EXPERIENCE
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Introduction: Transhiatal esophagectomy (THE) reduces cardio-pulmonary complications by avoiding thoracic access, but requires some degree of blind mediastinal dissection. The authors developed a technique of Minimally Invasive Esophagectomy (MIE) using single-incision technology through the cervical incision to allow complete visualization during extrathoracic esophageal dissection. The operation is performed using laparoscopy and simultaneous transcervical videoscopic esophageal dissection (TVED). Our aim was to demonstrate the feasibility of two-field MIE with TVED for high-graide dysplasia and early esophageal cancer, or to improve the recovery of high-risk patients with severe comorbidities.

Methods and Procedures: We performed a retrospective cohort study (IRB 10-005473) to review the intraoperative and perioperative outcomes of eight patients undergoing a two-field MIE with TVED between November 2009 and August 2010. There were six males and two females with a median age of 67 years (range 45-77). Median BMI was 30.2 (range 22.8-37.9). Based on preoperative staging, two patients had high-grade dysplasia, five had early-stage adenocarcinoma, and one had received neoadjuvant cheemo-radiation. Using an established stratification system for preoperative comorbidity, we identified three patients as low risk and five as high risk for postoperative complications.

The TVED technique was performed by deploying a modified single-incision laparoscopy access device in the left neck incision. The mediastinal esophagus was dissected circumferentially in antegrade fashion. Simultaneously, the transabdominal laparoscopic approach was used for creation of the gastric conduit and distal esophageal dissection. Postoperative patient care was part of a standardized protocol.

Results: Esophageal dissection was completed using TVED in all patients. The mean operative time was 292 minutes (range 194-375). Two patients with prior foregut surgery had longer operative times than those without prior foregut surgery (mean 349 vs. 273 minutes). In three obese patients, abdominal desufflation was required to avoid extrinsic mediastinal compression, therefore the mediastinal dissection could not be completely performed simultaneously. Median estimated blood loss was 63 mL (range 25-400). A median of 23 lymph nodes (range 13-29) was harvested.

The median ICU stay was 1 day (range 1-5), and the median length of hospital stay was 7 days (range 5-16). Among the three patients stratified as low risk, there were no major complications. Among the five high-risk patients, three had major complications, including two with cervical anastomotic leaks. Major complications were seen in three of the four obese patients (BMI > 30), and in only one of four non-obese patients. No patients required tube thoracostomy, and there were no deaths.

Conclusions: The TVED approach to MIE may avoid the potential morbidity of transthoracic techniques of esophageal dissection, while decreasing operative time, and improving visualization of the mediastinal esophagus when compared to current transhiatal and blunt cervical approaches. Complications with the TVED approach appear to correlate with obesity and increased comorbidity. Although TVED appears to be a feasible technique, a larger experience is required.

S021
LAPAROSCOPIC COLECTOMY SIGNIFICANTLY DECREASES LENGTH OF STAY WHEN COMPARED TO OPEN OPERATION
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Introduction: The goal of our study is to evaluate if patients undergoing laparoscopic colectomy have a statistically shorter length of stay when compared to patients undergoing open colectomy. We evaluated National Surgical Quality Improvement Program (NSQIP) data to investigate if this is a valid assumption, and how mode of operation affects length of stay. Because most current literature tends not to adjust for biases in patient selection that could provide alternative explanation for length of stay, we aimed to control for this to provide a clear model of laparoscopic operation and length of stay.

Methods: Using four years of NSQIP public use files (PUF 2005-8), we used CPT coding to select all colectomies and further label the laparoscopic procedures. Patients were labeled as to being
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SEPARAFILM SLURRY DOES NOT INCREASE COMPLICATION RATES AFTER LAPAROSCOPIC COLECTOMY

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Seprafilm® adhesion barrier is proven to prevent adhesion formation after open abdominal and pelvic operations. However, with laparoscopy, a major technical roadblock is the delivery of these sheets into the peritoneal cavity. To avoid this problem, Seprafilm® slurry may be used to deliver the anti-adhesive barrier into the peritoneal cavity. The aim of this study was to evaluate the safety results, including incidence of postoperative complications and death after laparoscopic placement of Seprafilm® slurry in patients who underwent laparoscopic colectomy.

Methods: 100 consecutive laparoscopic colectomies [(group1, n=50, no Seprafilm, 07/2007-06/2008); (group 2, n=50, with Seprafilm® slurry, 07/2008-05/2009)] performed by a single surgeon was analyzed. In group 2, at the end of the procedure, two procedure packs of Seprafilm® (each pack containing six 3x6 inch sheets) was made into a slurry by dissolving it into 120 mL of warm saline. This solution was then delivered into the peritoneal cavity using a 16 Fr. catheter. Group characteristics were evaluated with regard to age, sex, body mass index (BMI), and ASA score. Six complications: abdominal or pelvic abscess, anastomotic leak, wound infection, subcutaneous abscess, re-admission and re-operation within the first 30 days after surgery were reviewed. The chi square test was used to detect frequency differences among the complications from what was expected. The Relative Risks with 95% confidence intervals were calculated to determine whether differences in complication rates between the groups were statistically significant. Mortality was examined qualitatively at the 30 day post-operative period as well.

Results: A total of 45,645 colectomies were reviewed, of which 12,455 (27.3%) were laparoscopic. The 75th percentile for SLOS was 11 days. This implied 9,249 (27.9%) of the open colectomies were outliers, while only 1,152 (9.2%) of laparoscopic colectomies were outliers (p<.001). When optimizing a simple linear regression to predict SLOS, using common acuity adjustors (i.e. age, functional status, ASA, wound category, various occurrences, etc.), the variable marking open procedures consistently had a coefficient of 1.8, implying open procedures increased SLOS by 1.8 days (p<.001). Utilizing logistic regression to predict outlier status, open colectomies were associated with an odds ratio of 2.27 for outlier status (p<.001). Thus implying an independent effect on SLOS.

Conclusion: Our data indicates that laparoscopic colectomy independently decreases length of stay when compared to patients who undergo open operation. This is important because although this is widely assumed, it has never been analyzed with intent to acuity adjust the patient populations examined. When comparing patients in these two categories we were able to compare the groups and use statistical methods to control for selection bias of patients who might be more “surgically fit”. Additionally, health care costs are under increasing scrutiny and laparoscopic procedures generally are more expensive to the institution. Demonstrating an across the board improvement in SLOS with laparoscopy will be useful in policy discussions.

LAPAROSCOPIC RIGHT HEMICOLECTOMY SHOULD BE THE STANDARD OF CARE FOR DISEASES OF THE RIGHT COLON WHICH REQUIRE SURGICAL RESECTION: A LARGE MULTICENTER OUTCOME STUDY

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Introduction: A large multi-center study on outcomes of laparoscopic and open right hemicolectomy has not been performed. The objective of this study was to retrospectively examine and compare perioperative outcomes of laparoscopic (LRH) and open (ORH) right hemicolectomy, including cost and risk.

Methods: Discharge data from the University HealthSystem Consortium (UHC) database was accessed using International Classification of Disease (ICD-9) codes during a 21 month period between October 2008 and July 2010. UHC is an alliance of more than 100 academic medical centers and nearly 200 affiliate hospitals. UHC's Clinical Data Base / Resource Manager (CDB/RM) allows member hospitals to compare patient-level risk-adjusted outcomes for performance improvement purposes. Discharge data on unselected patients with benign and malignant diseases requiring right hemicolectomy was collected. Main outcome measures analyzed were mortality, morbidity, 30-day readmission, intensive care unit (ICU) admission, overall length of hospital stay (LOS) and costs.

Results: A total of 18,263 patients with benign and malignant diseases of the right colon underwent LRH (n=5,800) or ORH (n=12,463) between October 2008 and July 2010. Overall patients undergoing LHR demonstrated superior outcomes including lower mortality, morbidity, ICU admission rate, length of stay, 30-day readmission rate and cost. When patients with minor/moderate severity of illness are compared, those who underwent LRH showed significantly lower mortality (0.06% LRH vs. 0.18% ORH; p<0.0001), lower overall morbidity (22.90% LRH vs. 46.97% ORH; p<0.0001) and lower ICU admission rate (14.51% LRH vs. 20.95% ORH; p<0.0001). Length of stay (4.97 ± 2.51 days LRH vs. 7.16 ± 6.12 days ORH; p<0.0001), 30-day readmission rate (3.99% LRH vs. 6.42% ORH; p<0.0001) and hospital costs ($15,208 ± 6,919 LRH vs. $18,861 ± 10,699 ORH; p<0.0001) were substantially higher with open right hemicolectomy group. Comparison of patients with major/ extreme severity of illness also demonstrated significantly improved perioperative outcomes in the LRH group.

Conclusions: This retrospective, multi-center analysis demonstrated that patients undergoing laparoscopic
right hemicolectomy have overall superior perioperative outcomes when compared to patients undergoing open right hemicolectomy. When patients are risk-adjusted into both minor/moderate and major/extreme severity of illness groups and compared accordingly LRH showed significantly better outcomes than ORH in both lower and higher risk patients. The laparoscopic right hemicolectomy has significant advantages over open right hemicolectomy and can be regarded as the standard of care in patients eligible for the technique.

S024
COST EFFICIENCY OF LAPAROSCOPIC VERSUS OPEN COLON SURGERY IN A TERTIARY CARE CENTRE

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Objective: A real world cost analysis of elective laparoscopic versus open colon resection in a tertiary Canadian teaching health centre was performed to evaluate the financial impact of minimal invasive surgery with the appointment of a focused laparoscopic surgeon in a single payer system.

Method: A retrospective review of all elective laparoscopic and open segmental colectomies between January 2005 and April 2010 for both benign and malignant disease was performed to coincide with the recruitment of a focused laparoscopic surgeon to our institution. Combined cases and procedures carried out on inpatients were excluded to minimize cost variables. The hospital case costing system was used to calculate hourly cost of operating room time, including reusable instruments, and daily hospital ward stay. The cost of disposable equipment was calculated manually. This system considers the cost applicable to the hospital alone and not physician payments.

Result: A total of 470 right hemicolectomies, RHC, (325 open and 145 laparoscopic) and 135 left or sigmoid colectomies, LHC (105 open and 30 laparoscopic) were found to match the inclusion criteria. The average operating room time for laparoscopic procedures was longer than open cases 3.39 v 2.89 hours (p=0.8) for RHC and 4.79 v 3.81 hours (p=0.7) LHC resulting in greater OR time cost of $4094 v $3312 for RHC and $5785 v $4582 for LHC. Incremental disposable costs for laparoscopic surgery were $948 for RHC and $1500 for LHC. Comparing laparoscopic to open, the median length of stay during the index admission was shorter after RHC, 5 v 8 days (p=0.01) and LHC 4 v 7 days (p=0.06) resulting in lower ward cost of $4556 v $6633 for right colon and $3297 v $5949 for left resection. The mean calculated cost of care per index admission following laparoscopic versus open surgery was $9598 vs. $9945 for RHC and $10,582 vs. $10,532 for LHC. The cost of 30 day readmission was not considered, but readmission was significantly higher following open compared to laparoscopic colectomy; 19.6% v 8.9%, p=0.04 for RHC and 24.7% v 13%, P=0.05 for LHC. Over the five year period we noted a steady rise in the proportion of laparoscopic colectomies with the greatest increase in the number of RHC (23%, 23%, 33%, 33%, and 40% by year). The use of laparoscopic surgery has actually saved our hospital $48,815 on index admission alone over a five year period, which translates to a possible saving of $32,100 per year if all eligible cases will be performed laparoscopically.

Conclusion: The reason for observed differences in operating room time and length of hospital stay were uncontrolled and may be multifactorial; however, these results demonstrate that adopting a minimal invasive approach to elective colon surgery in this institution has realized a modest but progressive financial saving.

S025
PRELIMINARY CLINICAL EXPERIENCE ON TRANSCOLONIC NOTES-TRANSRECTAL SINGLE PORT FOR RECTAL RESECTION AND TME

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Objectives: Natural orifice surgery has been applied for abdominal surgery in recent years, using either a transvaginal or a transgastric access to perform procedures. Despite potential advantages of using transcolonic NOTES to treat colorectal diseases, its application is still rare in the literature. The study describes new methods in human series of transcolonic NOTES access, using a new oncolgic transrectal TME procedure for rectal cancer.

Methods: Surgical resection was indicated for 8 patients with diagnosed rectal adenocarcinoma at middle third of the rectum, and 3 patients with benign tumors. IRB approval was obtained at the institution for the study, and the patients signed informed consent. Total mesorectal resection and rectosigmoidectomy was performed using single port device directly inserted in the rectum, and dissection was progressed proximally using intracolonic LESS dissection. Laparoscopic assistance was used for IMA ligation and left colon mobilization. Specimens were extracted transanally, and stapled or sutured transorificial anastomosis was performed.

Results: 8 patients were submitted to Transcolonic NOTES and TME, and 3 to transrectal single port TEM. Operative time was a mean of 290 min, and minor complications were recorded. One patient was converted to laparoscopic surgery and one to open surgery. The postoperative course at 15 days was uneventful, with resumption of oral diet on the second or third postoperative day. Pain scores were low for this initial casuistic. Adequate lymphnode count and free margins were obtained.

Conclusion: NOTES access for colorectal surgery is a promising new approach besides existing laparoscopic and open surgery to improve patient care. Transcolonic NOTES using transrectal single port devices is feasible and can be performed with available technology.

S026
LAPAROSCOPY WITHIN A FAST TRACK PROTOCOL ENHANCES THE SHORT-TERM RESULTS AFTER ELECTIVE SURGERY FOR RESECTABLE COLORECTAL CANCER

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Purpose: The aim of this study was to investigate whether laparoscopic colorectal resection improved recovery within an enhanced recovery program.

Methods: This study was designed as a query of a prospectively maintained colorectal database to identify 350 patients who underwent elective colorectal resection with primary anastomosis for colorectal cancer between January 1, 2005 and December 31, 2009. Patients were categorized into two groups (laparoscopic and open resection), and demographic, treatment, and outcome variables were independently reviewed for accuracy. A detailed fast-track protocol was prepared and distributed to all patients, department doctors and nurses to standardize the treatment.

Results: Two hundred nine patients underwent laparoscopic-assisted colorectal resection, and 141 had open surgery. There was no difference between the two groups in terms of age, sex, BMI, ASA, co-morbidity, previous abdominal surgery, preoperative chemoradiotherapy, cancer site and AJCC 2002
staging. Twenty-three patients in the laparoscopic group required conversion to an open procedure due to hemorrhage, tumor extension or technical difficulties. Laparoscopic patients had earlier tolerance of diet, bowel movement, fluids and stool canalization, mobilization, suction drain removal and interruption of analgesic drug administration. Length of postoperative stay was shorter (4 vs. 7 days, p = 0.0004), and fewer postoperative non-surgical complications (3 vs. 13% p = 0.009) were registered for the laparoscopic group.

Conclusion: This study suggests that within an enhanced recovery program, laparoscopic resection may provide the best short-term clinical outcomes for patients with resectable colorectal cancer.

S027 NEAR INFRA-RED (NIR) LAPAROSCOPY FOR LYMPHATIC ROAD-MAPPING AND SENTINEL NODE BIOPSY IN PATIENTS WITH LOCALIZED COLORECTAL NEOPLASIA. Ronan A Cahill, MD, Mark Anderson, MD, James East, MD, Lai Mun Wang, MD, Richard Guy, MD, Oliver Jones, MD, Ian Lindsay, MD, Chris Cunningham, MD, Neil J Mortensen, MD EISRI, Dublin, Ireland and Oxford Radcliffe Hospitals, Oxford, UK

Background: Appropriate lymphatic assessment is a cornerstone of definitive surgical resection for colorectal cancer. Here, we detail the use of near-infra red (NIR) laparoscopy after peri-lesional Indocyanine Green (ICG, Pulsion Medical Systems) injection in a series of consecutive patients undergoing laparoscopic resection with curative intent for colorectal neoplasia. This technology and technique aims to allow real-time, intra-operative road-mapping of the patient’s specific tumoral lymphatic drainage and, in particular, the detection of first order draining (or sentinel) lymph nodes.

Methods: Under Institutional Review Board (IRB) approval and after fully informed consent was obtained, fifteen patients (mean age 66.1 years, mean BMI 29.7 [range 24.9-39.9], 11 males) undergoing laparoscopic resection for radiologically localized colorectal neoplasia were studied. Three patients had highly dysplastic lesions which were inappropriate for endoscopic resection while the twelve others all had biopsy proven carcinoma (one with a Haggart 4 cancer found by prior polypectomy). Four patients were planned for a laparoscopically assisted right hemicolectomy as their definitive treatment while the others each required a fully laparoscopic anterior resection. All patients underwent NIR laparoscopy and lymphatic mapping in addition to standard oncologic laparoscopic resection. ICG was used as the mapping agent as this substance is capable of induced fluorescence when irradiated by NIR illumination in addition to possessing the dual physical characteristics of both submucosal persistence (as so has long been of proven utility as an endoscopic localization tattoo) along with immediate small particle diffusion into efferent lymphatics channels and nodes. 14 patients had their submucosal peri-tumoral injection of ICG intra-operatively (on-table colonoscopy immediately prior to commencement of laparoscopic mobilization) while the one remaining patient underwent endoscopy for tumor localization and tattoo 24 hours preoperatively. A prototype NIR laparoscopic system (Olympus Corporation) was used to provide both white light laparoscopy during the procedure as well as, by switch activation, NIR irradiation with and without discrete spectral filtration of the back-light energy.

Results: Mesenteric sentinel nodes (mean=3.8/patient) were rendered obvious by their clear fluorescent illumination within 15 minutes of dye injection in every case. In eleven cases, such nodes lay entirely within the planned resection specimen while four patients had additional sentinel nodes found lying outside the territory normally removed. Laparoscopic ultrasound was used for in vivo analysis of the sentinel nodes in five cases (all correctly demonstrated benign). Standard resection with additional berry-picking of aberrant nodes was then performed with the status of the sentinel node being compared to that of the non-sentinel nodes found by routine pathologic scrutiny. In all cases, the sentinel node correctly reflected the residual regional mesenteric nodal yield.

Conclusions: NIR Laparoscopy in conjunction with ICG mapping allows ready and rapid identification of the lymphatic drainage and sentinel nodes within the supporting mesentery for patients with colorectal neoplasia. While further validation is necessary, this promises precise, tailored resectional surgery for those cancers whose lymph drainage may be variable (e.g. flexural cancers) and may prompt consideration of either localized excision or supra-radical extirpative surgery on an individualized basis for patients intraoperatively proven node negative or positive respectively.

S028 MINIMALLY INVASIVE COLORECTAL RESECTION IS ASSOCIATED WITH DECREASED LEVELS OF THE TUMOR GROWTH INHIBITOR PLASMA ANGIOPOIETIN-LIKE PROTEIN 4 (ANGPTL4) DURING THE FIRST MONTH AFTER SURGERY WHICH MAY PROMOTE ANGIOGENESIS AND TUMOR GROWTH. HMAC Shantha Kumara, PhD, Daniel Kirchoff, MD, Saith J A Herath, BS, JoonHo Jang, MD, Xiaohong Yan, PhD, Vesna Cekic, RN, Richard L Whelan, MD St Luke Roosevelt Hospital Center, Department of Colon and Rectal Surgery,New York,NY,USA

Introduction: Angiopoietin-like protein 4 (ANGPTL4) is a secreted protein of the angiopoietin-like family. ANGLPT4 mRNA is frequently found in and near the necrotic areas of tumors and is upregulated in both epithelial tumors and in the endothelial cells (EC's) of tumor vessels. Expression is regulated by hypoxia in both EC's and tumor cells; ANGLPT4 accumulates in the extracellular matrix (ECM) of hypoxic EC's. ECM-bound ANGPTL4 reduces EC adhesion, and decreases EC migration and sprouting. ANGPTL4 also inhibits VEGF-induced vascular permeability and angiogenesis, possibly preventing metastasis by inhibiting tumor cell motility and invasiveness. Perioperative plasma ANGPTL4 levels in cancer patients have not been studied. Our aim was to assess plasma levels during the first month after minimally invasive colorectal resection (MICR) for colorectal cancer (CRC).

Methods: Plasma for this study was obtained from an IRB-approved perioperative plasma and data bank; only cancer patients who underwent elective minimally invasive colorectal resection (MICR) were eligible. Blood samples had been obtained preop and at varying postop time points and were stored at -80°C. Only patients for whom preop, POD 3, and at least 1 late postop plasma sample (POD7-67) were available were included in this study. The late samples were bundled into 4 time periods (POD7-13, POD14-20, POD21-27, and POD 28-67) and considered as single time points. ANGPT4 levels were determined in duplicate via ELISA and the results are reported as mean ±SD after logarithmic transformation of the data to a normal distribution. The paired t-test was used for statistical analysis with significance set at p<0.01 (after Bonferroni correction).

Results: 80 MICR patients met the inclusion criteria (43 males/37 female, mean age 66.8 ±13.2 years). Twenty nine percent of patients had rectal tumors and 71% colonic lesions. Mean incision length was 7.1±3.2cm, mean operative time was 241.2±95.0 min., and mean length of stay was 5.9±2.3 days. Final cancer stage breakdown was: stage I, n=24; stage II, n=27; stage III, n=27; and stage IV, n=2. Regarding ANGPT4 levels, the “n” for each comparison varies widely based on postop plasma availability. The mean PreOp ANGPT4 level was 247.2 ±230.7 ng/ml for the entire group. Significantly lower mean plasma levels (p<0.001) were noted on POD 3 (161.4±140.4ng/ml, n=80), POD7-13 (144.6±134.5 ng/ml, n=46), POD14-20 (139.0±117.8 ng/ml, n=27), POD21-27 (138.9±202.4, n=20), and for the POD 28-67
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(160.1±179.0,n=42) time points when compared to the mean preop results.

**Conclusion:** Plasma ANGPTL4 levels remain significantly lower than baseline for over a month after MICR. The cause(s) for this notable persistent decrease is unclear. Possible reasons are: 1) removal of the cancer, 2) systemic alterations related to wound healing following surgical trauma. Since ANGPTL4 has many angiogenesis inhibiting effects, this persistent decline after MICR likely promotes wound angiogenesis and may encourage neovascularization in residual micrometastases that remain in some patients after removal of the primary tumor. Further studies are warranted.

**S029**

**LAPAROSCOPIC APPROACH TO OBSTRUCTIVE COLON CANCER: WHAT ARE THE OPTIONS?**

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**Introduction:** Most centers consider malignant colonic obstruction a contraindication to perform laparoscopic surgery, and, in clinical practice guidelines the recommendations are limited to patients who do not have colon cancer associated with perforation, obstruction, fistula or are locally advanced. Trials that have compared laparoscopically assisted and open colectomy for colon cancer have excluded patients with colonic obstruction as those that analyze the outcomes, especially survival, using the laparoscopic approach.

**Material and methods:** The objective of this study is to report our experience with patients presenting to the emergency department with bowel obstruction due to colon cancer. We designed a nonrandomized prospective study of all consecutive patients with obstructive colonic tumors. We recollected data from April 1992 to August 2009. Our aim is to describe the technique and present the results of our experience.

**Results:** From January 1991 to August 2009 we recollected data of 1262 colonic surgery cases, 636 with the diagnosis of cancer and 49 presenting with obstruction, which underwent laparoscopic approach.

2 surgeries were completed totally laparoscopically, 27 laparoscopically assisted and 17 were converted to open surgery. We performed 17 hemicolecotomies for tumors located in the cecum (5 patients), ascending colon (7 patients), hepatic angle (4 patients) and transverse colon (1 patient); 2 left hemicolectomies; 13 sigmoid colectomies; 6 low anterior resections; 3 subtotal colectomies and 1 abdominopereineal resection. A resection was not performed in 4 patients due to advanced disease and a decompression and colostomy was successfully performed with laparoscopic technique in 3 of them, and one patient was converted to open surgery. 8 patients required a Hartmann procedure.

**Discussion:** Most conversions to open surgery were necessary in patients with prior abdominal surgery (7 cases), severe bowel distention, intraoperative complications (enterotomies) or severe metastatic disease or carcinomatosis. Even with this type of patients, laparoscopy offers the advantage of visualizing the exact localization of the intraabdominal process and the opportunity to perform a smaller and guided laparotomy incision.

**S030**

**COMPARISON OF POSTOPERATIVE FUNCTIONS BETWEEN LAPAROSCOPIC ISR AND OPEN ISR IN VERY LOW RECTAL CANCER**

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**Objective:** The aim of this study was to compare the short-term results and postoperative functional outcomes between laparoscopic intersphincteric resection (Lap ISR) and open intersphincteric resection (Open ISR) for very low rectal cancer.

**Methods:** We performed a case controlled pair-matched study comparing 48 patients who had undergone either Lap ISR or Open ISR. Our former report showed that three significant clinical factors, such as male, total resection of the internal anal sphincter and use of chemoradiation therapy (CRT), were associated with poor anal function after ISR. Therefore patients in this study were matched by the factors. Our indications for ISR were tumor edge 5 cm above the anal verge or 3 cm above the dentate line, and Lap ISR was performed for the patients with rectal cancer of clinical stage 1. We compared intra- or post-operative clinical results, and postoperative urinary or anal functions between two groups.

**Results:** There were no statistically significant differences in clinical backgrounds such as age, gender, tumor site, preoperative CRT and extent of excision of the anal sphincter muscle among two groups. Median operative time was 328 min in Lap ISR group and 328 min in Open ISR group. Blood loss in Lap ISR was less than one in open ISR, and the difference was statistically significant (350ml vs 911ml, p<0.01). We had no postoperative reoperation in both groups. The rates of anastomotic leakage were found in 13% of both groups. RO operation was achieved in all patients in both groups. Urinary dysfunction as early complications after ISR was found 4% in Lap ISR and 21% in Open ISR (p=0.08). Fecal incontinence score was 7 points in Lap ISR and 11 points in Open ISR, and the difference was statistically significant (p=0.03).

**Conclusion:** We could see the anatomical structures at the bottom of the pelvis clearly by using laparoscope when performing the intersphincteric dissection. The advantage lead the superiority in postoperative anal function in patients who had been performed by Lap ISR compared with open procedures.

**S031**

**FIVE STRATEGIES THAT REDUCE TOTAL LENGTH OF STAY FOR COLORECTAL SURGERY AT ACADEMIC TEACHING HOSPITALS**

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The objective of enhanced recovery after surgery (ERAS) programs is to incorporate strategies into the perioperative care plan to decrease complications, hasten recovery and lead to a shortened length of hospital stay for patients. Which ERAS strategies contribute most to this shortened length of stay is not clear.

**Objective:** To determine which ERAS strategies contribute significantly to overall shortened length of hospital stay in patients undergoing elective colorectal surgery.

**Methods:** A retrospective cohort study of 336 consecutive patients undergoing elective colorectal resection at 7 hospitals was performed. Demographic, length of stay, complications and data on 18 ERAS components identified from a systematic review of the literature were collected. A multi-regression analysis was performed to assess for factors independently associated with a length of stay of 5 days or less.

**Outcomes:** Fifty-five per cent were males, (mean age 63), 55.6% had an ASA III or IV, 76.5% had colon and 28.0% had low rectal procedures; 46.3% were completed laparoscopically. The median length of stay was 6.5 days with a mean of 8.6 days. On univariate analysis the strategies associated with total length of stay of 5 days or less were use of a laparoscopic approach, use of a Pfannenstiel or other transverse incision, preoperative counseling, avoidance of an oral bowel prep, introduction of clear fluids on day of surgery and discontinuation of Foley catheter <24 hours from the time of surgery (all p<0.01). On multivariate analysis the factors that remained significantly associated with length of stay of 5 days or less included use of a laparoscopic approach (OR=1.38, 95% confidence interval, CI
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1.33-1.44), pre-operative counseling regarding expected length of stay (OR= 1.23, 95% CI 1.16-1.30), avoidance of oral bowel prep (OR=1.03, 95% CI 1.02-1.05), clear fluids on day of surgery (OR=1.12, 95% CI 1.04-1.21), and Foley catheter discontinued within 24 hrs of colon surgery and 72 hours or rectal surgery (OR=1.08, 95% CI 1.00-1.16).

Conclusions: In hospitals with variable uptake of ERAS strategies, preoperative counseling regarding early discharge, omission of an oral bowel preparation, use of a laparoscopic approach, initiation of clear fluids on day of surgery, and early discontinuation of the Foley catheter all independently contribute to shortened length of stay.

**S032**

**LAPAROSCOPIC CHOLECYSTECTOMY AFTER A QUARTER OF A CENTURY: WHY DO WE STILL CONVERT?** Balazs I Lengyel, MD, Dan E Azagury, MD, Maria T Panizales, M5, Jill Steinberg, MPH RN, David C Brooks, MD, Stanley W Ashley, MD, Ali Tavakkolizadeh, MD Department of General Surgery, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, USA; Surgical Planning Laboratory, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, USA

**BACKGROUND:** Laparoscopic Cholecystectomy (LC) is the gold standard procedure for gallbladder removal in the United States. Although conversion to open surgery is sometimes necessary, the factors underlying this decision are often unclear. However, an association between the duration of laparoscopic procedures and increased complications and cost is frequently hypothesized, suggesting that clinicians should consider early conversion. The purpose of this study is 1) to identify the main reasons of conversion; 2) compare the outcome of converted LC versus long LC that remain non-converted.

**METHODS:** Using the NSQIP database and financial records, we retrospectively reviewed 1,193 cholecystectomies performed at our institution between 2002 and 2009. We compared the longest 10% of all laparoscopic cases (Long-LC) with converted (CONV) procedures. Length of stay (LOS), 30-day complications, operative times and charges, as well as hospital charges were compared. An independent surgical reviewer identified the reasons and circumstances of conversion in all CONV cases. Primary conversion was defined as due to pre-existing adhesions or inflammatory changes precluding laparoscopy. Secondary conversion was defined as being performed due to a complication secondary to a surgical maneuver. Number of trocars inserted at the time of conversion and length of dissection before conversion was also evaluated. Poison regression and Wilcoxon test were used to compare outcomes.

**RESULTS:** 110 Long-LC and 62 CONV cases were included in the analysis (Table 1). Long-LC took on average 35 minutes longer to perform, however there were no differences in the post-operative complication rates between the groups. LOS was significantly shorter in the Long-LC compared to CONV group (1.4 vs. 4.6, respectively, p<0.01). Although Long-LC cases had higher operative charges, the overall hospital charges for Long-LC cases were substantially lower (Table 1). In 91% of CONV cases, the conversion was primary. In 92% of primary conversions, the conversion followed minimal or no attempt at dissection. In 24% of these conversions, the average number of trocars placed before conversion was less than 2 (1.3 +/- 1.3), further highlighting lack of laparoscopic attempt at dealing with adhesions. Out of 5 secondary conversions, bleeding occurred in 2 cases and concerns of CBD injury in 3 other cases. There were however no actual CBD injuries.

**CONCLUSIONS:** Comparing CONV with Long –LC, conversion is associated with shorter operative times, but leads to a 3-day increase in LOS and significantly higher hospital charges, without a reduction in complications. In more than 90% of CONV group, conversion was carried out without serious attempt at adhesiolysis or dissection. Our outcome data however, favors pursuing a laparoscopic approach instead of early conversion to open surgery. With such an approach, a high percentage of conversions can be prevented with no increased risk to the patient, and significant benefit to the health care system.

**Table 1. Outcome and charge data**

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Long-LC</th>
<th>CONV</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of cases</td>
<td>110</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>Median OR time (min)</td>
<td>123</td>
<td>88</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Post-operative complication rate (%)</td>
<td>9</td>
<td>11</td>
<td>NS</td>
</tr>
<tr>
<td>Length of Stay (days)</td>
<td>1.4</td>
<td>4.6</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Total hospital charges ($)</td>
<td>24,200</td>
<td>31,768</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>

**S033**

**PROSPECTIVE RANDOMIZED CONTROLLED TRIAL OF TRADITIONAL FOUR PORT LAPAROSCOPIC CHOLECYSTECTOMY VERSUS SINGLE INCISION LAPAROSCOPIC CHOLECYSTECTOMY** Melodie S Phillips, MD, Jason M Maleks, MD, Roberto Tarchino, MD, Kurt Roberts, MD, Raymond Onders, MD, George DeNoto, MD, Paraskevas Paraskeva, MD, Homero Rivas, MD, Arsalla Islam, MD, Nathaniel Soper, MD, Alexander Rosemurgy, MD, Sajani Shah, MD University Hospitals Case Medical Center, Cleveland, OH, USA

**Introduction:** Since the first report of standard four port laparoscopic cholecystectomy (4PLC) in 1985, minimally invasive techniques have become an integral part of general surgery. 4PLC now is considered standard of care. Single incision laparoscopic cholecystectomy (SILC) was first described in 1997 with favorable outcomes in small series of non-randomized reports. This study presents a prospective randomized multi-center, single blinded trial of SILC versus 4PLC with the goal of assessing feasibility and safety.

**Methods:** Patients with biliary colic and documented gallstones or polyps, or those with biliary dyskinesia (documented EF < 30%) were randomized to SILC versus 4PLC in a 1.5-to-1 ratio. Patients were blinded for the first post-operative week. Data measures were operative time, estimated blood loss, length of hospital stay, adverse events, and conversion to 4PLC or laparotomy. Additionally, pain, satisfaction and cosmetic scoring was performed by the patient over the 12 month follow-up.

**Results:** 186 patients underwent randomization to SILC (n=111) or 4PLC (n=85). Patient characteristics were similar, except for body mass index which was significantly lower in the SILC group (28.9 vs. 31.0, p<0.0018). One patient randomized to SILC required conversion to 4PLC for intraoperative bleeding. There were no common bile duct injuries. Each arm had one port site hernia and one episode of retained common duct stones, treated with ERCP. SILC had a statistically significant longer operative time than 4PLC (57 vs. 45 min, p<0.0001), but no difference in operative blood loss. The SILC group had a statistically significant higher pain score (1 point difference) on days 3 and 5, however, there was no difference in the analgesic use amongst all days between the two groups and no difference in reported pain after day 5. The self-reported body image and confidence scores as well as the physician-reported Hollander scores were similar, except for at one month when body image scores favored SILC. The patient-evaluated scar rating photo questionnaires significantly favored SILC across all time points. In addition, the cosmetic scale was statistically significant favoring SILC at 1, 2, 4, and 12 weeks. Satisfaction scores, however, were in favor of 4PLC at 3 days and 4 weeks for the SF-8 and SF-12 respectively, but all other time points did not reach statistical difference.

**Conclusions:** In this randomized controlled trial of SILC versus 4PLC, SILC appears to be safe with a similar complication profile. Reported pain scores were higher for SILC patients in the early post-op period although analgesic use was comparable.
S034

CLINICAL RESULTS OF PER-ORAL ENDOSCOPIC MYOTOMY (POEM) FOR 56 CONSECUTIVE CASES OF ESOPHAGEAL ACHALASIA

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INTRODUCTION: To establish less invasive permanent treatment for esophageal achalasia, per-oral endoscopic myotomy (POEM) was developed and clinically applied by present authors.

PATIENTS: POEM was performed in 56 consecutive cases of achalasia. First case was done in September 2008. Fourteen cases of sigmoidal achalasia were also involved. Three of them received surgical myotomy previously. POEM got IRB approval from our hospital. Written informed consent was given to all patients.

PROCEDURE: After creating submucosal long tunnel, endoscopic myotomy of circular muscle bundles was carried out at approximately 11 cm in total length (9 cm in distal esophagus and 2 cm cardia). Smooth passing of endoscope through GE junction was confirmed at the end of the procedure.

RESULTS: In all cases symptoms of dysphagia were significantly reduced or disappeared. Myotomy length was 11.2 cm on average (from 5 cm to 22 cm). Resting pressure was 52.5 mmHg before POEM, and reduced to 19.8 mmHg after procedure.

No specific complications related to POEM were experienced. During follow-up period, no additional treatment and no medication were necessary except one. Only one patient received 20mm balloon dilatation one month after POEM. In this particular case, residual symptom of mild dysphagia disappeared after dilatation. Three cases who received surgical myotomy beforehand (2 laparoscopic Heller, 1 thoracoscopic myotomy) were symptomatically controlled well after POEM. During follow-up period (maximum 2y1m) no patient complained recurrent symptom of dysphagia, but some of them still complained mild chest pain. Four cases demonstrated endoscopically visible GERD (Los B 3, Los A 1). Three cases with symptomatic GERD received PPI prescription and GERD symptom was controlled well.

CONCLUSION: Short-term outcome of POEM was excellent with no serious complications.

S035

LAPAROSCOPIC DOR VERSUS TOUPEТ FUNDOPLICATION FOLLOWING HELLER MYOTOMY FOR ACHALASIA: RESULTS OF A MULTICENTER, PROSPECTIVE RANDOMIZED-CONTROLLED TRIAL.

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Introduction: Laparoscopic Heller myotomy with partial fundoplication (FP) is the preferred treatment for esophageal achalasia. However, the type of fundoplication that should be performed is controversial. We prospectively compared anterior fundoplication (Dor) with partial posterior fundoplication (Toupet) in patients undergoing laparoscopic Heller myotomy.

Methods: A multicenter, prospective, randomized-controlled trial was initiated to compare outcomes of Dor vs Toupet fundoplication after laparoscopic Heller myotomy for achalasia. Outcome measures were symptomatic GERD scores (0-4, five point Likert scale questionnaire) at 2-6 weeks, 6 months, and 12 months postoperatively, and 24 hour pH testing at 6 months. Data are mean ± SD. Statistical analysis was by Mann Whitney U test and Wilcoxon signed rank test.

Results: Eighty-five patients were enrolled at 5 sites and were randomized to 49 Dor and 36 Toupet FP’s. The Dor and Toupet groups were similar in age (45.6 vs 49.7 yrs) and gender (61.2% vs 61.1% male). Six month pH studies were obtained in 22 of 49 (40.8%) of the Dor patients and 18 of 36 (50%) of Toupet patients. The DeMeester score was >14.7 in 9 of 22 patients (40.9%) in the Dor group and in 3 of 18 patients (16.7%) in the Toupet group (p=0.037), although the total DeMeester scores (table) and % pH time <4 were NS between groups.

Dysphagia and regurgitation symptom scores in the patients who underwent pH testing improved significantly in both groups compared to pre-op at all follow-up time points (see Table Pre-op vs 6 months). No significant differences between the Dor vs Toupet groups were noted for any esophageal symptoms pre-op or at any of the follow-up periods.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Dor Pre-op</th>
<th>Dor 6 mos</th>
<th>Toupet Pre-op</th>
<th>Toupet 6 mos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid dysphagia</td>
<td>3.0 ± 1.0</td>
<td>1.3 ± 0.8**</td>
<td>3.1 ± 1.1</td>
<td>1.0 ± 1.0**</td>
</tr>
<tr>
<td>Heartburn</td>
<td>1.5 ± 1.3</td>
<td>0.7 ± 0.8</td>
<td>1.0 ± 1.2</td>
<td>0.3 ± 1.0*</td>
</tr>
<tr>
<td>Regurgitation</td>
<td>2.8 ± 1.2</td>
<td>0.7 ± 1.0**</td>
<td>3.3 ± 0.7</td>
<td>0.1 ± 0.3**</td>
</tr>
<tr>
<td>DeMeester pH score</td>
<td>NA</td>
<td>7.2 (0.2-131)</td>
<td>NA</td>
<td>2.2 (0.2-107)</td>
</tr>
</tbody>
</table>

*p< 0.05, ** p<0.01 pre vs 6 months postop.

DeMeester pH score = median score and range

Conclusion: Laparoscopic Heller myotomy provides significant improvement in dysphagia and regurgitation symptoms in achalasia patients regardless of the type of partial fundoplication. However, based on a 47% follow-up at 6 months, the Dor fundoplication was associated with a significantly higher percentage of patients with abnormal reflux than the Toupet FP despite no symptomatic differences.

S036

DECREASING MORBIDITY AND MORTALITY IN ONE HUNDRED CONSECUTIVE ESOPHAGECTOMIES

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Introduction: Esophagectomy is a complex invasive procedure requiring exploration of multiple body cavities for organ removal and subsequent restoration of gastrointestinal continuity. In many institutions, esophagectomy morbidity and mortality rates remain high despite improvements in intensive care treatment. We reviewed our esophagectomy experience over a consecutive series of 100 patients to analyze trends in morbidity and mortality as we transitioned from open to minimally invasive esophagectomies.

Methods: We reviewed 104 consecutive patients undergoing operative exploration for esophagectomy from August 2007 to August 2010. The preoperative evaluation, operative technique, and postoperative care of these cases were evaluated and compared for the initial 16 patients undergoing open resection and subsequent 84 who had a minimally invasive esophagectomy (MIE). Postoperative morbidity and mortality were reviewed and recorded.

Results: During the time frame of the study, 104 patients...
underwent an exploration for attempted esophagectomy. Resection was completed in 100 patients and was done for malignant disease in 93 patients and benign disease in 7 patients. There was one in hospital mortality in the 100 consecutive patients undergoing esophagectomy during this time period due to a pulmonary embolism. There was no significant difference in post operative complications consisting of transient left recurrent nerve injury (7.1% vs 12.5%) or pneumonia (11.9% vs 12.5%) in those undergoing MIE compared to open resection, respectively. However, wound infections were significantly less in patients undergoing MIE compared to open esophagectomy (2.4% vs 12.5%, respectively, p=0.01). Anastomotic leak (4.8% vs 12.5%, p=0.05) was also lower in those undergoing MIE. Median length of stay (LOS) was significantly less in patients undergoing MIE compared to open esophagectomy (9 vs 14 days, p<0.05). Finally, there was a trend towards improvement in median LOS in the 42 patients undergoing MIE in the most recent time period compared to the initial 42 patients undergoing MIE (8 vs 10 days, p=0.05).

Conclusions: Our results support the continued safe use of esophagectomy for selected esophageal diseases, including malignancy. Morbidity, especially wound infection, anastomotic leak, and length of stay is decreasing with the incorporation of minimally invasive techniques.

**S037**

TECHNICAL AND PERIOPERATIVE OUTCOMES OF MINIMALLY INVASIVE ESOPHAGECTOMY USING PRONE VATS

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**Introduction:** Minimally invasive esophagectomy (MIE) is performed through various approaches, including the use of video-assisted thoracoscopic surgery (VATS) for mediastinal esophageal dissection. Typically, VATS is performed with patients in the lateral decubitus position. To achieve esophageal exposure, lateral positioning VATS requires numerous trocars, specialized retractors, and a skilled assistant. A prone VATS technique enables gravity-aided esophageal exposure thereby facilitating the thoracic portion of MIE. This study’s aim is to review perioperative outcomes after prone MIE focusing on outcomes related to patient preoperative comorbidities.

**Methods and Procedures:** An IRB-approved retrospective cohort study is presented. Between January 2007 and August 2010, 42 patients underwent 3-field MIE using prone positioning for the VATS portion. A 3-trocar technique was used (10 mm x 2 and 5 mm x 1) allowing for just one surgeon and one assistant. All of the patients were managed with a standardized care pathway. Patients were predominantly male (37 vs. 5 female) and an average age of 68 years (range 37-87). The indications for MIE include esophageal malignancy, end-stage achalasia, and squamous cell carcinoma. Neoadjuvant chemo/radiotherapy was administered to 16 (38%) patients. Using an established preoperative co-morbidity index, 23 patients were categorized as low-risk, 14 as moderate-risk, and 5 as high-risk. Postoperative complications were stratified using the Clavien Classification Scale, with minor complications defined as Class 1-2 and major complications classified as Class 3-5.

**Results:** Median length of stay was 8 days (range 6-51 days) and median ICU stay was 2 days (range 1-26 days). Average surgical time for prone VATS was 108 minutes (range 67-198 minutes) and average supine surgical time was 230 minutes (range 120-364 minutes). Average estimated blood loss was 183 cc (range 20-500 cc), and 37 out of 42 patients (88%) were extubated on the day of operation. Postoperatively, 5 out of 5 high-risk patients had a complication, 3 of which were major. Eight of the 14 moderate-risk patients had a complication, 3 of which were major; and 17 of the 23 low-risk group had a complication, 8 of those major. The predominant complications were arrhythmias (14) and pneumonia (7). There were a total of 5 anastomotic leaks, 1 in the high-risk group, 1 in the moderate-risk group and 3 in the low-risk group. Twelve of the 14 major complications occurred in patients with a history of tobacco use. There were a total of 2 postoperative 30-day mortalities, 1 in the high-risk group and 1 in the moderate-risk group.

**Conclusions:** This series supports the use of the prone MIE approach. Prone VATS in MIE allows for fewer ports than non-prone MIE and eliminates the need for lung retractors. Despite the facilitation of the thoracic portion of the surgery, and a pathway allowing early extubation, cardiopulmonary complications remained common, although more so in the high-risk patient and those with a history of tobacco use.
38% of baseline (range=18.1 to 67.4). However there is no difference between the Lig (38.3±12.0) and Non-lig (37.7±16.8) cohorts (p=0.798).

**Conclusions:** This study demonstrates the effect of stomach devascularisation is such that conduit perfusion is only around 1/3 of that present initially. The interim analysis revealed no effect of ischemic conditioning by ligation of the left gastric vessels on conduit perfusion. If the effects were as great as reported in historical series, a difference in perfusion would have been expected even at this interim analysis.

**S039**

**THE EFFECTS OF PHENYLEPHRINE AND NOREPINEPHRINE ON TISSUE OXYGENATION IN AN EXPERIMENTAL GASTRIC CONDUIT MODEL AS MEASURED BY OPTICAL FIBER SPECTROSCOPY**  Erin W Gilbert, MD, Vincent L Harrison, MD, Vivan V Hou, MD, James P Dolan, MD, Brett C Sheppard, MD, Steven L Jacques, PhD, John G Hunter, MD, Dan Gareau, PhD  Department of Surgery, Oregon Health & Science University, Portland, OR, Department of Anesthesiology, Oregon Health & Science University, Portland, OR, Department of Dermatology & Biomedical Engineering, Oregon Health & Science University, Portland, OR

**INTRODUCTION:** Anastomotic oxygenation of the gastric conduit following esophagectomy is largely dependent on microcirculation which makes the gastro-esophageal anastomosis susceptible to ischemia. Ischemia is known to contribute to significant postoperative complications. In addition, many patients require hemodynamic support in the peri-operative period which may further influence microcirculation and tissue oxygenation. Optical fiber spectroscopy (OFS) has been shown to reliably assess tissue oxygenation in both human and animal models. We hypothesize that OFS can effectively measure changes in oxygenation during gastric conduit creation and during vasopressor administration in an experimental animal model.

**METHODS:** A gastric conduit was constructed in a swine model. OFS was used to measure tissue oxygenation (OSat) and blood volume fraction at the antrum, the serosal surface and the mucosal surface of the future anastomotic site during and after conduit creation. Next, continuous OFS measurements were obtained at the future anastomotic site while administering increasing doses of the vasopressors norepinephrine and phenylephrine. Comparisons of OFS data were made using Student’s t-test and analysis of variance (ANOVA.)

**RESULTS:** Following conduit creation observed OSat increased in the antrum (p<0.001) and decreased in the mucosa (p<0.001) and serosa (p=0.006) at the proposed site of anastomosis [figure 1]. In addition, mean decrease in OSat was particularly pronounced at the mucosal surface as compared to the serosal surface (62% vs. 36% respectively, p<0.001.) Bolus administration of norepinephrine led to a uniform sustained rise in OSat (avg. increase 19%) despite escalating doses (min. dose 2.5 μg, max. dose 10 μg) [figure 2].

Bolus administration of low dose (50 μg) phenylephrine resulted in an initial increase in OSat over baseline (48% to 63%, p<0.001.) However, with increasing doses (200 μg and 400 μg) there was a sustained decrease in OSat (62% to 52% and 53% to 47% respectively, p<0.001 in each instance) [figure 3].

**CONCLUSION:** During and after creation of a gastric conduit, both the serosal surface, and to a greater extent the mucosal surface of the future anastomotic site have decreased oxygen saturation as compared to baseline values. Administration of norepinephrine resulted in uniformly increased tissue oxygenation in the gastric conduit while administration of phenylephrine did not result in a reliable increase in tissue oxygenation. Taken together, our data indicates that norepinephrine administration increases tissue oxygenation of the gastric conduit in this model system.
SURVIVAL COMPARISON OF LAPAROSCOPIC VERSUS OPEN CURATIVE GASTRECTOMY FOR EARLY AND ADVANCED GASTRIC CANCER. A MATCHED COHORT STUDY.

**S040**

**Methods and procedures:** retrospective matched cohort study. We included patients between 2002 and 2010 with an R0 resection. A totally laparoscopic technique was used and D2 lymph node dissection was practiced routinely. We performed an intracorporeal hand-sew esophagojejunostomy in all laparoscopic total gastrectomy cases. We matched all laparoscopic cases 1:1 with open cases according to TNM AJCC 7th edition. We used Mann Whitney or t-test and chi square to compare both groups. Kaplan-Meier analysis with log rank test was performed to compare survival.

**Results:** We included 32 open and 32 laparoscopic cases (mean age 62±14 years; 65% males). Both groups were identical in type of gastrectomy (71% total and 29% subtotal). There was no statistical difference between laparoscopic and open groups in age, sex, N category, tumor location and size, histological differentiation and T category (48% T1, 13% T2, 16% T3 and 23% T4 in both groups), with 48% early and 52% advanced tumors. The median number of resected lymph nodes was similar, 35 (23-53) for laparoscopic and 39 (23-45) for open cases (p=0.73). The median follow-up was 46 months. The overall 3 years survival was 75% for laparoscopic surgery and 86% in open group (p=0.25). There was no difference in 3 years survival in laparoscopic versus open group in advanced tumors (64% vs. 75%, p=0.26), N+ tumors (60% vs. 72%, p=0.54) and in the different AJCC stages (stage 1: 92% vs. 100%, stage 2: 86% vs. 82% and stage 3: 40% vs. 50%, p=0.25, 0.89 and 0.67 respectively).

**Conclusion:** In this preliminary report, with 52% of advanced tumors, the 3 year overall and stage by stage survival was comparable in laparoscopic and open curative gastrectomy.

LAPAROSCOPIC GASTRECTOMY FOR PATIENTS WITH ADVANCED GASTRIC CANCER PRODUCES SIMILAR ONCOLOGIC OUTCOMES TO OPEN RESECTION

**S041**

**Methods:** We reviewed consecutive patients with gastric cancer, treated with resection and adjuvant chemomdradation (45Gy/25 with 5FU-based chemotherapy), at a single quaternary care comprehensive cancer center between Jan. 1, 2000 and Nov. 30, 2009. Of 203 patients, 21 were treated with laparoscopic-assisted gastrectomy. These patients were compared to open surgery, and evaluated for overall survival (OS), relapse-free survival (RFS), and site of first disease recurrence.

**Results:** Among 21 patients in the laparoscopic group, median age was 61.3 (28.2-76.6) and median follow-up was 21.3 (6.7 – 50.4) months; 71% were male. Most had AJCC/UICC TNM v6 stage II (33%) or III (52%) disease. These demographic characteristics were similar in both the laparoscopic and open groups. The incidence of recurrence for patients with advanced gastric cancer was 38.1% (8/21) in the laparoscopic group, and 36.8% (67/182) in the open group. In the laparoscopic group, the site of first recurrence was distant in 3 patients, peritoneal in 4, and mixed in 1 (locoregional and distant). There was no significant difference in recurrence patterns when compared to patients undergoing open resection. In the open group, recurrence was distant in 26, peritoneal in 12, locoregional in 15, and 14 presented with a mixed pattern. The 3-year RFS was 58.0% (50 - 66), and was not statistically significant between the two groups by Gray’s test (p=0.32). The 3-year OS was 65.9% (58 - 73), and was not significantly different between the groups on univariate (p=0.92) or multivariate (p=0.54) analyses.

**Conclusions:** Our study suggests laparoscopic assisted gastrectomy is an oncologically safe procedure for advanced gastric cancer with comparable outcomes to open gastrectomy.

LAPAROSCOPIC SLEEVE GASTRECTOMY FOR OBESITY: CAN IT BE CONSIDERED A DEFINITIVE PROCEDURE?

**S042**

**Methods and procedures:** retrospective cohort study. We reviewed consecutive patients with BMI ≥40 who underwent sleeve gastrectomy (LSG) from January 1, 2002 to December 31, 2009. The mean age was 39.0 years (range: 18-64), with a mean pre-operative BMI of 49.2 kg/m² (range 35.0-77.3). Mean excess weight loss at 3 months was 31% (12-57%), at 6 months was 46% (20-100%), at 12 months was 57% (19-108%), at 2 years was 62% (14-114%) and 3 years was 62.3% (43-90%). Resolution/improvement of co-morbidities post-operatively was 55.7% for hypertension, 74.13% for diabetes, 45.65% for asthma/shortness of breath, 48.8% for obstructive sleep apnea, and 20.9% for gastroesophageal reflux disease. There were no mortalities. There were 26 (14.5%) complications – 4 anastomotic leaks (2.23%), 3 intra-operative hemorrhages (1.7%), 4 sleeve obstructions (2.23%) and 6 patients with new onset acid reflux (4.4%). Ten patients (5.6%) required conversion to gastric bypass for refractory reflux or obstructive symptoms.

**Conclusions:** In this unique experience, LSG is a safe and effective bariatric operation, with satisfactory weight loss and modest complication rates. Although long term data are still not available, it appears to be a definitive alternative to other bariatric procedures.

MANAGEMENT OPTIONS FOR SYMPTOMATIC STENOSIS FOLLOWING SLEEVE GASTRECTOMY IN THE MORBIDLY OBESE

**S043**

**Objective:** The laparoscopic vertical sleeve gastrectomy (LSG) is increasingly being used as a weight loss procedure. Little published data exist regarding the management of patients who...
S044

NOTES-INSPIRED SLEEVE GASTRECTOMY Elie CHOUILLARD, MD, Abe Fingerhut, MD FACS On behalf of the Intercontinental Society of Natural Orifice, Endoscopic, and Laparoscopic Surgery (i-NOELS), Poissy, FRANCE

Aim: Miniaturization of the access into the abdominal cavity is, nowadays, gaining popularity. Theoretical advantages include reduced abdominal wall complications, less postoperative pain, reduced genesis of adhesions, shorter hospital stay, faster return to activity and productivity, and preserved cosmesis. Due to the still unresolved technical hurdles, the so-called “hybrid” NOTES approach was developed. Obese patients may theoretically benefit most from these techniques due to a would-be lower abdominal wall-related morbidity. We undertook a pilot study evaluating the Sleeve Gastrectomy under these novel techniques emphasizing feasibility, safety, limitations, and nomenclature problems of these procedures.

Patients and Methods: In January 2008, we started a prospective evaluation of NOTES-related techniques including Bariatrics.

S045

META-ANALYSIS OF LEAK AFTER LAPAROSCOPIC SLEEVE GASTRECTOMY FOR MORBID OBESITY Alexander Aurora, MD, Leena Khaitan, MD, Alan Saber, MD University Hospitals Case Medical Center

INTRODUCTION: Sleeve gastrectomy is becoming a more common procedure in the realm of bariatrics. Its success has been questioned by proponents who query its efficacity and risk of staple-line leak. Bariatric surgeons will appreciate the data compiled herein to better inform their patients of the risks and benefits.

METHODS: An electronic literature search of MEDLINE database plus manual reference checks of articles published on laparoscopic sleeve gastrectomy for morbid obesity and the risk of leak was complete. We analyzed 15 articles to provide a meta-analysis of the risk of leak after laparoscopic sleeve gastrectomy in morbid obesity. Three studies including 70 patients were revision patients.

RESULTS: Analysis of 15 series covering 1021 patients revealed an average leak rate for laparoscopic sleeve gastrectomy of 2.8+/-2.6% (range 0-8%). Almost all groups used both green and blue load staplers (when documented). Only 3 studies (151 patients) used staple-line reinforcement. Six of 151 patients (3.5 +/- 1.5%) using staple-line reinforcement developed leak. There were 20 of 870 patients (2.6 +/- 2.9%) which developed leaks in which the staple-line was not reinforced. There was no significant difference between groups. Most leaks were discovered within 3 days of surgery, usually at the esophagogastric junction. More than 90% were managed non-operatively.

CONCLUSION: The average leak rate after laparoscopic sleeve gastrectomy is 2.8%. Most leaks can be managed conservatively. The use of staple-line reinforcement is not found to decrease staple-line leak.
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S046

LAPAROSCOPIC SLEEVE GASTRECTOMY IN PATIENTS WITH BMI 30-34.9

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Introduction: The aim of this study is to analyze safety and excess weight loss in the midterm follow up of patients with BMI under 35.

Methods: Prospective study, not random; including patients that underwent LSG between March 2007 and January 2010. Analysis of Gender, Age, Weight, Preoperative Body Mass Index (BMI), Operating Room (OR) Time, Excess Weight Loss, Surgical complications, Postoperative Morbidity and Mortality.

Results: Follow up 12 month (6 to 30 months) There where 184 patients. Male: 68 patients, Female: 116 patients. Mean Age 39.5±10.8 (range 15 to 70) years. Mean Preoperative Weight: 91±15 (68-118) Kg. Mean Preoperative BMI: 33.3±4.1 (range 30 to 35) Kg/m². Mean Excess Weight: 22.5±5 (range 10.7 to 34) Kg. Mean OR Time 87.6±30 (60 to 150) min. Other procedures associated: Cholecystectomy, Banding Removal and Hiatal Hernia Repair. Weight Loss mean was 19±7 (range 7.6 to 44.3) Kg. at 6 months and 23.4±5 (range 7.6 to 36) Kg. at 12 months. Postoperative mean BMI was 26.4±3 (range 21.3 to 31.3) Kg/m² at 6 months and 24.6±4 (range 20 to 27) at 12 months follow-up. EBMIL% mean was 90±10.2 (range 81 to 134.4)% at 12 months. Morbidity: 7 patients (3.8%). No conversions, No Mortality

Conclusions: LSG is a safe and reproducible technique in patients with BMI under 35, with low morbidity and mortality so far. In our series this results are very encouraging with excellent weight loss in the midterm. Longer follow up is needed.

S047

ONE-YEAR HUMAN EXPERIENCE WITH A NOVEL ENDOLUMINAL, ENDOGASTRIC Bypass SLEEvE FOR MORBID OBESITY

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Introduction: Here we report the first series of patients with 1-year implantation of a novel, endoluminal, endoscopically-delivered and retrieved gastro-duodenal jejunal bypass sleeve (ValenTx, Inc. Carpineteria, CA). In this report, we present the safety, feasibility of the device, weight loss, and changes in co-morbidities.

Methods and Procedures: A prospective, single-center, 12-month trial was designed. The patients are morbidly obese individuals who meet the NIH criteria for bariatric surgery. The gastro-duodenal jejunal bypass sleeve (GJBS) is a 120cm sleeve secured at the esophago-gastric junction with endoscopic and laparoscopic techniques that is designed to create an endoluminal gastro-duodenal jejunal bypass. The device was implanted and, at the completion of the trial, retrieved with an endoscopic technique. The primary endpoints were safety and incidence of adverse events. The secondary outcomes included the percentage of excess weight loss (EWL) and changes in co-morbidities, specifically glucose control, use of anti-hyperglycemics, and changes in hemoglobin A1C levels.

Results: From July 2009 until August 2010, 13 patients were prospectively enrolled for the 1-year trial. The study included 5 men and 8 women with a mean pre-operative BMI of 42 Kg/m². One patient was excluded, at the time of endoscopic evaluation, due to inflammation at the GE junction. Two additional patients required early explantation of the device, within the first 4 weeks, due to patient intolerance. Upon explant of the device, both patients’ symptoms improved. In the remaining 10 patients, the device was implanted, left in-situ for 12 months, and then retrieved endoscopically.

Safe delivery of the cuff at the esophago-gastric junction was seen in all 12 patients who had device implants, without complication. No esophageal leak was seen immediately post-procedure or during follow-up. The sleeve device was well-tolerated within the bowel lumen during the 12-month study, specifically, no bowel erosions, ulceration, or pancreatitis was observed.

All ten patients reached the one-year mark. Of the 10, six had intact sleeves throughout the follow-up, without any evidence of cuff detachment during follow-up endoscopy. The mean percentage EWL, at one year, in this group was 54%. In the remaining four patients, partial cuff detachment was observed at follow-up endoscopy. As expected, the percentage excess weight loss was inferior in this group.

Co-morbidities measured included diabetes mellitus, hypertension, hyperlipidemia, and use of anti-hyperglycemics. Each of the measured co-morbidities showed improvement during the 12-month trial.

Conclusion: The endoluminal, gastro-duodenal jejunal bypass sleeve can be safely placed. The mid-term data shows it is well tolerated with a good safety profile. It achieves excellent weight loss results with improvement of co-morbidities.

S048

THE FEASIBILITY OF 2MM NEEDLE FORCEPS FOR LAPAROSCOPIC CHOLECDOCYSTECTOMY

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Objective: To determine the feasibility and limit of needle forceps for laparoscopic cholecystectomy (LC) and its usability for single incision laparoscopic cholecystectomy (TANKO) and choledocholithotomy.

Materials and methods: During 4-year period, 346 cases of LC were performed. 334 were conventional LC and 12 were TANKO. Conventional LC is performed with 2 puncture and 2 incision. 2 punctures are applied through thin caliber trocar ‘Mini-Port’ (Covedien, USA) with needle forceps ‘BJ needle’ (Niti-On Company, Japan). BJ-needle is a thin caliber grasper with a diameter of 2.1mm. The puncture sites are below the right costal margin on the mid-clavicular line (MC) and on the anterior-axillary line of the navel level (AA). Other incisions are 12mm trocar at umbilical site and 5mm below the left costal margin. TANKO is performed with one puncture at MC. We performed intraoperative cholangiography (IOC) routinely during cholecystectomy.

Results: Of 334 LC cases 304 (91%) were successfully completed with BJ-needle. Of other 30 cases 2 had to change to 5mm at MC and 28 changed to 5mm both MC and AA. 18 of 29 cases with history of biliary inflammation (4 were cholangitis and 25 were acute cholecystitis) were also completed without change of trocar (62%). There was no complication caused by using BJ-needle. It was comparable to conventional 5mm grasper during LC. Additionally, IOC can be performed through Mini-Port with catheter. IOC success rate was 99%. In all cases of TANKO with one puncture (10 cases), BJ-needle was very useful in grasping and retracting the gallbladder, and performing IOC was comfortable. BJ-needle was also useful during laparoscopic choledocholithotomy (Lcdl) not only using as an aid forceps and also as an alternative to 5mm grasper.
Conclusion: BJ-needle was feasible for conventional LC, Lcld and TANKO. More than 90% of LC cases could be performed successfully. One of the limitation was inflammation, but even in inflammatory cases, 60% of the cases could be completed.

**S049**

**RESIDUAL HEAT OF LAPAROSCOPIC ENERGY DEVICES — HOW LONG MUST THE SURGEON WAIT UNTIL TOUCHING ADDITIONAL TISSUE**  Henry Govekar, MD, Thomas N Robinson, MD, Greg V Stiegmann, MD, Francis T McGreevy, BSEE University of Colorado School of Medicine

**Introduction:** Energy devices are essential laparoscopic tools. Residual heat is defined as the increased instrument temperature after energy activation is completed. The purpose of our study was to determine how long a surgeon needs to wait prior to touching additional tissue without causing injury using four common laparoscopic energy sources.

**Methods:** Thermal imaging quantified instrument and tissue temperature ex vivo using monopolar, bipolar tissue fusion, ultrasonic and argon laparoscopic devices. To simulate real-life operative usage, each instrument was activated for 5 seconds 4 consecutive times with 5 second pauses between fires. Thermal conductivity to bovine liver tissue was measured at 2.5, 5, 10 and 20 seconds following the final activation. Results reported as mean +/- standard deviation.

**Results:** Maximum increase in instrument tip temperature was: monopolar (81±18°C), bipolar tissue fusion (46±19°C), ultrasonic (172±63°C) and argon beam (1±1°C); (p<0.05 for all comparisons). Temp increase of liver tissue resulting due to thermal conductivity from instrument tip was:

**Conclusions:** Peak instrument temperature was greatest in the ultrasonic device, followed by monopolar, bipolar tissue fusion then argon. Ultrasonic energy tips heated tissue >20°C for all time points (even for the 20 second rest period). In contrast, all other energy source's tissue conductivity was <20°C from baseline by 5 seconds. These practical findings may alter a surgeon's usage of these common energy devices.

**S050**

**RANDOMIZED COMPARISON OF STRAIGHT VERSUS ARTICULATING INSTRUMENTS FOR SINGLE-INCISION LAPAROSCOPY (SIL)**  Byron F Santos, MD, Taylor J Reif, BS, Nathaniel J Soper, MD, Eric S Hungness, MD Northwestern University Department of Surgery, Chicago, IL

**Introduction:** The increased technical difficulty of SIL compared to conventional laparoscopy raises concerns about its safety, and remains a barrier to widespread adoption. Novel instruments have the potential to improve SIL performance, but may come at an increased cost. We conducted a randomized comparison of SIL performance using conventional, straight laparoscopic instruments versus instruments capable of dynamic articulation using a previously validated SIL simulator.

**Methods:** Medical students were recruited for the study in accordance with an IRB-approved protocol. The subjects were randomized to use either straight or articulating instruments during a standardized, distributed training period consisting of 4 sessions. Subjects performed peg transfer (PEG) and pattern cutting (CIRCLE) tasks from the Fundamentals of Laparoscopic Surgery (FLS) using an FLS box trainer modified to accept a Covidien SILS Port™ with two working ports for instruments and one port for a 30-degree 5mm laparoscope. Subject performed the tasks using either two straight instruments or one straight instrument plus a disposable, articulating instrument in the dominant hand. Scores were recorded at baseline and after completion of the training period. Performance of FLS tasks was graded using standard time and accuracy metrics. Individual task scores were calculated for each participant, and normalized to previously published FLS scoring criteria used to distinguish competent (>54%) and non-competent surgeons (<54%).

**Results:** A total of 25 subjects completed the training period and were included in the analysis. Baseline scores for both tasks were low and similar between groups. All scores improved significantly over the training period. There was no statistically or clinically significant difference in the final scores between groups.

**Table 1. Performance (%) According to Instrument Type and Training**

<table>
<thead>
<tr>
<th>Instrument Type</th>
<th>Baseline</th>
<th>Articulating</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEG Baseline</td>
<td>27 ± 31</td>
<td>19 ± 24</td>
<td>0.48</td>
</tr>
<tr>
<td>Post-training</td>
<td>79 ± 16*</td>
<td>76 ± 17*</td>
<td>0.74</td>
</tr>
<tr>
<td>CIRCLE Baseline</td>
<td>5 ± 12</td>
<td>1 ± 4</td>
<td>0.34</td>
</tr>
<tr>
<td>Post-training</td>
<td>45 ± 21*</td>
<td>32 ± 20*</td>
<td>0.14</td>
</tr>
</tbody>
</table>

* P-value < .001 for improvement from Baseline to Post-training.

**Conclusion:** SIL performance improves with simulator training. Dynamic articulating instruments for SIL do not confer a performance advantage either at baseline or after a period of distributed training. Given their added cost, use of dynamic articulating instruments for clinical SIL should be selective and preceded by simulator training.

**S051**

**SINGLE PORT LAPAROSCOPIC CHOLECYSTECTOMY WITH TRANSENTERIX SPIDER: EARLY SUCCESS IN HUMANS.**  Chan W Park, MD, Hector R Herrera Cabral, MD, Roberto J Manson, MD, Aurora D Pryor, MD Duke Endosurgery, Department of Surgery, Duke University

**Introduction:** Single port cholecystectomy is one of the more commonly performed single site/access surgeries and is accomplished with a variety of techniques. However, single port surgery is often limited by poor visualization and ineffective or difficult triangulation. The TransEnterix SPIDER system can overcome many of these challenges of single site surgery, and has previously been shown to be effective in a porcine model. We present our initial experiences and results from human cases.

**Methods:** Seven patients with confirmed diagnosis of symptomatic cholelithiasis or gall bladder polyps (confirmed by right upper quadrant ultrasound and laboratory testing) underwent successful single port laparoscopic cholecystectomy with the SPIDER system; performed by one of two surgeons. One surgeon had extensive training with the system and one was an experienced laparoscopic surgeon without any previous SPIDER experience. Operative times and peri-operative complications were recorded at the time of surgery. All patients were followed for the first 24 hours, at 2 weeks, and 1 month post-operatively.

**Results:** There were no mortalities or significant morbidities associated with single port laparoscopic cholecystectomy using the SPIDER system. All cases were successfully completed by the operating surgeon within an average operating time of 63 minutes (range 42-82 minutes). No ancillary ports or punctures were required. Two patients had acute cholecystitis, and the remainder had gallstones or polyps without acute disease. Subjectively, patients related little pain compared to standard laparoscopic cholecystectomy. Cosmetically, all incisions were hidden in the umbilicus. No wound complications were evident at any post-operative evaluation.
Conclusion: The TransEnterix SPIDER can be used safely and successfully for single port laparoscopic cholecystectomy. The system appears to be intuitive and easily adopted by an experienced laparoscopic surgeon. Prospective randomized studies are underway to confirm benefits relating to cosmesis and post-operative pain.

S052
MINIATURE SURGICAL ROBOT FOR LAPAROENDOSCOPIC SINGLE-INCISION COLECTOMY Tyler D Wortman, BS, Oleg Dolghi, MD, Amy C Lehman, MS, Ryan L McCormick, Shane M Farritor, PhD, Dmitry Oleynikov, MD University of Nebraska-Lincoln, University of Nebraska Medical Center

Introduction: The objective of this study is to demonstrate the effectiveness of using a multi-functional miniature in vivo robotic platform to perform a single-incision colectomy. Standard laparoscopic techniques require multiple ports to perform the operation. Conventional single-incision colectomy is very complicated due to lack of triangulation of instruments and the restriction of single fixed port position. A miniature robotic platform that is completely inserted into the peritoneal cavity through a single incision has been designed and built. The robot can be quickly repositioned, thus enabling multi-quadrant access to the abdominal cavity and providing improved visualization and articulation as well as better triangulation control.

Methods and Procedures: The miniature in vivo robotic platform used in this study consists of a multi-functional robot and a remote surgeon interface. The robot is comprised of two arms with shoulder and elbow joints. Each forearm is equipped with specialized interchangeable end effectors. Between the arms, near the body of the robot, is a pan and tilt camera that can provide stereoscopic visualization capabilities. Each arm is inserted separately into a single two-inch incision and then assembled within the peritoneal cavity. The robot is then mated to a support rod and rotated towards the pelvis. A surgeon is able to perform standard surgical tasks by utilizing the surgeon interface that is located near the patient in the operating room. The interface consists of a monitor, a foot pedal for locking, clutching, and scaling the workspace, and a custom master-slave control device to operate the robot arms.

Results: Five robotic colectomies were performed in a porcine model. For each procedure, the robot was completely inserted into the peritoneal cavity and the surgeon manipulated the user interface to control the robot to perform the colectomy. The robot was positioned over the sigmoid colon in the left pelvis of the swine and was used, with one grasper hand and one cautery hand, to dissect out the mesentery of the sigmoid colon down to the pelvis. The colon was mobilized from its lateral attachments. The robot was used to assist in a placement of an EEA stapler to transect a sigmoid colon in a standard fashion. Robotic mobilization was accomplished easily.

Conclusions: The adoption of both laparoscopic and single-incision colectomies is currently constrained by the inadequacies of existing instruments. This multi-functional robot provides a platform that overcomes existing limitations by operating completely within the peritoneal cavity and improving visualization and dexterity. By repositioning the small robot to the area of the colon to be mobilized the ability of the surgeon to perform complex surgical tasks was improved. Further, the success of the robot performing a completely in vivo colectomy suggests the feasibility of using this robotic platform to perform other complex surgeries through a single incision.

S053
RE-EVALUATION OF NEEDLESCOPIC SURGERY Nobumi Tagaya, PhD, Keiichi Kubota, PhD Second Department of Surgery, Dokkyo Medical University, Tochigi, Japan

Background: Single port surgery (SPS) has gradually penetrated into the surgical field. However, we proposed the re-evaluation of needlescopic surgery (NS) to improve an esthetic result and postoperative quality of life of the patients and reduce costs and stress of surgeons, and evaluated the results of needlescopic surgeries in our department.

Methods: We experienced NS in 193 patients between May 1998 and August 2010. Their surgical procedures were cholecystectomy in 148 patients, bullectomy in 11, thyroidectomy and axillary lymph node dissection in each 10, splenectomy and abdominal wall hernia repair in each 3, appendectomy, adenallectomy, unroofing of cyst in each 2, and lysis of adhesion and resection of gastric tumor in each one, respectively. Under general anesthesia, one 12-mm and 2 or 3 of 2- or 3-mm ports were introduced into the operative field. The specimen was retrieved from the 12-mm wound using a plastic bag.

Results: The procedure was successfully completed in all patients without the conversion to open procedure. Four (5.4%) of 148 cholecystectomies required an exchange to 5-mm instruments. There were no perioperative complications. Technical points were no direct organ mobilization to avoid organ injuries, the rotation of operating table and the utilization of organ gravity to create the better operative field, the minimum use of needlescope to perform safe maneuver and the improvement of bi-hand technique.

Conclusions: Needlescopic Surgery is a safe and feasible procedure to achieve a minimal invasive surgery. We should have better option of needlescopic surgery.

S054
TRANSGAVIAL CHOLECYSTECTOMY VERSUS MINILAPAROSCOPIC CHOLECYSTECTOMY Angel Cuadrado-Garcia, MD PhD, José F Noquera, MD PhD, Rafael Morales, MD, Carlos Dolz, MD PhD, Jose M Olea, MD, Jose C Vicens, MD PhD, Luis Lozano, MD Hospital Son Llatzer, Palma de Mallorca. SPAIN.

Background: Natural oriice transluminal endoscopic surgery (NOTES) makes it possible to perform intraperitoneal surgical procedures with a minimal number of access points. Currently, it is not possible to perform these interventions without the help of abdominal wall entryways, so these procedures are hybrids. This report presents a prospective clinical series of 150 patients comparing Transvaginal NOTES vs minilaparoscopy.

Methods: The study comprised a clinical series of 75 consecutive nonrandomized women who underwent a transvaginal NOTES cholecystectomy vs a minilaparoscopic procedure control group of 75 female patients.

Results: The scheduled surgical intervention was performed for all women. No intraoperative complications occurred. One patient had mild hematuria that resolved in less than 12 h, but no other big complications occurred during an average follow-up period of at least 1 year. No dispareunia was found in NOTES group. Operative time was longer in NOTES group but without statistical significance. Of the 75 NOTES patients, 65 were discharged in 24 h, and 10 were discharged less than 12 h after the procedure.

Conclusion: Hybrid transvaginal NOTES cholecystectomy and minilaparoscopy are good surgical models for minimally invasive surgery. They can be performed by surgical teams where laparoscopy is practiced regularly and using the instruments normally used for endoscopy. Due to the reproducibility of the intervention and the ease of vaginal closure, hybrid transvaginal procedures are a safe new option for cholecystectomy in women and they will permit further development of NOTES in the future.
S055

QUANTIFYING MENTAL WORKLOAD OF SURGEONS PERFORMING NOTES PROCEDURES

Bin Zheng, MD PhD, Erwin Rieder, MD, Maria A Cassera, BS, Danny V Martinec, BS, Lee L Swanström, MD Department of Surgery, University of British Columbia, Canada; Minimally Invasive Surgery Program, Legacy Health, Portland, Oregon

INTRODUCTION: During Natural Orifice Transluminal Endoscopic Surgery (NOTES), surgeons often have difficulties orienting the surgical view and manipulating instruments accurately, which increases surgeons’ mental and physical fatigue. Overloaded surgeons may have problems making logical decisions and maintaining dexterity during an operation. Therefore, quantifying surgeons’ mental workload provides an opportunity to understand surgeons’ response to the challenges posed by NOTES, and it is an essential step for developing an effective strategy to ensure safe performance of NOTES procedures. We took initiative to quantify mental workload by measuring spared mental resources of surgeons while performing NOTES training tasks. We hypothesized that surgeons would require more mental resources while performing NOTES procedures than during laparoscopic procedures; thus, leaving less spared mental resources for effective performance of a secondary task.

METHODS: Assessment was conducted in two stages. First, NOTES training tasks were performed in a human mannequin bench-top model, and second, in a hybrid anatomic model. In the bench-top model, surgeons were required to complete a ring transfer task, passing a ring as many times as possible between two graspers placed through a dual channel endoscope in a time period of 6 minutes. In the hybrid anatomic model, a pig liver and gall-bladder were placed inside a standard laparoscopic training box. Surgeons were required to dissect the gall-bladder from the liver-bed using cautery and graspers placed through an NOTES operating platform. While performing the NOTES task in either the bench-top or the hybrid model, a secondary visual detection task was introduced to assess mental workload. The surgeon was required to identify 60 true visual signals among 300 false signals that were displayed randomly on an adjacent monitor placed 15 degrees off axis to the surgical monitor. Surgeons were asked to repeat the trials using laparoscopy. Surgeons’ performance of the primary and secondary tasks using both the NOTES and laparoscopic approaches were compared.

RESULTS: Of the 9 surgeons who completed trials in the bench-top model, a mean of 13.0 ± 4.0 rings were successfully transferred between targets using laparoscopy, in contrast to a mean of 1.2 ± 1.0 rings when performing the task using the NOTES platform (P <0.001). While transferring rings by laparoscopy, surgeons were able to detect 74% of true visual signals presented on the side monitor, which is significantly higher than the 54% detection rate when performed using the NOTES platform (P = 0.005). In the hybrid model, 10 surgeons were able to detect 56% of true visual signals displayed on the side monitor while performing the cholecystectomy task. This was found to be significantly higher (P = 0.006) than when the task was performed using the NOTES platform (39%).

CONCLUSION: Results support our hypothesis that performance of a task using the NOTES platform increases surgeons’ mental workload, when compared to task performance using standard laparoscopy. Since difficulty in performing NOTES is associated with flexible endoscopy, we expect that new operating systems providing stable platforms would help to decrease the mental workload of surgeons and enhance the safety in performing NOTES.

S056

TRANSANAL OR TRANSABDOMINAL SPECIMEN EXTRACTION AFTER LAPAROSCOPIC LEFT COLECTOMY: CLINICAL PROSPECTIVE EVALUATION OF PERITONEAL CONTAMINATION RISKS

Joel Leroy, MD FRCS, Federico Costantino, MD, Michele Diana, MD, Jacopo D’Agostino, MD, Didier Mutter, MD PhD, James Wu, MD, Jacques Marescaux, MD FRCS FACS IRCAD-EITS, Department of Digestive and Endocrine Surgery, University Hospital of Strasbourg, France

INTRODUCTION: This prospective study aims to evaluate bacterial peritoneal contamination between different techniques of transabdominal or transanal specimen extraction in a consecutive cohort of patients requiring laparoscopic left colostomies.

METHODS: During a 6-month period, we consecutively evaluated the presence of peritoneal cavity contamination in laparoscopic left colectomies using two different specimen extraction techniques, the transanal route with opening of the rectal stump or the classic route (transabdominal extraction using a short laparotomy). Systematic intraoperative bacteriological sampling was performed at the end of the procedure. Intraoperative data as well as microbiological and postoperative outcomes were evaluated prospectively.

RESULTS: A total of 26 consecutive patients were included prospectively. In 16 (61.5%) patients, the specimen was delivery transanally. In the remaining 10 (38.5%) patients, a mini-laparotomy was used. All procedures were performed completely by laparoscopy. Mean operative time was 120 (+/-41.9) and 117 (+/-45.2) minutes for the transanal and the transabdominal route respectively. Contamination was present in 100% of intraoperative samples in both groups. Polymicrobial growth was present in all peritoneal culture samples during the transanal specimen extraction but only in 80% patients when the transabdominal route was used. No wound infection-related complication were observed in both groups. Only a pelvic abscess was observed in 1 patient in the transabdominal group.

Conclusion: Peritoneal contamination may occur in laparoscopic colorectal surgery, regardless of the route chosen for surgical specimen extraction. The actual published rate of morbidity related to abdominal incisions during laparoscopic surgical procedures (infection and incisional hernia) can be reduced by specimen extraction through natural orifices. Extraction of the specimen through the anus does not increase risk of wound or intra-abdominal infection. Specimen anus delivery can be the way to allow a full development of NOTES techniques. More studies are nevertheless required to confirm these findings.

S057

MAGNETIC SCOPE GUIDE DURING ENDOSCOPIC EXAMINATIONS OF COLON

Miroslaw Szura, MD PhD, Krzysztof Bucki, MD, Andrzej Matyja, MD PhD MEDICINA Specialist Diagnostic & Therapeutic Centre

INTRODUCTION: Colorectal cancer is the most common cancer in Europe. Early diagnosis and treatment gives a chance for complete recovery of the patients. Screening colonoscopies in the symptom-free patients are currently performed on wide scale. The examinations are performed under local anaesthesia which does not eliminate all discomfort and pain related to the examination. The aim of the study is evaluation of magnetic scope navigation in screening endoscopic examination performed to detect early stage of colorectal cancer.

METHODS AND PROCEDURES: A study group consisted of 200 patients, aged 40-65 years, who were free from colon cancer symptoms. All patients underwent complete colonoscopy under local anaesthesia. The equipment was fitted with the option allowing three dimensions observation of instrument
compared with conventional LAP utilizing an additional fenistil lymph node yield, adequacy of margins, and operative time were placed, mated with the anvil and ired. Results regarding the loose rectal purse-string suture was tightened. The stapler with the reinserted TEM platform. When the anvil was delivered loose rectal purse-string suture was sewn at the proximal rectum was introduced into the proximal colon and secured with a of a stapled colorectal anastomosis a 29-mm EEA stapler anvil was delivered transanally and subsequently resected. For the creation instrument length limited further dissection. The specimen was hemorrhoidal artery, sigmoid mobilization was continued until after transluminal access through the mesorectum and into transrectal procedure standard TEM instrumentation was used. to either TR (n=4) or LAP (n=2) sigmoidectomy. A simulated INTRODUCTION: Our group previously demonstrated the feasibility and safety of NOTES transanal endoscopic rectosigmoid resection in a swine survival study using TEM alone or in combination with transgastric endoscopic assistance to extend the length of colon mobilized. Transanal endoscopic rectosigmoid resection using TEM with stapled coonal anal anastomosis (TEM, n=15) was prospectively compared to laparoscopic sigmoid resection with stapled colorectal anastomosis (Lap, n=15) in a swine survival study. METHODS: NOTES transanal rectosigmoid procedures were performed as previously described and laparoscopic rectosigmoid resection was performed using 4 trocars. All anastomoses were evaluated endoscopically. Animals were survived for 2 weeks and necropsy findings including histological evaluation of the anastomoses were recorded. Operative and postoperative outcomes were evaluated and compared between the groups using Fisher’s Exact and Student’s T tests. RESULTS: The mean operative time was 83 minutes (range, 55-175) in the TEM vs. 57 minutes (range, 41-105) in the Lap group (p<0.006). There were no differences in the average length of colon resected transanally in the TEM group (7cm, range 5.5-10.5) vs. transabdominally in the Lap group (7.6 cm, range 6.10.5, p=0.268). No intraoperative organ injury or significant bleeding was noted in either group and all stapled anastomoses were intact. All Lap animals vs. none in the TEM group required narcotics postoperatively in addition to NSAIDS (p<0.001). Postoperatively, TEM animals passed stool at an average of 2 days (range, 1-5) vs. 3.8 days in the Lap group (range, 2-7, p=0.004). One TEM animal developed progressive renal failure from distal urethral obstruction and was sacrificed on postoperative day 13. One Lap animal developed a port-site hernia on postoperative day 1 that required surgical repair. Twelve animals (40%) developed obstructive symptoms (2 TEM vs. 10 Lap animals, p=0.003) requiring either digital or incision for specimen retrieval. Results: Transrectal recto-sigmoid dissection by TEM was achieved in all (4/4) attempts. En bloc sigmoid resection revealed similar numbers of lymph nodes in the TR group (median: 5; range: 3-6) compared to the LAP group (median 4.5; range: 2-7). One pure NOTES approach using standard instrumentation failed to resect the previously created lesion due to limited specimen length (10 cm) after transanal delivery. Three TR procedures required additional laparoscopic assistance to adequately mobilize the sigmoid colon for transanal resection and pure NOTES colorectal anastomosis. Mean length of the TR resected specimen was 16±4 cm compared to 31±9 cm achieved by LAP (p<0.01). Insufficient anastomosis was detected in one pure TR attempt (1/4). Transrectal operative time was significantly longer compared to LAP (247 ± 15 min vs. 110 ± 14 min, p<0.01).

Conclusion: Lymph node yield during TR-sigmoidectomy was found to be similar to that obtained by the conventional laparoscopic assisted approach. Standard TEM instrumentation, however, did not allow adequate colon mobilization, which was the most pressing technical challenge and has to be addressed in additional studies. A TR hybrid approach, using laparoscopic assistance, could initially overcome several drawbacks and currently appears to be the more appealing option for transrectal colorectal resection.

S059

LAPAROSCOPIC VERSUS NOTES RECTOSIGMOID RESECTION USING TRANSANAL ENDOSCOPIC MICROSCUROGY (TEM) IN A SWINE SURVIVAL MODEL

Patricia Sylla, MD, Min-Chan Kim, MD, Abdulmetin Dursun, MD, Liliana Bordeianou, MD MPH, Ifode Ajarid, MD, Yevdenur Cizginer, MD, Brian Turner, MD, Denise W Gee, MD, Mari Mino-Kenudson, MD, William R Brugge, MD, David W Rattner, MD Massachusetts General Hospital

RESULTS:

- **transrectal colorectal anastomosis. Mean length of the TR resected specimen was 16±4 cm compared to 31±9 cm achieved by LAP (p<0.01). Insufficient anastomosis was detected in one pure TR attempt (1/4). Transrectal operative time was significantly longer compared to LAP (247 ± 15 min vs. 110 ± 14 min, p<0.01).**

Conclusion:

Lymph node yield during TR-sigmoidectomy was found to be similar to that obtained by the conventional laparoscopic assisted approach. Standard TEM instrumentation, however, did not allow adequate colon mobilization, which was the most pressing technical challenge and has to be addressed in additional studies. A TR hybrid approach, using laparoscopic assistance, could initially overcome several drawbacks and currently appears to be the more appealing option for transrectal colorectal resection.

S058

A PURE NATURAL ORIFICE TRANSRECTAL APPROACH FOR ONCOLOGIC RESECTION OF THE RECTO-SIGMOID: AN EXPERIMENTAL RANDOMIZED COMPARISON TO CONVENTIONAL LAPAROSCOPY

Erwin Rieder, MD, Georg O Spau, MD, Yashodhan S Khajanchee, MD, Danny V Martinec, BS, Brittany N Arnold, BS, Lee L Swanstrom, MD, Mark H Whiteford, MD MIS Program, Legacy Health, Portland, OR

Objective: Natural orifice translumenal endoscopic surgery (NOTES) has long been criticized for breaching an otherwise intact organ. A transrectal approach though, makes immense sense for incisionless colorectal surgery as the access colotomy is incorporated into subsequent anastomosis. As cancer is one of the primary indications for left sided colon resections, surgical oncological requirements also have to be met by a NOTES procedure. The aim of this experimental cadaver-study was to assess whether a pure transrectal (TR) recto-sigmoidectomy using standard transanal endoscopic microsurgery (TEM) instrumentation can be performed with strict adherence to oncological principles similar to a conventional laparoscopic-assisted approach (LAP).

Methods: Frozen then thawed male cadavers were randomized to either TR (n=4) or LAP (n=2) sigmoidectomy. A simulated polyp was created about 20 cm from the anal verge. For the transrectal procedure standard TEM instrumentation was used. After transluminal access through the mesorectum and into the abdominal cavity, retrograde en bloc mobilization of the recto-sigmoid was attempted. After ligation of the superior hemorrhoidal artery, sigmoid mobilization was continued until instrument length limited further dissection. The specimen was delivered transanally and subsequently resected. For the creation of a stapled colorectal anastomosis a 29-mm EEA stapler anvil was introduced into the proximal colon and secured with a purse-string suture with a long tail left attached. Consecutively, a loose rectal purse-string suture was sewn at the proximal rectum with the reinserted TEEM platform. When the anvil was delivered into the rectum by using the attached suture-tail as a handle, the loose rectal purse-string suture was tightened. The stapler was placed, mated with the anvil and fired. Results regarding lymph node yield, adequacy of margins, and operative time were compared with conventional LAP utilizing an additional fenistil localization in the bowel. The examination was performed by three experiences endoscopists, each of whom performed alone over 5000 colonoscopies. The patients were assigned to two groups with or without 3D navigation. Each group consisted of 100 cases matched by gender, age, and BMI. The authors compared the duration of introducing instrument to cecum, pulse rate before the examination and at the time of reaching cecum by the instrument, and subjective pain evaluation by the patient on the Visual and Analogue Scale.

RESULTS: Group I consisted of 54 women and 46 men at the mean age of 54.6 years, mean BMI 27.8, and group II of 58 women and 42 men, mean age 55.1 years and mean BMI 26.4. The average time until reaching cecum by the instrument was 216 sec. in group I and 181 sec. in group II. Pain measured on the 10-point VAS scale was at the level 2.44 in group I and 1.85 in group II. The results shown significantly shorter time until reaching cecum by the instrument and to lower pain intensity during the examination reported by the patients. No significant differences were found between both groups for the pulse measurements.

CONCLUSIONS: 3D navigation during colonoscopy allows to reduce time until reaching cecum by the instrument and to lower pain intensity subjectively reported by the patients. The use of 3D and the possibility to observe instrument localization and manoeuvres brings more comfort to the patients.

S059

LAPAROSCOPIC VERSUS NOTES RECTOSIGMOID RESECTION USING TRANSANAL ENDOSCOPIC MICROSCUROGY (TEM) IN A SWINE SURVIVAL MODEL

Patricia Sylla, MD, Min-Chan Kim, MD, Abdulmetin Dursun, MD, Liliana Bordeianou, MD MPH, Ifode Ajiari, MD, Yevdenur Cizginer, MD, Brian Turner, MD, Denise W Gee, MD, Mari Mino-Kenudson, MD, William R Brugge, MD, David W Rattner, MD Massachusetts General Hospital

INTRODUCTION: Our group previously demonstrated the feasibility and safety of NOTES transanal endoscopic rectosigmoid resection in a swine survival study using TEM alone or in combination with transgastric endoscopic assistance to extend the length of colon mobilized. Transanal endoscopic rectosigmoid resection using TEM with stapled coonal anal anastomosis (TEM, n=15) was prospectively compared to laparoscopic sigmoid resection with stapled colorectal anastomosis (Lap, n=15) in a swine survival study.

METHODS: NOTES transanal rectosigmoid procedures were performed as previously described and laparoscopic rectosigmoid resection was performed using 4 trocars. All anastomoses were evaluated endoscopically. Animals were survived for 2 weeks and necropsy findings including histological evaluation of the anastomoses were recorded. Operative and postoperative outcomes were evaluated and compared between the groups using Fisher’s Exact and Student’s T tests.

RESULTS: The mean operative time was 83 minutes (range, 55-175) in the TEM vs. 57 minutes (range, 41-105) in the Lap group (p=0.006). There were no differences in the average length of colon resected transanally in the TEM group (7cm, range 5.5-10.5) vs. transabdominally in the Lap group (7.6 cm, range 6.10.5, p=0.268). No intraoperative organ injury or significant bleeding was noted in either group and all stapled anastomoses were intact. All Lap animals vs. none in the TEM group required narcotics postoperatively in addition to NSAIDS (p<0.001). Postoperatively, TEM animals passed stool at an average of 2 days (range, 1-5) vs. 3.8 days in the Lap group (range, 2-7, p=0.004). One TEM animal developed progressive renal failure from distal urethral obstruction and was sacrificed on postoperative day 13. One Lap animal developed a port-site hernia on postoperative day 1 that required surgical repair. Twelve animals (40%) developed obstructive symptoms (2 TEM vs. 10 Lap animals, p=0.003) requiring either digital or incision for specimen retrieval.
endoscopic dislodgement of a hematoma at the anastomosis on day 3-5 following procedures. At necropsy, TEM animals gained an average 3.1 kg (range, -3 to +10) vs. 2.6 kg (range, -2 to +8) in the Lap group (p=0.6). Staple lines were located an average 3.3 cm from the anal verge in the TEM group (range, 2.5-4.5) vs. 14.6 cm (range, 9.5-25) in the Lap group (p<0.001). Histopathology analysis demonstrated healthy granulation tissue at all anastomoses with microabscesses around the staples in 5/15 TEM vs. 5/15 Lap colorectal specimens.

CONCLUSIONS: Relative to the laparoscopic approach, NOTES rectosigmoid resection using TEM is safe in a porcine survival model and associated with faster recovery of bowel function. A high incidence of symptomatic hematoma at the stapled anastomoses was noted in the laparoscopic group which may be related to a more significant ileus.

S060
LAPAROSCOPIC REMOVAL OF ADJUSTABLE GASTRIC BAND WITH CONVERSION TO SLEEVE GASTRECTOMY
Joshua B Alley, MD FACS, Amit Parikh, DO, Stephen J Fenton, MD, Donovan N Tapper, MD, Richard M Peterson, MD MPH FACS University of Texas Health Science Center at San Antonio; Wilford Hall Medical Center

Introduction: Approximately 33% of patients undergoing laparoscopic adjustable gastric banding are reported to experience failure of weight loss, intolerance of the band, or both, resulting in removal of the band and conversion to another weight loss operation. We present our experience with single-stage laparoscopic removal of adjustable gastric band and conversion to sleeve gastrectomy.

Methods: We retrospectively reviewed all patients from January 2005 to September 2010 who underwent laparoscopic removal of adjustable gastric band with revision to sleeve gastrectomy. Outcomes, including weight loss, body mass index (BMI) change, and postoperative morbidity, were documented.

Results: Ten patients underwent laparoscopic removal of adjustable gastric band with conversion to sleeve gastrectomy. Seven patients had their initial band surgery in our program, out of 82 patients who had band insertions during the study period. Three patients were referrals from outside programs. Mean (±SD) preoperative age and BMI were 46.5 ± 9.8 and 36.4 ± 2.5. Failure of weight loss (n=6) was the most frequent reason for removal and conversion. Nine of 10 patients underwent postoperative contrast swallow studies, and no patient demonstrated a radiographic or clinical leak. One patient (10%) returned to the operating theater for bleeding at the gastric staple line; this was the only morbidity. Length of stay was 2.1 ± 0.7 days (range, 1-4). Mean follow up was 5.2 ± 3.1 months. Excess weight loss (EWL) and excess BMI loss (EBL) were 31.6% and 41.7% at 6 months (n=6), and 40.3% and 49.3% at 12 months (n=1). There was no statistically significant difference in %EWL and %EBL between the revision group and our primary laparoscopic sleeve gastrectomy group.

Summary: For patients with failure of weight loss, intolerance of adjustable gastric band, or both, single-stage laparoscopic adjustable gastric band removal with conversion to sleeve gastrectomy is feasible. It can be accomplished with low morbidity, and yields early weight loss results comparable to primary sleeve gastrectomy.

S061
LAPAROSCOPIC DUODENOJEJUNAL BYPASS WITH SLEEVE GASTRECTOMY FOR MORBID OBESITY
C Palanivelu, MCH FACS FRCS, P Praveen Raj, MS, P Senthilnathan, MS DNB, S Rajapandian, MS DNB, C Chandramaliteeswaran, MS GEM Hospital

INTRODUCTION: Bariatric surgeries are now redefined as metabolic surgeries given the excellent resolution of metabolic derangements accompanying obesity. Duodenoejunal bypass (DB) is a novel metabolic surgery based on foregut hypothesis. Duodenoejunal bypass as a standalone procedure has been reported for treating diabetes in non-obese subjects. Sleeve gastrectomy is combined for obese subjects. DJB with sleeve gastrectomy is proposed as an ideal alternative to RYGB with the stated advantages: 1. Preservation of pyloric mechanism prevents dumping syndrome. 2. Reduced alimentary limb tension. AIM: The aim of this study was to analyze the short term outcomes of laparoscopic duodenoejunal bypass with sleeve gastrectomy for morbidly obese patients. PATIENTS AND METHODS: Data from 38 patients who underwent laparoscopic duodenoejunal bypass with sleeve gastrectomy at our institute were taken up for analysis. Inclusion criteria was following the Asian Pacific Bariatric Surgery Society guidelines including those with a BMI>37 or BMI> 32 in the presence of diabetes mellitus or another two significant comorbidities related to obesity. TECHNIQUE: Sleeve gastrectomy performed and DJ transected. Jejunum divided 50cm distal to DJ flexure. 75-100cm alimentary limb fashioned retrocolic and hand sewn end to end duodenojejunostomy done. Intestinal continuity restored with stapled jeuno-jejunostomy. Mesenteric rents closed. RESULTS: Study population included 38 patients with 23 males and 15 female patients. Age ranged from 31-48 years. Following a mean follow-up of 9 months, the excess body weight loss was 72% with a 92% resolution of diabetes, 88% resolution of hypertension and 86% resolution of dyslipidemia. There was no mortality. CONCLUSION: Laparoscopic duodenoejunal bypass with sleeve gastrectomy is safe and effective in achieving durable weight loss and excellent resolution of co-morbidities. Long term follow up studies are needed.

S062
PATIENT REPORTED RESOLUTION OF GASTROESOPHAGEAL REFLUX DISEASE (GERD) AFTER ADJUSTABLE GASTRIC BANDING: -1 YEAR INTERIM RESULTS OF LAP-BAND AP EXPERIENCE (APEX) STUDY: A PROSPECTIVE, MULTI-CENTER, OPEN-LABEL LONGITUDINAL PATIENT OBSERVATIONAL STUDY
George Woodman, MD, Robert Cywes, MD, Helmhut T Billy, MD, Michael Oefeelen, MD FACS, Ted Okerson, MD FACP Midsouth Bariatrics; Jacksonville Weight Loss Center; Ventura Advanced Surgical Associates; Allergan Pharmaceuticals, Inc

Introduction: Bariatric surgery has been established as an effective treatment to reduce weight in severely obese patients (> 40 kg/m2 OR > 35 kg/m2 with > one co-morbidities) refractory to behavioral and medical therapies. Numerous co-morbid illnesses (e.g. GERD, etc.) have been associated with obesity. This study reports the 1 year resolution and/or improvement of GERD after surgical placement of the adjustable gastric band (AGB) (AP Band, Allergan, Irvine, CA) as documented by patient-reported outcomes and/or GERD medication reduction/discontinuation and the accompanying percent excess weight loss (EWL), and co-morbidity benefits.

Methods: The APEX study is an ongoing 5-year, prospective, multi-center, open-label, observational study which will assess weight reduction, co-morbidities and QOL after implantation of
the gastric band (NCT00501085). All patients provided informed consent. This is an interim analysis of 112 subjects who reported daily medical therapy for GERD before AGB and who have completed the 1 year post-operative scheduled visit.

**Results:** At baseline, 165 out of 436 subjects (38%) reported GERD requiring daily medical therapy, with data from 112 containing sufficient information to assess outcome at 48 weeks. Complete resolution of GERD was reported in 77 patients (69%), with improvement in 27 patients (24%), no change in 7 patients (6%) and worsening in 1 patient (1%). Overall, 93% had resolution and/or improvement in GERD. Baseline BMI was not significantly different among the 4 responder groups. Mean BMI change and the %EWL was -9.1/47.6%, -8.7/48.4%, -6.7/41.7% and -9.2/45.2% in the four groups respectively. %EWL and reductions in BMI were similar among groups. As occurred in patients with GERD, resolution or improvement also occurred in other pre-existing co-morbidities measured: depression (71%), hyperlipidemia (57%), hypertension (78%), obstructive sleep apnea (69%) and type 2 diabetes (88%). Quality of life as measured by the Obesity and Weight Loss Quality of Life instrument also improved.

**Conclusion:** GERD PRO symptoms and medication requirements were reduced in severely obese patients after surgical intervention with the LAP-BAND AP® system. These improvements tended to be greater in those with a greater %EWL, but this was not statistically different. Other obesity-related co-morbidities also improved, along with quality of life. These data suggest that the LAP-BAND AP® offers an important therapeutic approach to severe obesity which may also lead to clinically meaningful reductions in multiple obesity-related co-morbidities.

**S063**

**LAPROSCOPIC ROUX-EN-Y GASTRIC BYPASS REDUCES ELEVATED GLUCOSE-6-PHOSPHATE DEHYDROGENASE ACTIVITY IN MORBIDLY OBSESE DIABETIC PATIENTS**

Andrew Schneider, Dhvajbahadur Rawat, PhD, Steve Weinstein, MD, Sachin Gupte, MD PhD, William Richards, MD University of South Alabama College of Medicine

**INTRODUCTION:** Glucose-6-phosphate dehydrogenase (G6PD) is an important enzyme in lipid and glucose metabolism. Participating in the rate limiting step of the pentose phosphate pathway, G6PD provides the majority of NADPH to cells for lipid biosynthesis. Over the past years, our lab (SG) found G6PD to be more active in obese diabetic animal models versus lean controls. G6PD has also been found to be up-regulated in diabetic models in both adipose tissue as well as liver. This has led us to believe that G6PD over-expression plays an important role in the development of type 2 diabetes. We hypothesized that G6PD activity levels (blood, liver, adipocyte, omentum) in morbidly obese type 2 diabetic patients would be higher than morbidly obese non-diabetic patients and that G6PD levels would fall following Laparoscopic Roux-en-Y Gastric Bypass (LRYGB).

**METHODS:** Patients scheduled for gastric bypass were recruited for the IRB approved study and placed in either the diabetic (n=16) or non-diabetic group (n=16) based on their 1. history, 2. medication use and 3. hemoglobin A1C percentage (Diabetic, HgBA1c > 6.5 %, Non Diabetic. HgBA1c < 6.0 %). Blood samples were collected at baseline and three months post operatively. Liver, adipose, and omental samples were taken during surgery. All results are expressed as mean ± SEM and were compared statistically using the Mann-Whitney U test. P < 0.05 (*) were considered significant.

**RESULTS:** We found a higher (P<0.05) Triglyceride, HOMA-IR, and RBC G6PD activity, in diabetics compared to non diabetics before surgery. There was no significant difference in BMI, or G6PD tissue levels (omentum, liver, subcutaneous fat). At three months post-operatively, the diabetic group (n=4) showed a significant decrease in RBC G6PD activity to 1.4 ± 0.6 nmol/min/mg protein, while BMI decreased 17.8%±3.0.

**CONCLUSION:** These preliminary results suggest morbidly obese diabetic patients have elevated levels of G6PD activity compared to non-diabetic patients and that G6PD levels decrease following LRYGB. This opens the door to further research on G6PD over-expression as a causal mechanism of type 2 diabetes and into the mechanism of action for remission of type 2 diabetes after LRYGB.

**S064**

**LAPAROSCOPIC ROUX-EN-Y GASTRIC BYPASS IS SAFE AND EFFECTIVE IN MORBIDLY OBSESE PATIENTS WITH CIRRHOSIS**

Jayme B Stokes, MD, Nicholas H Pope, MD, Mohamed Dahman, MD, Sean C Kumer, MD, Timothy M Schmitt, MD, Bruce D Schirmer, MD, Peter T Hallowell, MD University of Virginia

**Background:** Limited data currently exists regarding the performance of laparoscopic Rou-en-y gastric bypass (LRGB) in patients with cirrhosis. We evaluated our experience at a university tertiary referral center regarding the safety and efficacy of LRGB in morbidly obese patients with cirrhosis.

**Methods:** A retrospective review of all patients undergoing RGB at our institution between January 2002 and October 2009 was performed. Patients with biopsy-proven stage IV hepatic fibrosis (cirrhosis) were identified and the diagnosis confirmed by a review of the histology. Demographics, surgical details, inpatient variables, complications, and weight loss were collected and analyzed.

**Results:** Between January 2002 and October 2009, 1,268 LRGB were performed and liver biopsies were performed in 83 (6.5%) patients. Of the 83 patients with liver biopsies, fibrosis was observed in 46 (55.4%) patients, 10 of which had cirrhosis. Six (60%) patients were female, the mean pre-bypass BMI was 56 (range 43-69), patients had a mean of 4 preoperative comorbidities, and the average preoperative MELD score was 7.8 (range 6-10). The diagnosis of cirrhosis was known preoperatively in three patients, one of which had ascites. Two patients (20%) were converted to an open procedure and there were no intraoperative complications or perioperative mortalities. The average operative time was 200 minutes (range 130-285), the mean estimated blood loss (EBL) was 200 ml and no patients required blood transfusions. The mean follow-up time was 20.8 months (range 6-74 months) and the mean percentage of excess weight lost was 61% (range 44-73) while the average post-bypass BMI was 36 (range 27-46).

**Conclusions:** Our study suggests that LRGB can be performed safely in morbidly obese patients with cirrhosis and is an effective approach for weight reduction surgery. Weight reduction surgery may be used as an effective therapy for weight loss in patients previously too obese to be listed for liver transplantation.
**S065**

STAPLE-LINE REINFORCEMENT IN LAPAROSCOPIC GASTRIC BYPASS SURGERY: WHAT IS THE EVIDENCE? Alexander Aurora, MD, Alan Saber, MD, Leena Khaitan, MD Dept of Surgery, University Hospitals Case Medical Center

**INTRODUCTION:** In bariatrics a small complication can be lethal. Bariatric surgeons may more easily approve the use of products thought to decrease the risk of bleeding and prevent leak. Staple-line reinforcement has become commonplace in bariatrics in the absence of significant data to support improved patient care or outcomes. The objective of this study was to systematically review the evidence for use of staple line reinforcement in bariatric surgery.

**METHODS:** An electronic literature search of MEDLINE database plus manual reference checks of articles published on laparoscopic gastric bypass surgery, bleeding and the use of staple-line reinforcement. We analyzed the significance of staple-line reinforcement on bleeding and leak.

**RESULTS:** We analyzed 5 comparative studies of which 3 were randomized control trials (level one evidence). None of the 5 comparative studies including 610 patients demonstrated any clinically significant difference in blood loss (see table). Two studies documented a significant increased use of hemoclips, a third documented “more bleeding sites” (amount of bleeding quantified subjectively). One comparative study found a 2% non-reinforced staple-line leak rate. There were zero leaks in the comparative group with staple-line reinforcement. Operative time was significantly increased in the non-reinforced staple-line groups. One study documented a significant difference in cost of $1600/case when using staple-line reinforcement.

In secondary analysis, 19 case series (9831 patients) using non-reinforced staple-lines and 5 case series (1493 patients) using reinforced staple-lines reported on bleeding complications after laparoscopic gastric bypass surgery. Clinically significant bleeding was seen in 277 of 9831 (2.4 +/- 1.5%). Fifty of the 1493 (2.4 +/- 1.9%) had clinically significant bleeds in the group with staple-line reinforcement. There was no difference in staple line bleeding between reinforced and non-reinforced staple-lines.

**CONCLUSION:** Staple-line reinforcement is commonly used in bariatric surgery. There is currently little level one evidence to support a benefit. A multitude of factors may influence the effect on bleeding and wound healing including use of heparin, age, co-morbidities. Further studies which take into account these factors may provide stronger evidence to explain why bariatric surgeons embrace this technology.

**R**= reinforced, **NR**= non-reinforced, **OR**= operative time, **EBL**= estimated blood loss, **ND**= not discussed, **Mgt**= management, **SG**= Seamguard, **PSD**= Peristrip Dry, * significant difference, # not at staple line

Reference R/NR OR EBL Mgt Leak Strip
Miller 2006 24/24 115/150* ND clips 2/2 0/0 SG
Nguyen 2005 17/17 135/138 84/129 OR 0/0 SG
Angrasani 2004 50/48 120/220* ND clips 5/23 0/6# PSD
Saber 2008 40/40 120/220 66/73 suture 0/0 SG
Shikora 2003 250/100 160/212 90/75 suture 0/2 PSD

**S066**

ENDOSCOPIC FINDINGS AND OUTCOMES OF REVISIONAL PROCEDURES IN PATIENTS WITH WEIGHT RECIVIDISM AFTER GASTRIC BYPASS Panot Yimcharoen, Manish Singh, Stacy Brethauer, Philip Schauer, Tomasz Rogula, Matthew Kroh, Bipan Chand Cleveland Clinic Foundation

**BACKGROUND:** Significant long-term weight regain occurs in 10-20% patients after gastric bypass (RYGB). Treatment of this chronic disease requires an understanding of why some patients regain weight years after surgery. Enlargement of the gastric pouch or gastrojejunostomy (GJ) over time are possible causative factors for weight regain, but there is little published data on the long term anatomic findings after gastric bypass. The aim of this study is to describe the endoscopic findings in patients referred to our practice for weight regain. We also attempt to correlate the duration of patient’s weight regain and response to revisional therapy.

**METHODS:** Patients referred for weight regain underwent upper endoscopy to evaluate their pouch and stoma size. Weight history and demographic data were obtained at the time of the initial evaluation. An articulating endoscopic measuring device was used for all procedures. We defined an enlarged GJ as >2 cm in diameter in any dimension and an enlarged pouch as >6 cm long or >5 cm wide. Patients who underwent revisional procedures were categorized into three groups based on their interval from primary RYGB to endoscopic evaluation (Group 1; <5 years, group 2; 5 to10 years and group 3; greater than 10 years). Regained weight (RW) is defined as weight gained after reaching weight nadir after primary RYGB. The percent of regained weight lost after revision is reported as %RWL.

**RESULTS:** Two-hundred and five patients are included in this study (176 female). At the time of EGD, mean age was 47+10 years, mean BMI (Kg/m2) was 43.4+8.4, and time interval from primary RYGB to EGD was 6.9+3.7 years. BMI regain from nadir was 9.78+5.80 (Kg/m2). Based on our definitions, abnormal endoscopic findings (n= 146, 71.2%) included large GJ (n= 86, 58.9%), large pouch (n= 43, 29.5%) or both (n=17, 11.6%). Fifty-four patients (26.3%) underwent a revisional surgical or endoluminal procedure. In group 1 (n=13) the mean %RWL was 65% (20-120%) and 62% of patients lost all their regained weight. In group 2 (n=32), the mean % RWL was 64% (9-232%). In group 3 (n=9) the mean %RWL was 40% (5-107%). Mean follow up after revision was 19, 11 and 12 months for each group, respectively.

**CONCLUSION:** Endoscopy is an essential tool for evaluation of weight regain after bariatric surgery. Based on our criteria, the majority of patients were found to have an enlarged pouch and/or stoma. In this study, patients undergoing intervention for weight regain within 5 years of their primary procedure had the best outcome in terms of % RWL. Longitudinal studies designed to correlate anatomic abnormalities with long-term weight outcomes are needed.

**S067**

PROSPECTIVE RANDOMIZED TRIAL COMPARING LAPAROENDOSCOPIC SINGLE-SITE (LESS) SURGERY WITH TRADITIONAL MULTIPLE PORT LAPAROSCOPIC SURGERY FOR ADJUSTABLE GASTRIC BANDING John N Afthinos, MD, Koji Park, MD, Ninan Koshy, MBBS, James J McGinty, MD, Julio A Teixeira, MD FACS St. Luke’s-Roosevelt Hospital Center, NY

**Introduction:** Laparoendoscopic single-site (LESS) surgery for adjustable gastric banding has been described in several case series, demonstrating safety and feasibility. To date, no prospective trials have evaluated the clinical outcomes of LESS gastric banding. We report the early results of a prospective, randomized trial comparing LESS surgery with traditional multiport laparoscopic surgery for the placement of an adjustable gastric band.

**Methods:** From January 2010 to September 2010, 10 patients were randomized to undergo LESS gastric band and 9 patients underwent multiport gastric banding. Patients were blinded to the procedure by the application of identical surgical dressings at the end of the operation. Exclusion criteria included significant hepatomegaly, radiographic evidence of hiatal hernia, connective tissue disease, steroid use, or history of open upper abdominal surgery. Data was collected on operative time, postoperative pain, postoperative narcotic consumption, and
length of stay. Patients were followed for complications during the first postoperative year. Cosmetic assessment and quality of life scores were also collected.

Results: Of the 28 patients meeting criteria, a total of 9 (32%) refused. 5 patients cited fear of greater postoperative pain with a multiport procedure, 2 patients requested LESS surgery for cosmetic reasons, and 2 patients believed that LESS surgery would facilitate wound healing. The remaining 19 patients (68%) underwent randomization to either LESS or multiport gastric banding. Mean BMI was 43 kg/m2 in the LESS group and 45 kg/m2 in the multiport group. Mean operative times were 69 minutes and 52 minutes, respectively (p=0.027). The total dose of postoperative hydromorphone via patient controlled anesthesia (PCA) device averaged 2.6 mg of in the LESS group and 2.0 mg in the multiport group (p=0.496). The mean duration of PCA use in the LESS group was 15.8 hours (range 6-23 hours) and 16.6 hours (range 13-24 hours) in the multiport group (p=0.712). The mean pain score on a 1-10 scale in the LESS group at postoperative hour 1 was 4 (range 0-5) and 4 (range 2-6) in the multiport group (p=0.884). The mean pain score at postoperative hour 12 in the LESS group was 2 (range 0-4) and 1 (range 0-4) in the multiport group (p=0.189). The mean length of stay in the LESS group was 22.1 hours (range, 16-26 hours) and 25.2 hours (range 18-47 hours) in the multiport group (p=0.285). There were no conversions from LESS surgery to multiport surgery. One patient in the LESS group had a port infection 4 months later and elected to remove the entire band. One patient in the multiport group required a port revision 5 months post-operatively due to port dislodgement.

Discussion: The preliminary results of this prospective randomized trial indicate that LESS surgery for adjustable gastric banding is safe and feasible for selected patients. One patient in each group required reoperation several months after initial placement of the gastric band. No statistically significant differences were seen in terms of postoperative pain, postoperative narcotic use and hospital length of stay. Further studies are needed to assess the long term outcomes between the two approaches.

S068

LAPAROSCOPIC MANAGEMENT OF GASTRIC BAND EROSIONS: A 10 YEAR SERIES OF 41 CASES
Geoffrey P Kohn, MBBS, Cheryl Hansen, RN, Richard W Gilhome, MBBS, Ray C McHenry, MBBS, Chris Hensman, MBBS LapSurgery Australia

INTRODUCTION: Intragastric erosion is a rare but major complication of laparoscopic adjustable gastric band (LAGB) surgery for morbid obesity. Many techniques have been described to treat this problem, with little supporting evidence.

One described technique is endoscopic removal of the band. Endoscopic removal is only feasible when the buckle of the band becomes intraluminally situated. Endoscopic treatment has often to be delayed to allow the buckle to appear within the lumen of the stomach for removal using this technique. Alternatives include a laparoscopic approach, whether from the lumen of the stomach for removal using this technique. Endoscopic treatment is feasible when the buckle of the band has often to be delayed to allow the buckle to appear within the lumen of the stomach for removal using this technique.

We have reviewed our experience with laparoscopic removal of eroded gastric band, investigating safety, time to removal and outcomes.

METHODS AND PROCEDURES: Our practice’s prospectively collected bariatric surgery database was queried for the period January 2000 until September 2010. The medical records were reviewed for all patients with the diagnosis of band erosion. Symptoms, time to erosion, interval between diagnosis and treatment, and complications of treatment were reviewed. All patients had laparoscopy, partial take-down of the gastrogastric plication, cut-down onto the band, division of the band near the buckle, removal of the band and primary closure of the gastrotomy with omental patch reinforcement as required.

RESULTS: A total of 2032 LAGB operations were performed during the study period. Of these 44 (2.2%) resulted in intragastric erosion. All bands placed were LapBands – 11 erosions were of the 10cm band, 10 with the Vanguard, 10 with the AP small and 13 with the AP large. Three patients elected to have their revisional surgery elsewhere and were lost to follow-up. Forty-one patients were included in the analysis. Mean time from band placement to the diagnosis of erosion was 33.1 months, and mean time from diagnosis to removal was 17 days. Mean hospital length of stay was 5 days (mode 2, median 4). There was one postoperative leak, one superficial wound infection and one pleural effusion. There were no deaths.

CONCLUSION(S): The safety of laparoscopic removal of eroded gastric bands with primary closure and omental patch repair is demonstrated. The time from diagnosis of erosion to treatment can be short, in contrast to endoscopic removal where often the requirement for further erosion of the band to free the buckle necessitates delayed treatment.
STAGED REPAIR OF LAPAROSCOPIC GASTRIC BAND SLIPPAGE
Sebastian R Eitid, MD, Christopher W Finnell, MD, Amit Trivedi, MD, Hans J Schmidt, MD, Shomaf Nakhjo, DO, Douglas R Ewing, MD Hackensack University Medical Center, Department of Surgery, Division of Bariatric Surgery

Introduction: Laparoscopic gastric band slippage is a known complication that requires revision following laparoscopic adjustable gastric banding (LAGB). Inflammation distorts the normal anatomy and can make revision or replacement exceedingly difficult. The surgeon’s options include removing or revising the band, or converting to an alternative bariatric operation. We propose a fourth alternative that salvages the LAGB and allows for the inflammatory process to subside prior to definitive repair. We propose a 2 stage procedure with the first stage consisting of simply unbuckling the band and reducing the slippage followed by a definitive revision at a later date. We assess whether this is a feasible alternative for treating LAGB slippage.

Methods: Between January 2006 and August 2010, 1,548 patients underwent LAGB at our institution. We retrospectively reviewed all operative records for treatment of LAGB slippage. We identified 12 patients (75% female, mean age 32.17 +/- 8.23 years) who underwent a staged repair of their LAGB due to band slippage. Data were collected retrospectively and included age, gender, BMI at primary operation, BMI at time of unbuckling (time of slippage), BMI at final revision and operative time and length of stay (LOS) at the time of unbuckling and at final revision. Additionally, the time period between primary operation and first stage of the repair and between the first and second stage of the repair were analyzed.

Results: Of 12 patients, all 12 underwent a laparoscopic reduction of their slipped lap band and unbuckling of the band while leaving the band in place. All patients’ dysphagia and food intolerance resolved following unbuckling. 11 patients had their bands revised and one pt was lost to follow up. There were no morbidities or mortalities following re operations. The operative times for unbuckling and final revision were 31.27 +/- 18.57 minutes, (Range 13-73 minutes, Median 25 Minutes) and 61.18 +/- 20.40 minutes (Range 38-109 minutes, Median 60 minutes) respectively. The LOS for the unbuckling and final revision was 1.18 +/- 1.33 days (Range 0-4, Median 1) and 0.36 +/-0.50 days (Range 0-1, Median 0 days) respectively. The average BMI at the primary operation was 45.45 +/- 7.29 kg/m2 and at band slippage (unbuckling) 27.54 +/- 4.39 kg/m2. The average time to band slippage was 28.45 +/- 15.20 months (range 6-58, Median 23 months) from the primary LAGB placement. Time to definitive repair or rebuckling of the slipped band was 20.45 +/- 18.06 weeks (range 6-60, median 11 weeks). BMI at time of final stage of the revision was 33.45 +/- 6.01 kg/m2 an increase of 20.14% (p-value <0.0001) from the time of unbuckling.

Conclusion: Staged repair of a LAGB slippage is a safe and feasible alternative for treating gastric slippage while salvaging the band. Time period between first and second stages of repair leads to significant weight gain, however more follow-up is needed to determine whether these patients lose their excess weight after final repair. It is imperative to perform the final revision in a timely manner to decrease the weight gain during this time period.

Table I

<table>
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<th>Method</th>
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<th>Band slippage</th>
<th>Band slippage w/ hiatal hernia</th>
<th>Dysphagia</th>
<th>GERD</th>
<th>Band Revision</th>
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<td>1</td>
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</table>

Conclusion: Adding a lesser curvature gastro-gastric plication suture offers no added benefit in reducing the rate of revision after LAGB surgery.

OUTCOMES OF VENTRAL HERNIA REPAIR IN THE NON OBESE AND THE OBESE
Mohamed Dahman, MD, Katherine Graw, MD, Anna Dietrich-Covington, NP, Bruce Schirmer, MD, Peter Hallowell, MD Department of Surgery, University of Virginia Health System, PO Box 800709, Charlottesville, VA 22908, USA

Introduction: Obesity has been associated with an increased incidence of hernia recurrence, wound infection, and possible
Worse outcomes after hernia repair. With more major abdominal surgical procedures being done, it’s estimated that around 20% may develop incisional hernia. The aim of this study is to evaluate outcomes of ventral hernia repair in the non-obese vs. the obese.

**Methods:** We did a retrospective study, looking at all the ventral hernia cases done from 2002 to 2009. We divided the patients into two groups; BMI<35 and BMI>35. We looked at demographics, ASA class, wound classification, operative time, operative technique, initial vs. recurrent hernias, morbidity, mortality.

**Results:** We had a total of 882 patients, n= 539 for BMI<35 vs. n=343 for BMI>35. Male/Female 285/254 for BMI<35 vs. 103/240 for BMI>35. Age 55.7±14 for BMI<35 vs. 50.1±12 for BMI>35. Average BMI of 28.1±4 for BMI<35 vs. BMI of 41.9±7.4 for BMI>35. Operative time was 1 hour 14 minutes for BMI<35 vs. 2 hours 3 minutes for BMI>35. With regards wound classification we had Clean 87.8%, Clean Contaminated 9.3%, Contaminated 1.3%, and Dirty 1.7% for BMI<35 vs. Clean 85.1%, Clean Contaminated 10.5%, Contaminated 1.2%, and Dirty 3.2% for BMI>35. ASA Class was mainly ASA 2 (55.8%), ASA 3 (34.3%) for BMI<35 vs. ASA 2 (55.1%), ASA 3 (40.2%) for BMI>35. We had 422 (78%) initial hernia repairs for BMI<35 vs. 224 (66%) for BMI>35. For the recurrent cases, we had 121 (22%) for BMI<35 vs. 116 (34%) for BMI>35. The recurrences rate was 9.6% for BMI<35 vs. 8.5% for BMI>35. With regards the approach 38% of cases done with laparoscopic approach and 62% done with open approach for BMI<35 vs. 34% with laparoscopic approach and 66% with open approach for BMI>35. We did note a mortality rate of 0.7% for BMI<35 vs. 0.9% for BMI>35. With regards Morbidities, we noted a rate of 11.9% for BMI<35 vs. 21% for BMI>35. Of these morbidities, we noted an incidence of 3.9% wound infection for BMI<35 vs. 7.9% for BMI>35. Seroma formation 3% for BMI<35 vs. 4.4% for BMI>35. Mesh infection 2% for BMI<35 vs. 1.7% for BMI>35. Bowel injury 0.9% for BMI<35 vs. 0% for BMI>35. These complications were not statistically significant (p<0.198).

**Conclusions:** According to the National Center for Health Statistics, more than 100,000 ventral hernia repairs are done annually in the USA. With the obesity epidemic on the rise, more data about outcomes and safety is crucial for providing the best care for our patients. Our study does demonstrate the feasibility and safety of ventral hernia repair in the obese population with comparable outcomes to the non-obese.

**S074**

**PILOT STUDY OF OBJECTIVE MEASUREMENT OF ABDOMINAL WALL FUNCTION IN VENTRAL INCISIONAL HERNIA PATIENTS**

**Michael Parker, MD, Ross F Goldberg, MD, Maryane M Dinkins, PT, Horacio J Asbun, MD, C Daniel Smith, MD, Steven P Bowers, MD Mayo Clinic Florida**

**Introduction:** Outcomes after ventral incisional hernia (VIH) repair are currently only measured by recurrence rate or measures of quality of life. There are no metrics available to objectively evaluate the functional outcome of abdominal wall reconstruction techniques. Therefore, our aim was to develop a non-exhaustive test of abdominal wall strength (AWS) that could be validated as a metric for abdominal wall function, using physical exam testing that requires little equipment.

**Methods and Procedures:** Data were prospectively collected from 12/1/2009 through 8/31/2010 in 36 patients who were in various stages of VIH management, based on an approved protocol (IRB 09-003529). Nine patients were seen both before and after VIH repair, for a total of 45 different patient visits. Patients were tested either simultaneously or in succession by two of three different examiners. Abdominal wall function data were collected for three physical exam-based tests, all previously described as physical therapy assessment tools: (1) Double Leg Lowering (DLL), (2) Trunk Raising (TR), and (3) Supine Reaching (SR). Raw data were compared and tested for validity, and then continuous data were transformed to categorical data. Agreement was measured using the intra-class correlation coefficient (ICC) for the DLL and using Kappa for all other ordinal measures. Two estimates of the ICC and Kappa were calculated for the DLL and TR tests in assessing inter-observer reliability (examiner 1 vs. examiner 2, and examiner 2 with examiner 3 respectively).

**Results:** Simultaneous examinations for each test yielded the following inter-observer reliability values: DLL = 0.96 & 0.87, TR = 1.00 & 0.95, and SR = 0.76. Reproducibility was assessed by consecutive tests conducted 5 minutes apart with correlation as follows: DLL = 0.81, TR = 0.82, and RCH = 0.38. Due to the poorer inter-observer reliability for the SR test compared to the DLL and TR tests, the SR test was excluded from the calculation of an overall score. Based on the distribution of raw data from DLL and TR tests, DLL data were categorized into 10-degree increments, and this allowed construction of a 10-point score, based on five points per test. Median AWS score was 5 (IQR 4 - 7). Using the 10-point AWS score, there was agreement within
one point for 42 of 45 encounters (93%).

Conclusion: The findings of this preliminary study provide evidence that the 10-point AWS score may be a measure of AWS that is both accurate and reproducible and that has potential to help clinicians objectively describe abdominal wall function in patients who are in various stages of VIH management. This score potentially help surgeons determine those patients in need of abdominal wall reconstruction, while providing an objective measure that can track the progress in recovery after VIH repair. Further longitudinal outcomes studies will be needed.

S075
LAPAROSCOPIC VENTRAL HERNIA REPAIR — DOES PRIMARY REPAIR IN ADDITION TO PLACEMENT OF MESH DECREASE RECURRENCE? AMBAR BANERJEE, MD, VIMAL K NARULA, MD, DEAN J MIKAMI, MD Center for Minimally Invasive Surgery, Division of Gastrointestinal Surgery, The Ohio State University

Introduction: The advent of laparoscopic ventral hernia repair (LVHR) not only reduced the morbidity associated with open repairs but also led to a decrease in the hernia recurrence rate. However, the rate continues to remain significant. In the quest for the ideal technique to manage this condition, we retrospectively reviewed the cases of LVHR performed at our institution to evaluate if primary laparoscopic repair along with underlay mesh placement yielded superior results in terms of reducing hernia recurrence.

Methods: After obtaining Institutional Review Board (IRB) approval, we conducted a retrospective review of the medical records of 98 patients who were treated with LVHR from January 2008 through December 2009 at The Ohio State University Medical Center (OSUMC) by two minimally invasive surgeons. The patient population was broadly divided into two groups based on the laparoscopic repair of the fascial defect with mesh underlay, or with primary suture repair and mesh underlay. Primary repair with mesh placement was performed in selected small hernias or in some large ones where adequate approximation of the edges was ensured prior to mesh deployment for satisfactory overlap. Patient demographics, rates of hernia recurrence, and other associated complications were compared among the two groups. Patient variables and the clinical outcomes were analyzed with descriptive statistics and chi-square test.

Results: Ninety-eight patients with a mean age of 48.7 years (SD 13.8) underwent LVHR for incisional (N=62), umbilical (N=28), epigastric (N=6), and parastomal (N=2) hernias. Hernia recurrence was documented in 11 patients (11.2%). The average area of the fascial defects was 38.04 cm². The mean follow-up period was 14.5 months (range 1-36 months). Recurrence was found to be 10% in patients with initial hernias compared to 16.7% in those with recurrent hernias (p=0.4). Incisional hernias accounted for nine recurrences (14.5%) while umbilical and parastrastomal hernias were associated with one recurrence each (3.6% and 50% respectively). (p=0.1) The rate of recurrence in patients treated with primary suture repair along with mesh was 2.8% (1 of 36 cases) when compared to 16.1% (10 of 62 cases) associated with mesh alone (p=0.04). Two of ten recurrences with mesh repair were further treated with primary repair alongside underlay mesh placement without occurrence of recurrence to date.

Conclusions: Primary laparoscopic repair along with mesh placement for the management of ventral hernia was found to be effective in selected cases as evidenced by the low rate of recurrence when compared to conventional repair with a mesh alone. Further retrospective and prospective studies with larger patient enrollment are warranted to confirm the benefit of this technique over the traditional laparoscopic repair.

S076
PERFORMING CLINICAL STUDIES INVOLVING MESH DEVICES: WHAT EVERY INVESTIGATOR SHOULD KNOW ABOUT THE FDA INVESTIGATIONAL DEVICE EXEMPTION (IDE) PROCESS BINITA S ASHAR, MD, MBA, JIYOUNG DANG, PHD, DAVID KRAUSE, PHD, MARKHAM LUKER, MD PhD U.S. Food and Drug Administration

This paper represents the professional opinion of the authors and is not an official document, guidance or policy of the U.S. Government, the Department of Health and Human Services, or the Food and Drug Administration, nor should any official endorsement be inferred.

The FDA’s Center for Devices and Radiological Health (CDRH) is responsible for providing reasonable assurance of safety and effectiveness of all medical devices marketed within the United States. To date CDRH has cleared numerous mesh devices for general use but has not cleared/approved any mesh devices intended for certain specific uses such as for infected wounds, hernia prevention, biofilm reduction, or prevention of adhesions. CDRH is requesting that manufacturers seeking such mesh device labeling claims consult with the Agency to determine the level of evidence necessary for justifying such claims. Examples of circumstances potentially requiring human clinical trial data under FDA approved IDE include, but are not limited to mesh devices indicated for new intended use(s), or are constructed of new materials or new combinations of materials.

Study investigators can seek advice from FDA on the type and level of data and the appropriate regulatory path for marketing either a new mesh device or an existing mesh device with a new intended use. In order to obtain FDA input, it is our recommendation that clinical study sponsors contact FDA in advance of planned human clinical study using the FDA’s pre-IDE process. Submitting a pre-IDE is relatively simple and allows study investigators to obtain advice on their protocol prior to initiating a clinical study and gain input on the Agency’s expectations regarding the data requirements both before and possibly after to obtaining clearance/approval of a mesh device. Pre-IDE interaction can also identify early on whether a formal study IDE application is required before patients may be enrolled in the study. Should an IDE submission be required, pre-IDE interaction serves as advance notice for FDA to assemble an appropriate review team and acquaint the team with the mesh device before receiving the IDE. In this way, pre-IDE discussions may facilitate the IDE process which has a statutory deadline of 30 days for FDA review. Specific information can be obtained at http://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/HowtoMarketYourDevice/InvestigationalDeviceExemptionIDE/ucm046164.htm#pre_ide and http://www.fda.gov/cdrh/devadvice/ide/index.shtml

S077
MESH FIXATION COMPARED TO NON-FIXATION IN TOTAL EXTRAPERITONEAL INGUINAL HERNIA REPAIR: A RANDOMIZED CONTROLLED TRIAL IN A RURAL HOSPITAL SETTING Pankaj Garg, MBBS MS, Srijith Nair, MBBS MS, Geetha R Menon, PhD, Jai D Thakur, MBBS, Mohamed Ismail, MBBS MS 1.Fortis Super Specialty Hospital,Mohali, India 2.Moulana Hospital, Perianthlmannala, Kerala, India 3. Indian Council of Medical Research, New Delhi, India 4. University of Arkansas for Medical Sciences, Little Rock, Arkansas, USA

Background- Previous studies have shown that non-fixation of mesh in TEP is safe and comparable to mesh fixation in terms of recurrence rate, pain scores and other morbidity parameters. The present study was planned in a rural hospital in south India
to compare the effect of non-fixation of mesh to its fixation in laparoscopic total extraperitoneal (TEP) inguinal hernia repair. **Methods** - 104 patients were randomized to mesh non-fixation or fixation group during TEP. A previous study with a large sample size was used as the reference study for calculation of the sample size. Individuals over 16 years of age, diagnosed with a primary, unilateral or bilateral reducible inguinal hernia were eligible to be enrolled for randomization. Obstructed and strangulated hernias, recurrent hernia, patients with associated hernias (like ventral hernia), history of previous lower abdominal surgery ( Pfannenstiel incision, preperitoneal procedure etc) and patients unfit for anesthesia (American Society of Anesthesiology grade>2) were excluded from the trial. The primary outcome measure was post operative pain at one month and recurrence at one year. The secondary endpoints were seroma formation, urinary retention, resumption of normal activities, postoperative pain at one day, one week and after one year. The post operative pain scores were measured on VAS (Visual analogue scale). The trial was registered at www.clinicaltrials.gov (ID: NCT01117337) and at the national registry of clinical trials in India, www.ctri.in (CTR/2009/09/000020). **Results** - 104 patients (194 hernias) were randomized to mesh non-fixation or fixation group. The follow-up ranged from 15-19 months with a median of 16.2 months. One year follow-up was completed in 100 patients (186 hernias)- 52 patients(96 hernias) in Non-fixation group and 48 patients(90 hernias) in Fixation group. The operating time was significantly more in the fixation group (Fix-37.7±4.3 min, Non-fix - 35.9±3.6 min, p=0.022, t-test). The pain scores at 24 hours were comparable in both the groups (Fix-1.31±0.4, Non-fix - 1.42±0.5, p=0.23, t-test). The hospital stay (Fix-1.12±0.3 days, Non-fix-1.15±0.4 days, p=0.7, t-test) and days taken to resume normal activities (Fix-7.77±1.3 days, Non-fix - 7.96±1.15 days, p=0.44, t-test) were also similar in both the groups. The proportion of patients with seroma formation were comparable in both the groups (Fix-10.4% vs Non-Fix-15.4%, p=0.56, t-test). The proportion of patients having pain at one week (Fix-20.8%, Non-fix-25%, p=0.64, Fisher exact test), at one month (Fix-6.2%, Non-fix-15.3%, p=0.2, Fisher exact test), and at one year (Fix-4.0%, Non-fix-13.4%, p=0.16, Fisher exact test) were comparable in both the groups. There was no recurrence in either groups at a minimum follow-up of 15 months. **Conclusions** - Compared to fixation of mesh, non-fixation during TEP had similar postoperative pain, hospital stay, resumption of normal activities, seroma formation and recurrence rate. Non-fixation of mesh is safe and recommended during TEP in experienced hands, even in rural settings. **References**


**S078**

**FIXATION OF POLYPROPYLENE MESH ON THE RABBIT ABDOMINAL WALL USING POLY L-LACTIC ACID (PLLA) NANOSHEET**

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**Introduction** - Polypropylene mesh (PPM) used to repair abdominal wall hernias often induces dense adhesions to visceral surface when the PPM is directly touched to the viscera. We have recently developed a biocompatible poly L-lactic acid (PLLA) nanosheet. This nanosheet with a thickness less than 100 nm has a unique potential to tightly adhere to skin and/or organs. Furthermore, the PLLA nanosheet can prevent adhesions to opposing tissues. **Purpose** - We have investigated the anti-adhesive and fixative effect of nanosheet on a rabbit model of intraperitoneal positioning of PPM.

**Material and methods** - PLLA nanosheet was fabricated by a combination of spin-coating method and a peeling technique with Poly vinyl alcohol (PVA) as a supporting film (Adv. Mater. 2009; 21:1-5). Male New Zealand white rabbits were studied. After shaving the abdomen, a midline laparotomy of approximately 8 cm was performed under clean conditions (but not complete sterile). To examine the adhesive property, PPM measuring 2 x 2 cm were placed intraperitoneally on a paremedian location and fixated to the abdominal wall with a 4-0 Nylon suture. Thereafter, the PPM was covered with Seprafilm™ or nanosheet measuring 4 x 4 cm. Subject rabbits were sacrificed one month after PPM placement. The degree of PPM adhesion was evaluated according to a quantitative and qualitative scoring system, based on the published literature. Foreign-body reaction to mesh materials was also examined histologically. 2. Next, we examined the fixative property. PPM (2 x 2 cm) was placed and covered with Seprafilm or nanosheet measuring 4 x 4 cm without fixyation by suture. One month later,fixation of PPM was evaluated.

**Results** - No complications were encountered during the experiments. 1. Regarding the adhesive property, nanosheet overlapping showed no adhesive lesion of PPM. In contrast, Seprafilm group showed a certain adhesion in several rabbits (66%). The adhesion score was significantly lower in the nanosheet group than that in the Seprafilm group (score: 0 vs. 2.3). Infiltration of inflammatory cells was also suppressed in the nanosheet group compared with the Seprafilm group. 2. Regarding the fixative property, PPM was not fixed using the Seprafilm. However, some of the PPM (33%) were fixed using the nanosheet (without suture).

Concluded: We have succeeded in fabricating a free-standing biocompatible PLLA nanosheet by nanotechnology. Overlapping treatment of nanosheet may be an effective in adhesion prophylaxis of intraperitoneal PPM. It may also have a possible beneficial effect on additional fixation of PPM.

**S079**

**META-ANALYSIS OF STUDIES LOOKING INTO STAPLE VERSUS FIBRIN GLUE FIXATION IN LAPAROSCOPIC TOTAL EXTRA PERITONEAL REPAIR OF INGUINAL HERNIA**

Amit Kaul, MD, Susan Hutfless, PhD, Senan A Hamed, MD, Kevin Tymitz, MD, Hamilton Le, MD, Hien Nguyen, MD, Michael Marohn, MD Johns Hopkins University School of Medicine

**INTRODUCTION** - Fixation of mesh is typically performed to minimize risk of recurrence in laparoscopic inguinal hernia repair. Mesh fixation with staples has been implicated as a cause of chronic inguinal pain. Our study aim was to compare mesh fixation using a fibrin sealant versus staple fixation in laparoscopic inguinal hernia and compare outcomes for hernia recurrence and chronic inguinal pain. **METHODS AND PROCEDURES** - PUBMED was searched through September 2010 by use of specific search terms. Inclusion criteria were laparoscopic Total Extra Peritoneal (TEP) inguinal hernia repair, and comparison of both mesh fibrin glue fixation and mesh staple fixation. Primary outcomes were inguinal hernia recurrence and chronic inguinal pain. Secondary outcomes were operative time, seroma formation, hospital stay and time to return to normal activity. Pooled odds ratio (OR) were calculated assuming fixed-effects models. **RESULTS** - Four reports were included in the review. A total of 662 repairs were included, of which mesh was fixed by staples or tacks in 394, and mesh fixed by fibrin glue in 268. There was no difference in inguinal hernia recurrence with fixation of mesh by staples/ tacks versus fibrin glue (OR 2.13; 95% Confidence Interval [CI] 0.60—7.63). Chronic inguinal pain (at 3 months) incidences were significantly higher with staple/ tack fixation (OR 3.25; 95% CI 1.62 — 6.49).
There was no significant difference in operative time, seroma formation, hospital stay, or time to return to normal activities. CONCLUSION(S) - Meta-analysis of laparoscopic inguinal hernia mesh fixation technique comparing fibrin sealant versus staple or tack fixation finds both effective with no difference when measuring inguinal hernia recurrence rates. When postoperative groin pain is compared, however, meta-analysis favors mesh fixation with fibrin glue, with a lower incidence of chronic groin pain. Because fibrin glue mesh fixation in laparoscopic inguinal hernia repair achieves similar hernia recurrence rates compared with staple/tack fixation, but decreased incidence of chronic inguinal pain, it may be the preferred technique.

S080

LAPAROSCOPIC FIXATION OF BIologic MESH AT THE HIATUS WITH FIBRIN OR POLYETHYLENE GLYCOL (PEG) SEALANT IN A PORCINE MODEL

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OBJECTIVES: Despite evidence that biologic mesh reinforcement improves outcomes for paraesophageal hernia repair, biologic meshes are not commonly utilized due to the technical complexity of fixation at the hiatus. If adequate incorporation at the hiatus could be demonstrated, the potential simplicity of utilizing a tissue sealant for biologic mesh fixation would increase the use of these materials for reinforcement of laparoscopic paraesophageal hernia repairs and ensure the best outcomes for patients. The objective of this study was to determine the acute and chronic fixation strengths achieved by either fibrin or polyethylene glycol (PEG) polymer sealants to secure biologic mesh at the hiatus in a porcine model.

METHODS: Thirty-two (n=32) female, domestic pigs were divided into four groups: acute fibrin sealant (n=8); acute PEG sealant (n=8); chronic fibrin sealant (n=8); and chronic PEG sealant (n=8). Laparoscopically, a 5.5 x 8.5cm piece Surgisis BiodesignTM Hiatal Hernia Graft (porcine small intestine submucosa) was oriented with the U-shaped cut-out around the gastroesophageal junction and the short axis in the craniocaudal direction to simulate hiatal reinforcement with a biologic mesh. The mesh was then secured with 2mL of either fibrin sealant (TISSEEL, Baxter BioSurgery) or PEG sealant (COSEAL, Baxter BioSurgery). Pigs in the acute groups were survived for 2 hours to allow for complete polymerization of the sealants, and pigs in the chronic group were survived for 14 days. After euthanasia, specimens of the mesh-tissue interface were harvested and subjected to lap shear testing on an Instron® materials testing system to measure fixation strength. The fixation interface (measuring 3x3cm) was tested, and the fixation strength (N/cm²) was calculated by dividing the maximum load sustained during the test by the area of the fixation interface. Results are reported as mean ± SEM.

RESULTS: There was no significant difference in operative time, seroma, hospital stay, or time to return to normal activities. CONCLUSION(S): Despite evidence that biologic mesh reinforcement improves outcomes for paraesophageal hernia repair, biologic meshes are not commonly utilized due to the technical complexity of fixation at the hiatus. If adequate incorporation at the hiatus could be demonstrated, the potential simplicity of utilizing a tissue sealant for biologic mesh fixation would increase the use of these materials for reinforcement of laparoscopic paraesophageal hernia repairs and ensure the best outcomes for patients. The objective of this study was to determine the acute and chronic fixation strengths achieved by either fibrin or polyethylene glycol (PEG) polymer sealants to secure biologic mesh at the hiatus in a porcine model.

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on their own clinical experience. Increasingly, surgeons complete Minimally Invasive Surgery (MIS) fellowship training, which should significantly reduce or eliminate this learning curve.

METHODS: We performed a retrospective chart review of the initial post fellowship experience of two MIS trained surgeons performing laparoscopic inguinal hernia repairs from a single institution from August 2004-July 2009. Our electronic medical record was reviewed for any hernia related medical encounters across the entire military healthcare system. A telephone follow up survey was also conducted along with additional clinical follow up as indicated.

RESULTS: A total of 375 inguinal hernia repairs were performed during the study period. Of these, 354 laparoscopic inguinal hernia repairs were performed on 242 patients. Two hundred ninety one primary repairs and 63 recurrent repairs were included. No significant intraoperative complications occurred. Median follow up was 30 months (95% confidence interval, 28-34). Only 22 patients (9%) were lost to follow up. Seventy percent of patients responded to contact for long term follow up with a telephone survey. Immediate post operative complications included 9 hematomas (3.7%), 18 seromas (7.4%), 5 wound infections (2.1%), and 6 patients (2.5%) with urinary retention. A total of 23 patients (9.5%) had post operative pain that did not resolve by the time of initial follow up. Follow up telephone surveys using a validated pain questionnaire showed 15 patients (6.2%) with current chronic pain. None have required time off of their occupation or long term pain medications for their chronic pain. Two recurrences (0.57%) developed over the follow up period. When these complication rates were compared between the two surgeons, no significant differences were found. Additionally, comparison of the first half of each surgeons’ experience with the later half showed no significant differences except for hematoma rate for one surgeon, which was higher during his initial experience (6 vs 0, relative risk = 0.94, p < 0.03).

CONCLUSION: The learning curve for laparoscopic inguinal hernia repair can be eliminated by MIS fellowship training. Surgeons who complete a MIS fellowship which includes experience in laparoscopic inguinal hernia repair can perform the procedure with outcomes comparable to more experienced surgeons who have not had formal training. Laparoscopic inguinal hernia repair performed by well trained surgeons should be considered a good option for all types of groin hernias.

S083
THE COMING OF AGE OF COMPLEX LAPAROSCOPY IN A COMMUNITY TEACHING HOSPITAL: PRACTICE PATTERNS LEARNED FROM A LAPAROSCOPIC VENTRAL HERNIA REPAIR MODEL. Ashwin A Kurian, MD, Sidhth Gallagher, MD, Robert Josloff, MD Abington Memorial Hospital

Objective: Assess practice patterns in the incorporation of complex laparoscopy by general surgeons in a community teaching hospital using a laparoscopic ventral hernia repair (LVHR) model.

Methods: Univariate and multivariate regression analysis of patient and intraoperative variables was conducted on a prospectively acquired database of LVHRs performed between April 2001 to July 2010. Patients were divided into, Group 1 (patients operated on by seven surgeons without advanced laparoscopic fellowship training) and Group 2 (patients operated on by three surgeons trained in advanced laparoscopic fellowships). A multivariate logistic regression model was created, to determine independent variables that correlate with length of procedure, (LOP: surrogate for the incorporation of advanced laparoscopic skills in the surgeons practice). P value <0.05 was considered significant.

Results: Descriptive Analysis: 324 patients underwent elective LVHR with a mean age of 56.6 years. There were 230 patients in Group 1, and 94 patients in Group 2. The average BMI was 32.5 (range: 17 – 64). The overall conversion rate to open operation was 4.9%. The mean LOP was 96 minutes (range: 28 –418 minutes).

Univariate Analysis: The mean age was significantly higher in Group 2 (55 vs 59 years, p=0.03). There were a higher percentage of females (45% vs 67%, p=0.0006) and patients with incisional hernias (48% vs 76%, p=0.0001) in Group 2. The mean BMI and ASA grade distribution was not statistically dissimilar between the two groups. There was a significantly higher percentage of patients with recurrent hernias (19% vs 27%, p = 0.042) and complex hernias (21% vs 31%, p = 0.003) in Group 2. The mean size of mesh used in the repair (surrogate for hernia size) was significantly higher in Group 2 (175 vs 230 cm2, p = 0.008), as was the mean number of trans-fascial sutures used (2.3 vs 4.5 sutures, p < 0.0001). The mean length of procedure was significantly longer in Group 2 (90 vs 112 minutes, p = 0.0008).

Logistic Regression: A multivariate logistic regression model was created with LOP being the dependent variable. Five factors were independently associated with a significant longer LOP on multivariate logistic regression analysis (p<0.05): mesh size (p<0.0001), complex hernias (p=0.0002), incisional hernia (p=0.0003), lysis of adhesions (p=0.001) and patient age (p=0.02).

Significantly, an advanced laparoscopic fellowship was not independently associated with LOP.

Conclusions: Practice patterns suggest incorporation of laparoscopic techniques in the management of ventral hernias among general surgeons. Surgeons with advanced laparoscopic training tend to operate on larger and more complicated ventral hernias. Advanced laparoscopic training does not significantly decrease the length of this particular procedure, suggesting that general surgeons have incorporated the skills required to approach the laparoscopic management of ventral hernias into their skill set. Mesh size, complex hernias, incisional hernias, need for lysis of adhesions and patient age independently predict a longer length of procedure when a patient undergoes a laparoscopic ventral hernia repair.

S084
BROAD CLINICAL UTILIZATION OF NOTES. IS IT SAFE? Santiago Horgan, MD, Ozanan R Meireles, MD, Garth Jacobsen, MD, Bryan Sandler, MD, Kari Thompson, MD, Tosho Katagiri, MD, Sonia Ramamooorthy, MD, Michael Sedrak, MD, Thomas Savides, MD, Alberto Ferreres, MD, Saniea Majid, MD, Sheetal Nijhawan, MD, University of California San Diego, San Diego - CA

Background: NOTES has been the focus of several studies as a less invasive alternative to conventional laparoscopy to access and treat intra-cavitary organs. For the last 5 years, much has been accomplished with animal studies, yet the clinical utilization of this novel technique is still very modest. After two years of experience in the lab, we started our clinical experience. This paper reports our experience with clinical utilization of NOTES procedures from 2007 to 2010.

Methods: Under UCSD IRB approved trials, 87 patients were enrolled under seven different NOTES protocol from 2007 to 2010, were a NOTES procedure was offered as an alternative to conventional treatments. The treated pathologies were cholelithiasis, biliary dyskinesia, acute and chronic appendicitis, ventral hernias, morbid obesity and achalasia. The access routes included Trans-gastric (TG), Trans-vaginal (TV) and Trans-esophageal (TE).

Results: Among the 87 patients enrolled on our NOTES program, 10 were male and 69 female. Eight-six patients underwent a surgical procedure starting with diagnostic laparoscopy, and 80 patients were deemed to proceed with a NOTES approach. There were 6 aborted NOTES procedures at the time of the initial peritoneoscopy before creating a NOTES access route. The reasons to not proceed with a NOTES procedure on the TV Cholecystectomy group it was due to large amount of pelvic.
adhesions in 3 patients and a severely inflamed gallbladder in one patient; on the TG appendectomy group it was due to the presence of localized peritonitis in one patient; and on the TEEM group it was due to the presence of megaesophagus with inability to clean the esophagus from food debris. The NOTES procedures performed were 48 TV cholecystectomies, 4 TV appendectomies, 8 TG cholecystectomies, 2 perirectal peritoneoscopy, 2 TG appendectomies, 3 TV ventral hernia repair, 5 Trans-esophageal endoscopic myotomy (TEEM), 4 TV sleeve gastrectomy and 4 TG sleeve gastrectomies (the average BMI for the sleeve gastrectomy groups was 39.9 Kg/M2). There were no intra-operative complication and no conversion to standard laparoscopy during those procedures. The average hospital stay was 1 to 2 days. One patient required an Emergency Department visit due to nausea and vomiting (TV cholecystectomy). To date, 3 patients who underwent TV cholecystectomy have become pregnant.

Conclusion: This experience demonstrates that NOTES is safe, feasible and reproducible with previous training in the lab, a consistent team, and high volume. Certainly, prospective randomized studies using large patient population are necessary to assess the long-term results of NOTES procedures.

S085
COMPARISON STUDIES ON EMERGENT LAPAROSCOPIC LAVAGE AND DRAINAGE VS HARTMANN’S PROCEDURE IN 83 CONSECUTIVE COMPLICATED DIVERTICULITIS WITH GENERALIZED PURULENT PERITONITIS: DAMAGE CONTROL STRATEGY IN THE MANAGEMENT OF SEVERE DIVERTICULITIS Song Liang, Morris E Franklin The Texas Endosurgery Institute

BackgrounD AND OBJECTIVEs: Both emergent laparoscopic Hartmann’s (LHP) and laparoscopic lavage and drainage (LL&D) have been postulated as two alternative approaches to manage acute perforated diverticulitis with generalized purulent peritonitis. Differing from LHP, LL&D is considered an abbreviated operation for the purpose of damage control rather than pathogenic control. This cohort study is designed on a prospectively collected database of our institute to compare LL&D with LHP in the management of severe perforated diverticulitis, and aimed at establishing a safer and more effective emergent laparoscopic method for operating on the patients with acute perforated diverticulitis with generalized peritonitis.

METHODS: A consecutive series of patients undergoing either emergent LHP or LL&D for perforated diverticulitis were identified from a prospectively designed Laparoscopic Colorectal Procedure Database of the Texas Endosurgery Institute (LCPD-TEI). The inclusive criteria of case selection for this study were all emergent patients with the clinical diagnosis of generalized peritonitis from acute diverticulitis and failed nonoperative treatment with antibiotics. The choice of procedure (LHP vs LL&D) depended upon clinical manifestations, radiological diagnosis, intraoperative findings at diagnostic laparoscopy, and patient tolerance for the procedure.

RESULTS: 83 emergent patients underwent emergent laparoscopic procedures (42 LL&D and 41 LHP) between 1995 and 2010 for acute perforated diverticulitis. Diagnostic laparoscopy classified 67 (81.7%) patients as Hinchey III or IV perforated diverticulitis. The operating time for LHP was 141.1+/−37.1 minutes, and blood loss during the procedures was 141.8+/−76.6 ml. Two patients (4.9%) had bowel injury during LHP and six patients (14.6%) had been converted to open Hartmann’s for various reasons. Postoperatively, three patients developed wound infection, one patient developed evisceration, and one patient was expired from sepsis induced multiple organ failure. Taken together LHP-associated postoperative mortality and morbidity rates were (2.4%) and (9.6%) respectively. For LL&D, the operating time was 71.1+/−19 minutes, and blood loss was very minimal. Despite none of the patients with LL&D developing remarkable intra- as well as postoperative complications, three patients (7.5%) were re-operated (one relavage and two open Hartmann’s) for the worsening of septic symptoms during post-LL&D course. Moreover, the patients with LHP were found to have significantly longer hospital stay than the ones with LL&D (16.3+/−10.1 vs 6.7+/−2.2 days, P<0.01). Lastly, long-term follow-up was fulfilled on 78 patients with the rate of 94%. 26 of 36 follow-up patients with LHP had their colostomy closed with the colostomy closure rate of 72.2% while 25 of 42 patients who underwent LL&D had elective sigmoidectomy for the source control, and the remaining 17 have been doing well without further surgical intervention.

CONCLUSIONS: The results from this study deliver two-fold information. First, both laparoscopic Hartmann’s procedure and laparoscopic lavage and drainage can be performed safely and effectively for managing severe diverticulitis with generalized peritonitis. Secondly, in comparison with LHP, LL&D does not remove the pathogenic source, however the clinical application of this damage control operation to our patients showed significantly better short- and long-term clinical outcome for managing perforated diverticulitis with various Hinchey classifications.

S086
COMPARISON OF CLAVIEN CLASS IV AND V COMPLICATIONS FOR LAPAROSCOPIC VERSUS OPEN COLECTOMY USING NSQIP DATA AND RISK ADJUSTMENT

Shawn Webb, MD, Ilan Rubinfeld, MD, Velanovich Vic, MD, M H, MD, Reickert Craig, MD Henry Ford Health Systems

Introduction: Is laparoscopic colectomy independently protective from ICU level complications when compared to open colectomy? Laparoscopic colectomy has been associated with fewer postoperative complications compared to open colectomy. However, it is unclear whether this is true for the most severe complications typically requiring treatment in an intensive care unit. We performed a risk adjusted comparison of laparoscopic vs open colectomy.

Methods: Using the NSQIP Public Use files (2005-2008), we identified all laparoscopic and open colectomies by CPT code. Using the Clavien classification for postoperative complications, we identified NSQIP data points most consistent with Clavien Class IV requiring ICU care (postoperative septic shock, postoperative dialysis, pulmonary embolism, MI, cardiac arrest, prolonged ventilatory requirements, need for reintubation) or class V (mortality). Statistical analysis was performed with SPSS software (SPSS, Chicago, IL). Odds ratios were calculated to determine probability of having any Clavien class IV or V complication comparing laparoscopic versus open colectomy. Logistic regression was performed to account for preoperative conditions effect on complications (ASA class, wound class, gender, preoperative functional status, preoperative albumin level, azotemia, thrombocytopenia, emergency case, and age > 70).

Results:

<table>
<thead>
<tr>
<th></th>
<th>Colectomy</th>
<th>Laparoscopic</th>
<th>Open</th>
<th>Univariate X2 Odds Ratio (p&lt;0.001 for all variables)</th>
<th>Multivariate Logistic regression OR (p&lt;0.001 for all)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total patients (N)</td>
<td>12,455</td>
<td>33,190</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Septic shock</td>
<td>1.5%</td>
<td>5.6%</td>
<td>3.88</td>
<td>1.64</td>
<td></td>
</tr>
<tr>
<td>Q-wave infarct</td>
<td>0.2%</td>
<td>0.5%</td>
<td>2.99</td>
<td>1.63</td>
<td></td>
</tr>
<tr>
<td>Cardiac arrest</td>
<td>0.3%</td>
<td>1.2%</td>
<td>4.27</td>
<td>2.21</td>
<td></td>
</tr>
<tr>
<td>Pulmonary embolism</td>
<td>0.4%</td>
<td>1.0%</td>
<td>2.27</td>
<td>1.87</td>
<td></td>
</tr>
<tr>
<td>Dialysis</td>
<td>0.3%</td>
<td>1.6%</td>
<td>4.67</td>
<td>1.94</td>
<td></td>
</tr>
<tr>
<td>Reintubation</td>
<td>1.4%</td>
<td>4.5%</td>
<td>3.22</td>
<td>1.57</td>
<td></td>
</tr>
<tr>
<td>Prolonged ventilation</td>
<td>1.6%</td>
<td>8.9%</td>
<td>5.95</td>
<td>1.77</td>
<td></td>
</tr>
<tr>
<td>Mortality</td>
<td>1.1%</td>
<td>5.8%</td>
<td>5.52</td>
<td>1.54</td>
<td></td>
</tr>
<tr>
<td>Any Clavien class IV or V complication</td>
<td>3.6%</td>
<td>15.4%</td>
<td>4.87</td>
<td>1.74</td>
<td></td>
</tr>
</tbody>
</table>

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**S087**

**COMPARISON BETWEEN RYGB, DS, AND VSG EFFECT ON GLUCOSE HOMEOSTASIS: INTERIM REPORT OF PROSPECTIVE STUDY.** Mitchell S Roslin, MD FACS, Yuriy Dudiy, MD, Joanne Weiskopf, PA, Parsh Shah, MD FACS, Parsh Shah, MD FACS, Lenox Hill Hospital, Northern Westchester Hospital Center

**Introduction:** The effect of Roux en Y gastric bypass (RYGB) on insulin resistance and resolution of diabetes has been documented. Our group has reported a high incidence of reactive hypoglycemia, following RYGB. The purpose of this study is to compare the six month response to oral glucose challenge, improvement in insulin resistance, and diabetes resolution in patients undergoing RYGB, duodenal switch (DS), and vertical sleeve gastrectomy (VSG).

**Methods and procedures:** Sixty patients meeting criteria for bariatric surgery are enrolled in this prospective non-randomized study. Twenty-six patients who have reached the six month mark are the basis of this report. Prior to the surgery and at six months follow-up, patients underwent blood draw to determine fasting glucose, fasting insulin, HbA1c, C peptide level. Two hours oral liquid glucose challenge test was done to evaluate glucose response. A ratio of serum glucose levels at the 1 hour and 2 hour marks was calculated. HOMA-IR was calculated using standard formula. All patients signed an informed consent and the protocol was approved by the institutional IRB.

**Results:** All patients underwent a successful laparoscopic bariatric procedure (VSG =12, DS =7 and RYGB =7). Although self selected, the groups were similar except for the higher preoperative BMI of the switch patients (BMI=62.2±13.6 compare to 47.9±9.0 in VSG patients and 49.1±12.07 in RYGB patients). Preoperatively, 18 patients had increased insulin resistance based on HOMA>2.5. 12 were diabetic or pre diabetic based on HgbA1c > 6.0%, and five had fasting blood glucose level (FBS) > 120 mg/dL. At six month follow-up, mean BMI decreased by 16.5±5.10.7, HgbA1c decreased by 0.39±1.43%, fasting glucose decreased by 15.8±29.3 mg/dL. 12/18 patients had HOMA <2.5, 9/12 had HgbA1c < 6.0% (1 > 6% with each procedure), and 3/5 had FBS < 120 mg/dL. Table 1 shows the results by procedure HOMA-IR decreased from a mean of 7.9 to 0.85 (RYGB), from 3.08 to 1.08 (DS) and 12.04 to 4.2 (VSG). Six month GTT 1hr/2hrs glucose ratio was 2.2 (RYGB), 1.56 (DS), 1.66 (VSG).

**Conclusions:** Our data demonstrates that all the stapling weight loss operations improve insulin resistance and improve HgbA1c. Six month weight loss was similar between RYGB and VSG, and highest in DS. Improvement in insulin resistance, measured by HOMA-IR, did not correlate with weight loss. Higher 1hr/2hrs glucose ratio with RYGB suggests rapid absorption of nutrients with a sharper rise and fall in glucose level. The combination of rapid emptying and improved insulin sensitivity may result in hypoglycemia promoting maladaptive eating, or in the extreme, neuroglycopenia. Preserving the pyloric valve may result in a more physiologic improvement in insulin resistance, while demonstrating meaningful improvement in HgbA1c. Our completed study that will include 60 patients, one year follow up with solid meal and liquid glucose challenge will hopefully clarify these issues.

**Table 1.**

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Change in BMI</th>
<th>Change in HgbA1c</th>
<th>HOMA PRE/POST</th>
<th>1hr/2hrs glucose Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>VSG</td>
<td>11.29±5.44</td>
<td>0.45±0.69</td>
<td>286%</td>
<td>1.66±0.64</td>
</tr>
<tr>
<td>DS</td>
<td>18.4±9.0</td>
<td>0.91±0.81</td>
<td>285%</td>
<td>1.56±0.5</td>
</tr>
<tr>
<td>RYGB</td>
<td>13.3±6.9</td>
<td>0.68±0.86</td>
<td>929%</td>
<td>2.2±0.84</td>
</tr>
</tbody>
</table>

**S088**

**GASTRIC BYPASS SURGERY RESTORES MEAL STIMULATION OF THE ANOREXIGENIC GUT HORMONES, PEPTIDE YY AND GLUCAGON-LIKE PEPTIDE-1 INDEPENDENTLY OF CALORIC RESTRICTION.** Sarah Evans, MD, Zehra Pamuklar, MD, Jonathan Rosko, RN, Patrick Mahaney, RD, Ning Jiang, MD, Chan Park, MD, Alfonso Torquati, MD Duke University, Department of Surgery

**INTRODUCTION** – This study investigated the effects of gastric bypass surgery (GBS) on the postprandial levels of anorexigenic gut hormones. Our primary hypotheses were that obese individuals with type 2 diabetes mellitus (T2DM) lack significant postprandial stimulation of polypeptide YY (PYY), and glucagon-like peptide-1 (GLP-1) and this response is restored after GBS independently of caloric restriction.

**METHODS AND PROCEDURES** – PYY and GLP-1 were measured in the fasting state and at different time points after a standardized liquid meal in two matched groups of obese subjects with T2DM treated only with oral hypoglycemic medications. The meal stimulation test was performed before and after (12 ± 4 days) the two study interventions: Group 1 (n=10) – Gastric Bypass Surgery (GBS); Group 2 Control (n=10) – Caloric restriction by liquid diet matching post–GBS diet.

**RESULTS** – The two groups were successfully matched for sex (3M/7F in both cohorts), age (Control = 46.3 ± 6.5 years, GBS = 49.6 ± 11.1 years), and preoperative BMI (Control = 44 ± 8.9, GBS =45.6 ± 7.6). The magnitude of post-intervention change in BMI was similar in the two groups (~2.9 in GBS and -2.4 in Controls). However, excess weight loss was significantly higher (P<0.01) in the GBS group (14.2%) than in the Control group (7.2%). As shown in the Figure, patients following GBS had a significantly (P=0.01) increased postprandial plasma levels of PYY and GLP-1 favoring enhanced satiety than obese controls with matched caloric restriction.

**CONCLUSIONS** – At baseline, the entire obese cohort in our study had a blunted postprandial PYY and GLP-1 response, which may reflect a functional deficiency state. However, following GBS there is a significant restoration of the postprandial stimulation of PYY and GLP-1 that is clearly independent from caloric restriction. The phenomenon of “bariatric surgery-induced anorexia” may be potentially linked to the increased postprandial levels of PYY, and GLP-1 observed after GBS.

**S089**

**VALIDATION OF OBSERVATIONAL CLINICAL HUMAN RELIABILITY ASSESSMENT (OCHRA) IN LAPAROSCOPIC COLORECTAL SURGERY PERFORMED BY SPECIALISTS** Danilo Miskovic, MD FRCS, Melody Ni, PhD, Susannah M Wyles, MSc MRCS, Amjad Parvaiz, FRCS, George B Hanna, PhD FRCS Imperial College, London, United Kingdom

**Objective:** The objective of this study was to investigate if it is possible to establish construct and predictive validity for the observational clinical human reliability assessment (OCHRA) method in laparoscopic colorectal surgery (LCS) within a group of specialist surgeons (consultants).
**Methods:** Thirty-one full-length videos (15 right and 16 left colectomies) performed by 20 different established UK colorectal surgeons participating within the National Training Program in LCS were analysed. Of those, 10 were performed by experienced laparoscopic surgeons ("experts", >200 laparoscopic colorectal resections) and 21 by less experienced ("apprentices", ≤50 resections). A detailed task and error analysis was created and each video was assessed using scientific rating software. Procedures were broken down into 4 main task areas (exposure, vascular pedicle dissection, mobilization of colon, resection/ anastomosis). Errors included instrument and tissue handling errors. Immediate consequences (e.g. bleeding, organ injury) were also noted. In addition, for the sub-task "lateral mobilization of colon", the time spent on dissection of tissue and exposure were measured. The ratio between dissection to exposure time served as an indicator for efficiency (E:D ratio). For each video, two independent, blinded experienced surgeons ("faculty") were also asked to globally assess the video with the aim to conclude if the performing surgeon demonstrated adequate skill to carry out such surgery independently ("pass/fail/inconclusive"). Between group differences were analyzed using the Mann Whitney U test. A Bayesian network was built to predict the global outcome ("pass/fail or inconclusive") based on OCHR data.

**Results:** Based on the faculty ratings, 18 cases passed, 9 failed and 4 were inconclusive. All expert cases passed. A total of 385 errors were recorded by OCHR. There was a significant difference between experts and apprentices for total number of errors (p=0.001), instrument errors (p=0.002), tissue errors (p=0.001) but not for consequential errors (p=0.092). Comparing surgeons who passed with those who failed showed similar results but there was also a significant difference found for consequential errors (p=0.02). Excluding the experts, the significant difference remained only for tissue errors (p=0.017), and for consequential errors (p=0.009). Overall, the between group differences were more distinct in the vascular dissection (p=0.146) and mobilization task (p=0.048) than other task areas. The predictive validity achieved through the Bayesian network was high (area under the ROC curve = 0.825). The model showed that tissue errors and consequential errors committed during vascular pedicle dissection, mobilization and resection of the colon were more diagnostic for the global outcome than other error types or task areas. Regarding efficiency, there was a significant difference between E:D ratios for experts and apprentices (0.98 vs. 0.53, p=0.002), but not between the pass and fail groups.

**Conclusion:** These data suggest that proficiency in advanced laparoscopic surgery can be assessed using OCHR. The Bayesian network showed that the outcomes of two independent expert surgeons could be accurately predicted. The E:D ratio can be used as an indicator for expertise. This is promising data towards the aim to conclude if the performing surgeon demonstrated adequate skill to carry out such surgery independently ("pass/fail/inconclusive"). Workload was similar between experts and novices and frustration was low for both groups. No significant differences were detected between experts and novices for the 9 tasks and the overall workload (scale 1-10, 10 = high workload) ratings: 4.8 ± 111 (p<0.001), respectively. Importantly, frustration ratings were relatively low for both groups (4.0 ± 3.8 vs. 3.8 ± 1.6, n.s.).

**Task 1**

<table>
<thead>
<tr>
<th></th>
<th>Task 1</th>
<th>Task 2</th>
<th>Task 3</th>
<th>Task 4</th>
<th>Task 5</th>
<th>Task 6</th>
<th>Task 7</th>
<th>Task 8</th>
<th>Task 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expert</td>
<td>97 ± 5</td>
<td>104 ± 7</td>
<td>94 ± 9</td>
<td>105 ± 6</td>
<td>106 ± 5</td>
<td>104 ± 13</td>
<td>110 ± 5</td>
<td>101 ± 31</td>
<td>134 ± 20</td>
</tr>
<tr>
<td>Apprentice</td>
<td>94 ± 9</td>
<td>86 ± 19</td>
<td>71 ± 16</td>
<td>88 ± 7</td>
<td>89 ± 11</td>
<td>66 ± 24</td>
<td>30 ± 35</td>
<td>263 ± 31</td>
<td></td>
</tr>
<tr>
<td>p value</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

**Conclusion:** Using objective performance metrics, all 9 exercises demonstrated construct validity. Workload was similar between experts and novices and frustration was low for both groups. These data suggest that the 9 structured exercises are suitable for proficiency-based robotic training.

**S091**

RANDOMIZED CONTROLLED TRIAL OF LAPAROSCOPIC PARTIAL TASKS WITH A REVERSED CAMERA VIEW VERSUS REVERSED-Orientation Drills Samaan Sattarzadeh, Adnan Mohsin, Shawn Tsuda, MD University of Nevada School of Medicine

**INTRODUCTION:** Advanced laparoscopic procedures occasionally require operating or assisting with the camera oriented between 90 and 270 degrees in relation to the instruments. Prior studies have shown reversed camera operating to be significantly more cumbersome than operating with a forward camera orientation. No current laparoscopic skills training curricula address training in the reversed camera orientation. The aim of this study is to identify laparoscopic training drills that best improve performance when faced with a reversed camera orientation.

**METHODS:** Thirty medical students were randomly divided into three study arms. All participants were required to perform...
a laparoscopic peg transfer in the validated Fundamentals of Laparoscopic Surgery manual skills trainer until able to reproduce a time of 48 seconds consecutively in one direction without any errors (peg drops). The experimental arm only practiced conducting the peg drill with the camera in the 180 degree reversed orientation. The intervention arm practiced tracing standardized geometric shapes with the camera in the reversed orientation. The control arm performed the peg transfer with the camera in the forward direction. Times were measured and recorded at the completion of each designated drill. Participants in each group practiced their designated drill for two, three, six, and nine repetitions before being tested by conducting the peg drill in one direction in the reversed camera orientation. An ANOVA analysis was used to compare means across the three groups and a Tukey's post-hoc test was used to confirm significance (p<0.05).

RESULTS: Significant differences in time were observed between the reversed camera peg drill group and the control group across all repetitions. The largest difference was after six repetitions (134.63 +/- 43.27 seconds), but were still significant after nine repetitions (96.46 +/- 37.449 seconds). Significant time decreases in performing the peg transfer with a reversed camera view were observed between participants practicing the reversed camera peg drill versus the group practicing only instrument orientation drills with the reversed view for all repetitions (p<0.05), but not between the reversed camera partial task group and the control group. Errors (peg drops) were insignificant between all groups across all repetitions.

CONCLUSION: Practicing reversed camera drills conferred improvement in performance of a validated laparoscopic task, with the greatest improvement after six repetitions. A reversed camera partial drill designed to provide directional orientation provided no advantage over practicing the same drill in the forward direction. Warm-up laparoscopic drills designed to duplicate real-world movements with a reversed camera orientation may be warranted to improve performance time compared to simple, in vivo directional orientation prior to the activity, or practicing with a forward camera orientation.

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DOES PREVIOUS LAPAROSCOPIC EXPERIENCE IMPROVE THE ABILITY TO PERFORM SINGLE INCISION LAPAROSCOPIC SURGERY? Trystan M Lewis, Mr, Rajesh Aggarwal, Mr, Richard M Kwasnicki, Mr, Ara Darzi, Prof, Paraskevas Paraskeva, Mr Imperial College London

Introduction: Single Incision Laparoscopic Surgery (SILS) has been suggested as a safer and less invasive alternative to standard laparoscopic surgery (LAP). It is not clear whether previous laparoscopic experience improves your ability to perform SILS. This study aims to assess the impact of laparoscopic experience on performing SILS.

Methods and Procedures: 18 surgeons were recruited, 12 novice surgeons, 4 experienced laparoscopic surgeons and 2 attended surgeons (expert). All subjects completed four tasks from the validated Fundamentals of Laparoscopic Surgery (FLS) curriculum. The tasks were performed using both a LAP and SILS approach with a randomized crossover design. Assessment of the tasks was performed using standardized FLS metrics and dexterity analysis using the Imperial College Surgical Assessment Device (ICSAD).

Results: The novice group performed two tasks (precision cutting and intra-corporeal suture) significantly better using a LAP approach than a SILS approach in all parameters (p<0.05). The two other tasks (peg transfer and endoloop) were performed significantly better LAP than SILS for time and dexterity only (p<0.05), but not for error score. The intermediate and expert groups demonstrated no significant difference between their LAP and SILS performance for all tasks in any parameter. Inter group analysis of performance demonstrated construct validity of the SILS tasks with significant differences between novice and intermediate performance on three tasks (peg transfer, endoloop and intra-corporeal suture) (p<0.05) and between novice and expert performance on three tasks (peg transfer, precision cutting and intra-corporeal suture) (p<0.05).

Discussion: This study demonstrates that previous laparoscopic experience improves your ability to perform SILS tasks. Some SILS tasks do not show construct validity due to the complexity of the SILS technique. It is also implied that current LAP technical skills training curricula are insufficient for teaching SILS.

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COMPARISON OF LAPAROSCOPIC SKILLS PERFORMANCE USING LAPAROSCOPIC SINGLE-SITE ACCESS (SILS) DEVICES VS. AN INDEPENDENT-PORT SSA APPROACH Matthew R Schill, BSE, J Esteban Varela, MD, Margaret M Frisella, RN, L. Michael Brunt, MD Section of Minimally Invasive Surgery, Washington University School of Medicine, St. Louis, MO

Introduction: Interest in single site access (SSA) laparoscopy as an alternative to standard multi-port laparoscopy has led to the development of SSA–specific access devices. We analyzed and compared performance of validated laparoscopic tasks on four commercially available SSA access devices (AD) compared to an independent port (IP) SSA set-up.

Methods: A prospective, randomized study of laparoscopic skills performance on four AD-SSA set-ups (Applied Medical GelPOINT, Coviden SILS Port, Ethicon Endo-Surgery SSL Access System, ASC TriPort) and an IP-SSA set-up (three independent low profile ports placed via one access site) was conducted. Fourteen medical students (2nd-4th year), four surgical residents, and five attending surgeons were first trained to proficiency in multi-port laparoscopy using four laparoscopic drills (peg transfer, bean drop, pattern cutting, extracorporeal suturing) in a standard laparoscopic trainer box model. These four drills were then performed in random order on each IP-SSA and AD-SSA set-up using straight instruments. Repetitions were timed and number of errors recorded. Data are mean ± SD, and statistical analysis was by two-way ANOVA with Tukey HSD post-hoc tests.

Results: Level of training and port set-up used had statistically significant effects on total task time (see table; p < 0.001). Attending surgeons had significantly faster total task times than either residents or students (p < 0.001), but the difference between residents and students was not significant. Pair-wise comparisons between set-ups within each group revealed statistically significant differences in total task time between the IP-SSA set-up and each of the AD-SSA set-ups within the student group. Although times averaged over 100 seconds longer for the AD-SSA set-ups vs IP-SSA for residents and attending surgeons, the differences were NS. Overall, independent of level of training, the total task time was significantly less for the IP-SSA set-up than for either of the four AD-SSA set-ups (p < 0.001). Similarly, independent of level of training, the IP-SSA set-up was significantly faster than 3 of 4 AD-SSA set-ups for peg transfer, 3 of 4 AD-SSA set-ups for pattern cutting, and 2 of 4 AD-SSA set-ups for suturing (not shown). No statistically significant differences in error rates between IP-SSA and AD-SSA set-ups were detected.

<table>
<thead>
<tr>
<th>SSL Port Set-up</th>
<th>Students (n=14)</th>
<th>Residents (n=4)</th>
<th>Attending Surgeons (n=5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent</td>
<td>427.6 ± 73.1</td>
<td>418.5 ± 71.5</td>
<td>371.7 ± 42.5</td>
</tr>
<tr>
<td>GelPOINT™</td>
<td>560.0 ± 102.5</td>
<td>536.8 ± 42.2</td>
<td>417.6 ± 85.0</td>
</tr>
<tr>
<td>SILS™ Port</td>
<td>558.5 ± 107.4</td>
<td>531.6 ± 41.6</td>
<td>407.6 ± 94.5</td>
</tr>
<tr>
<td>SSL Access System™</td>
<td>587.5 ± 113.6</td>
<td>624.1 ± 143.7</td>
<td>429.8 ± 47.0</td>
</tr>
<tr>
<td>TriPort™</td>
<td>605.7 ± 104.8</td>
<td>561.3 ± 118.8</td>
<td>434.0 ± 83.0</td>
</tr>
</tbody>
</table>

Table. Total combined task time for the four drills (in seconds). *p<0.05 compared with IP-SSA set-up (within groups).
S094  
DEFINING A PROFICIENCY-BASED VIRTUAL REALITY CURRICULUM FOR LAPAROSCOPIC COLORECTAL SURGERY  
Vanessa N Palter, MD, Mauritis Graafland, MD, Marlies P Schijven, MD PhD, Teodor P Grantcharov, MD PhD St. Michael’s Hospital, Toronto, On, Canada., Academic Medical Center Amsterdam, Amsterdam, The Netherlands  

Introduction: Laparoscopic colorectal surgery is an advanced minimally invasive procedure with a long variable learning curve. Although task training on virtual reality simulators has been shown to transfer to the operating room, to date no virtual reality curricula have been described for advanced minimally invasive procedures such as laparoscopic colorectal surgery. The objective of this study is twofold. First, to determine the essential elements in a virtual reality technical skills curriculum for laparoscopic colorectal surgery using the Delphi consensus methodology. Second, to define expert benchmarks for the developed virtual reality technical skills curriculum.  

Methods: The virtual reality system that will be utilized in the curriculum is the LapSim system (Surgical Science, Sweden). The LapSim offers a total of 27 tasks. The Delphi method was used to determine expert consensus on the tasks that are relevant to teaching the technical skills required to perform laparoscopic colorectal surgery. These tasks were compiled into an online survey used to recruit participants for the survey. Twenty international experts in virtual reality simulation were recruited to participate in the survey. The participants rated each identified LapSim task on a Likert scale from 1 to 5. After consensus was reached, specific curricular tasks that over 80% of the experts rated as either “agree” or “strongly agree” on the Likert scale were included in the final technical skills curriculum. Results of the survey were validated by group averages and standard deviations until expert consensus (Cronbach’s Alpha >0.8) was reached. After consensus was reached, specific curricular tasks that over 80% of the experts rated as either “agree” or “strongly agree” on the Likert scale were included in the final curriculum.  

In order to determine the expert benchmark scores for the identified curricular tasks, 10 experts (completed more than 100 laparoscopic colorectal procedures) were recruited. Each expert completed all curricular tasks on the “easy”, “medium” and “hard” setting of the simulator. Median expert benchmark scores relating to time and economy of movement were calculated for each curricular task on each of the 3 levels of difficulty.  

Results: In the first round of the survey, Cronbach’s was 0.715 and after the second round, consensus was reached at 0.865. Consensus was reached for 7 of the basic tasks (coordination, lifting and grasping, clipping, cutting, grasping, handling intestine and fine dissection) and for 1 advanced suturing task. Nine experts completed the curriculum in its entirety. Median experts scores were calculated for all curricular tasks. For example, for the easy level of the fine dissection task, the median expert scores were as follows: time 71.8s, right grasper angular path 0.56m, left grasper path length 0.38m, left grasper angular path 116.68°, and right grasper angular path 82.45°.  

Conclusions: The Delphi method allowed for expert consensus to be reached on the essential components of a virtual reality curriculum for laparoscopic colorectal surgery. Expert benchmarks were determined for all curricular tasks. Ultimately trainees will practice on the LapSim until they reach these identified expert levels of proficiency for all curricular tasks.

S095  
GAZE TRAINING IMPROVES TECHNICAL PERFORMANCE AND RESISTANCE TO DISTRACTIONS IN VIRTUAL LAPAROSCOPIC SURGERY  
Mark Wilson, Sam Vine, James Brewer, Elizabeth Bright, Rich Masters, John McGrath University of Exeter  

OBJECTIVES: The operating room environment is replete with stressors and distractions that increase the attentional demands of what are already complex psychomotor procedures. As the attentional control of novices appears to be particularly disrupted by auditory distractions, helping trainees to minimize such cognitive overloading should be considered an important aspect of surgical training. Contemporary research in other fields (e.g., sport) has revealed that gaze training interventions may develop robust movement skills. The aim of the current study was to examine the utility of such an intervention in protecting technical laparoscopic skills under attentionally demanding and distracting multi-tasking conditions.  

METHODS AND PROCEDURES: Twenty medical trainees with no laparoscopic experience were divided randomly into one of two treatment groups: A gaze training (GAZE) and a movement training (MOVE) group. Participants were fitted with a Mobile Eye gaze registration system, which measures eyeball gaze at 25Hz. Training consisted of ten repetitions of the ‘eye-hand coordination’ task from the LAP Mentor VR laparoscopic surgical simulator. The GAZE group watched a video revealing the gaze control of an expert surgeon performing the task, and received video feedback of their gaze control on subsequent attempts. The MOVE group watched a video revealing the tool control of an expert surgeon performing the task, and received video feedback of their tool control on subsequent attempts. After training, all participants completed a retention test (design to assess learning) and a transfer test, in which they completed the procedure while performing a concurrent tone counting task (distinguishing one tone from 3 other distracting tones). Completion time data were downloaded from the LAP Mentor feedback software and subjected to a 2 (Group) x 2 (Test) ANOVA.  

RESULTS: There were significant main effects for group, F(1,18) = 16.26, p < .005, ES = .48; and test, F(1,18) = 21.41, p < .001, ES = .54; and a significant interaction effect, F(1,18) = 15.84, p < .005, ES = .47. See Table 1 below for the completion time results in seconds (means ± SD).  

<table>
<thead>
<tr>
<th></th>
<th>Retention Test</th>
<th>Transfer Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gaze Trained</td>
<td>27.9 ± 5.84</td>
<td>28.6 ± 4.04</td>
</tr>
<tr>
<td>Movement Trained</td>
<td>41.2 ± 12.11</td>
<td>49.9 ± 13.83</td>
</tr>
</tbody>
</table>

CONCLUSIONS: The results suggest that gaze training may have a place alongside more traditional training of movement patterns. Not only did the GAZE group learn more quickly than the MOVE group (better performance in the retention test), they showed no degradation of performance under concurrent task loading (transfer test). These results suggest that although the intervention focused on training gaze behavior only, there were indirect benefits for movement behaviors and performance efficiency: Improving gaze aided the self-organization of motor skill without direct coaching of the motor behavior. Additionally, focusing on a single external target, rather than on complex movement patterns, may have freed-up attention resources, which could be applied to concurrent cognitive tasks. As surgical performance relies on more than just technical proficiency, this finding has interesting clinical utility.
SAGES 2011 Scientific Session Oral Abstracts

S096

**METHODIST ADVANCED (MAD) SKILLS DRILLS : MODIFICATION OF A BOX TRAINER TO ENABLE “OFF AXIS” TRAINING IN ADVANCED LAPAROSCOPIC SURGERY**

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Methodist Institute for Technology, Innovation and Education (MITIE), Department of Surgery, The Methodist Hospital, Houston - TX

**Introduction:** Standard laparoscopic surgery utilizes a triangulated configuration of the instruments with respect to the camera. The on-axis configuration is seldom encountered in advanced laparoscopic surgery (ALS) where off axis configurations of the instruments makes the task challenging due to the ergonomic and spatial challenges introduced. The on axis configuration of current validated training platforms is thus inadequate to meet these challenges. Training to proficiency in a box trainer modified for this purpose may enhance intra-operative performance. This ongoing study seeks to develop and validate a box trainer especially suited for this purpose.

**Methods:** A standard box trainer (Simulab Corp) was modified to allow off axis configuration of the instruments with respect to the camera. The simulated abdominal wall has eight stations labeled 1-8 along an imaginary circle with each station being at 45° increments to the neutral position (station 1). Thus station 2 is 45° from and station 3 is 90° from station 1 and so on. A color CCD camera with variable focal length and zoom was mounted behind station 1. A series of LED lights mounted horizontally on a rigid bar provided ambient lighting. To establish a baseline for performance, 8 expert surgeons who are fellowship trained in minimally invasive surgery and are certified in the fundamentals of laparoscopy (FLS) were invited to participate. Each subject performed 3 validated drills: running string (UT (MITIE), Department of Surgery, The Methodist Hospital, Houston, TX), PEG transfer and intra-corporeal suturing (FLS) under proctor supervision. All subjects performed each of the three tasks as they moved from station 1-8 by rotating the box clockwise. Subjects were scored with respect to time and accuracy. The box trainer system has been extensively described previously. A score of zero was administered if the subject was unable to complete the task. A cut off time of 300 seconds was applied to the running string drill and 600 seconds to the other two tasks. All performances were digitally recorded. Results are expressed as mean ± SD.

**Results:**

### Task 1 Running String

<table>
<thead>
<tr>
<th>Station</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time (sec)</td>
<td>53±10.4</td>
<td>58±16.2</td>
<td>72±14.2</td>
<td>144±5.4</td>
<td>201±7.8</td>
<td>206±6.4</td>
<td>102±19.2</td>
<td>58±10.6</td>
</tr>
<tr>
<td>Score (/300)</td>
<td>247±10.4</td>
<td>242±16.2</td>
<td>228±14.2</td>
<td>226±5.4</td>
<td>139±31.9</td>
<td>110±58.2</td>
<td>198±19.2</td>
<td>242±10.6</td>
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</tbody>
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### Task 2 PEG Transfer

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<th>Station</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time (sec)</td>
<td>76±22.1</td>
<td>92±24.1</td>
<td>120±24.4</td>
<td>226±92.2</td>
<td>463±171.2</td>
<td>377±135.6</td>
<td>166±39.7</td>
<td>101±18.2</td>
</tr>
<tr>
<td>Score (/600)</td>
<td>524±22.1</td>
<td>508±24.1</td>
<td>480±24.4</td>
<td>381±89.3</td>
<td>202±142</td>
<td>258±99.3</td>
<td>434±43.1</td>
<td>496±22</td>
</tr>
</tbody>
</table>

### Task 3 Intra-corporeal Suture

<table>
<thead>
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<th>Station</th>
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<th>5</th>
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<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time (sec)</td>
<td>15±9.2</td>
<td>144±97.9</td>
<td>221±13.1</td>
<td>391±195.7</td>
<td>455±186</td>
<td>552±99.9</td>
<td>238±122.1</td>
<td>134±49.5</td>
</tr>
<tr>
<td>Score (/600)</td>
<td>449±9.1</td>
<td>454±97.8</td>
<td>377±116.7</td>
<td>242±194.2</td>
<td>331±78.1</td>
<td>166±95.5</td>
<td>258±121.2</td>
<td>464±50.9</td>
</tr>
</tbody>
</table>

**Conclusions:** The MAD skills drills challenge even the best surgeons as reflected in higher times and lower scores at stations 4, 5 & 6. These drills demonstrate potential for off-axis training in ALS. Further work will establish construct and concurrent validity.

S097

**MASTERY VERSUS STANDARD PROFICIENCY TARGETS FOR BASIC LAPAROSCOPIC SKILL TRAINING: EFFECT ON SKILL TRANSFER AND RETENTION**

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**Introduction:** Simulation is effective for the acquisition of fundamental surgical skills through goal-directed practice. There is little evidence, however, to guide educators on how to best implement simulation within the curriculum. We investigated 1) whether practicing a basic simulator task (peg transfer, PT) facilitates learning a more complex skill (intra-corporeal suture, ICS) and 2) compared the effect of training to mastery on the PT task (overtraining) with training to the passing level (standard training) on learning the ICS task.

**Methods:** 98 laparoscopic simulator naïve participants were evaluated in the FLS PT and ICS tasks at baseline using standard metrics. Participants were randomized to one of three PT training groups: controls (no PT practice), standard training (PT practice to the passing FLS score (235)), and overtraining (PT practice to mastery level (252)). All participants were trained by a blinded educator in ICS until the passing FLS score (370) was achieved. The learning curves for ICS were analyzed by estimating the learning plateau (asymptote) and learning rate (number of trials to reach 95% of plateau) using nonlinear regression. Skill retention was assessed by retesting participants on both tasks one month after completing ICS training. The groups were compared using ANOVA. Effectiveness of skill transfer was calculated using the Transfer Effectiveness Ratio (TER), relating time needed to learn ICS to time invested in PT practice. Data are presented as mean (SD). *p<0.05.

**Results:** 77 participants completed the study: 28 controls, 26 standard and 23 overtrained. ICS learning curve plateau rose with increasing PT practice (452(10) vs. 459(10) vs. 467(10), p<0.01). There was a trend toward higher initial ICS score (128(107) vs. 127(110) vs. 183 (106), p=0.13) and faster learning rate (15(4) vs. 14(4) vs. 13(4) trials, p=0.10) with increasing PT training. At retention testing, initial PT score was lower in the control group (202(27) vs. 236(8) vs. 242(17), p<0.01), but did not differ between standard and overtraining (p=0.5). There were no differences in ICS retention scores. PT training took 20(10) minutes for standard training and 39(20) minutes for overtraining (p<0.01). ICS training time was 53(17) minutes for standard and 42(17) minutes for overtrained participants (p=0.05); post hoc analysis revealed that the overtrained participants saved an average of 11(5) minutes in ICS training compared to controls (p=0.04). However, the TER for was 0.165 for the overtraining group and 0.160 for the standard group (202(27) vs. 236(8) vs. 242(17), p<0.01), but did not differ between standard and overtraining (p=0.05).

**Conclusions:** For novices, initial training using the PT task facilitates learning ICS. Overtraining on PT, however, proved to be an inefficient strategy for learning ICS, as there were only minor differences in ICS learning plateaus despite a significant time investment.
**S098**

**PREDICTIVE MARKERS OF DIFFICULTY OF LAPAROSCOPIC SPLENECTOMY: SPLENIC LENGTH OR 3D ANALYSIS OF SPLENIC VOLUME?**

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Department of General Surgery, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, USA; Surgical Planning Laboratory, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, USA

**INTRODUCTION:** The purpose of this study is to determine whether 3D model based volumetric analysis can predict surgical outcome more reliably than a one-axis splenic length measurement in order to provide a better pre-procedural evaluation for Laparoscopic Splenectomy (LS). Laparoscopy has become the standard approach for elective removal of the spleen for both benign and malignant indications. Pre-operative assessment generally includes a CT scan to measure splenic size, using maximal splenic length as a surrogate marker of anticipated surgical difficulty. This method is commonly used, with some using a length above 20 or 25cm as a contraindication to a laparoscopic approach.

**METHODS AND PROCEDURES:** We analyzed 72 patients who had undergone LS between 1997 and 2006 in our institution. Outcomes including estimated blood loss (EBL), operative room times (OR time), and length of stay (LOS), were collected and correlated to maximal recorded splenic length. We then gathered contrast enhanced CT images for 15 patients, and created 3D reconstruction with manual segmentation of the spleen and calculated the splenic volume using 1-mm slices and the free source 3D Slicer software [Figure 1]. Linear regression was used to analyze splenic length and splenic volume as a predictor for EBL, OR time, and LOS. Time to complete the modeling for each patient was recorded.

**RESULTS:** There was no association between splenic length and EBL, OR time, or LOS, highlighting that this pre-operative measurement is a poor predictor of surgical difficulty in LS. Splenic volume was however a significant predictor of OR time \( p=0.017, R^2=0.52 \). Reconstruction of spleen models including segmentation, data loading and model rendering took an average of only 13.2 minutes for each patient [Figure 2].

**CONCLUSION:** Volumetric analysis can be a valuable tool for predicting surgical difficulty in LS. With the use of available free source software, pre-operative 3D assessment can support surgical planning, with minimal additional time. Further studies looking at splenic volume versus outcomes will result in better selection of patients suitable for laparoscopic approach.

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**S099**

**LAPAROSCOPIC SPLENECTOMY IS AN EFFECTIVE AND SAFE INTERVENTION FOR HYPERSPLENISM SECONDARY TO LIVER CIRRHOSIS**

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Department of Hepatopancreatobiliary Surgery, West China Hospital, Sichuan University

**Objective:** Laparoscopic splenectomy has become the standard procedure for the normal to moderately enlarged spleens. We carried out this study in order to investigate the safety, feasibility, and effectiveness of laparoscopic splenectomy for hypersplenism secondary to liver cirrhosis.

**Methods and procedures:** We performed a retrospective chart review of 24 cases of laparoscopic splenectomy (group 1), 24 cases of open splenectomy (group 2) for hypersplenism secondary to liver cirrhosis, and 68 cases of laparoscopic splenectomy for immune thrombocytopenic purpura (group 3). We carried out comparisons between groups 1 and 2 and groups 1 and 3 in terms of demographic, intraoperative, postoperative variables, and changes in blood counts and liver function.

**Results:** Patients in groups 1 and 2 had comparable demographic characteristics, but those in group 1 had less estimated blood loss, fewer complications, and shorter duration of oral intake, and they required less analgesia and post-hospital care. In both groups, leukocyte and platelet counts increased significantly and transaminase and total bilirubin decreased, but not significantly, and there was no significant difference between the two groups. Compared with group 3, patients in group 1 were older, had lower hemoglobin levels and leukocyte counts, and a poorer Child-Pugh class, required more operation time, and suffered more estimated blood loss; however, there were no statistically significant differences in terms of conversion rates, transfusion rates, complication rates, and postoperative course.

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**Figure 1. 3D reconstructed model of the spleen**

**Figure 2. Splenic volume as a predictor of OR time**
S100

IMPACT OF POSTERIOR RETROPERITONEOSCOPIC ADRENALECTOMY IN A TERTIARY CARE CENTER: A PARADIGM SHIFT

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Background: Posterior retroperitoneoscopic adrenalectomy substituted its laparoscopic counterpart as the treatment of choice in the management of adrenal tumors in our institution. We present our comparative results between these operative techniques showing the reasons of this change.

Patients: From May 2008 to September 2010 thirty patients (twenty one males and nine males; mean age: 50.3 yrs [21-69]) underwent posterior retroperitoneoscopic adrenalectomy. Operative time, complications, hospital stay, postoperative pain (based on VAS score on days 1 and 3) and cost were compared to thirty selected laparoscopic controls: twenty one females and nine males (mean age: 49.2yrs [25-64], operated between 2006 and 2008. Statistical analysis was based on [chi]2 test.

Results: Adrenal tumors included nine adenomas associated with Cushing’s syndrome, eight adenomas associated with subclinical Cushing’s syndrome, six pheochromocytomas, four aldosteronomas, two adrenal metastases and one androgen producing tumor. Median tumor size was 4.5 cm (1.5-8.0) for the retroperitoneoscopic group and 5.0 cm (2.4-8.0) for the laparoscopic group. Median operative time was similar between the retroperitoneoscopic and the laparoscopic group (96.1min [60-165] vs 85.6min [60-120], p>0.05). Median operative times were significantly reduced after the 20th case (100 min [85-165] vs 70min [60-110], p<0.05). Mean visual analogue scale pain scores were significantly lower for the retroperitoneoscopic group both on days 1 and 3 (0.70-1 vs 3.8(3-6), p<0.05 and 0.2(0-1) vs 3.2(2-6) p<0.05 respectively). Median hospital stay was also better than the laparoscopic group (2.0 days [2-3] vs 3.8 days[3-6]). There were no complications other than three cases of lateral abdominal swelling and one case of hypoesthesia along the 12th intercostal nerve. The cost of the posterior approach was significantly less than that of the laparoscopic technique.

Conclusions: Posterior retroperitoneoscopic adrenalectomy compared to laparoscopic adrenalectomy was safe, fast, although vastly superior in terms of postoperative pain and hospital stay in this series. Being able to reproduce such excellent operative results along with the impressive patient recovery and the significantly reduced operative cost constituted the retroperitoneal approach the method of choice in minimally invasive adrenal surgery.

S101

ROBOTIC-ASSISTED THYMECTOMY IS SUPERIOR TO TRANSSTERNAL THYMECTOMY

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Purpose – This study was conducted to compare perioperative outcomes in patients undergoing robotic-assisted (RA) or traditional transternal (TS) thymectomy. Complete thymectomy is the procedure of choice in the treatment of thymomas and in the treatment of selected patients with myasthenia gravis (MG). Transternal thymectomy is considered the gold standard for the treatment of MG and thymomas. Robotic-assisted thymectomy has emerged as an alternative to open transternal surgery and has become the procedure of choice for patients with thymoma or MG in our practice.

Methods – We performed a retrospective chart review of all patients who underwent RA or TS thymectomy at our institution from February 2001 to February 2010. Data is presented as mean±SD. Student’s-t test and Pearson chi square analyses were performed. Significance was set as p<0.05.

Results – Fifty consecutive patients underwent either TS (35) or RA (15) thymectomy. Patient demographics were similar between groups. The incidence of MG was 5/15 in the TA group and 6/35 in the TS group (p=0.269). There were 10/15 patients with thymoma in the RA group and 14/35 in the TS group. Tumor size was 4.78±1.90 cm in the RA group and 4.41±1.08 in the TS group (p=0.569). There were no conversions to open surgery in the RA group and all procedures were completed robotically. Estimated blood loss was significantly higher in the TS group (151 ml vs. 41 ml, p=0.01). There were 11 postoperative complications in the TS group and 1 complication in the RA group (p=0.022). There was 1 mortality in the TS group and none in the RA group (p = 1.0). Hospital length of stay was 5.6±4 days in the TS group and 1.8±1.6 days in the RA group (p=0.002).

Conclusions – Robotic-assisted thymectomy is superior to transternal thymectomy, reducing intraoperative blood loss, postoperative complications, and hospital length of stay. Further investigation of the long-term oncologic results in thymoma patients and long-term remission rates in patients with MG undergoing RA thymectomy are needed.

S102

AUGMENTED REALITY NAVIGATION SYSTEM FOR LAPAROSCOPIC SPLENECTOMY IN CHILDREN BASED ON PREOPERATIVE CT IMAGE USING OPTICAL TRACKING DEVICE

Satoshi Ieiri, MD PhD, Munenori Uemura, Kouzou Konishi, MD PhD, Takarori Nakatsuji, MD PhD, Mayumi Higashi, MD PhD, Junko Akiyoshi, MD PhD, Ryota Souzaki, MD PhD, Yoshiaki Kinoshita, MD PhD, Morimasa Tomikawa, MD PhD FACS, Kazu Tanoue, MD PhD FACS Department of Pediatric Surgery, Kyushu University

Purpose: In minimally invasive endoscopic surgery, because the surgeon is likely to have less tactile feedback than in the open surgical approach, image assistance can be increasingly helpful for three dimensional anatomical understanding of the surgical target. But in general surgery, the advantages of the 3D image data were reduced by organ shift and tissue deformation caused by motion and pneumoperitoneum. Therefore an intraoperative navigation system is strongly recommended. We developed an augmented reality (AR) navigation system based on preoperative CT imaging. The purpose of this study is to evaluate the usefulness, feasibility, and accuracy of this system using laparoscopic splenectomy in children.
Methods: Volume images were reconstructed by 3D viewer application. We used an optical tracking system for registration between volume image and body surface markers. AR visualization was superimposed preoperative three-dimensional CT images onto captured laparoscopic live images. This system was applied for 6 cases of laparoscopic splenectomy in children. Five patients were hereditaly spherocytosis (HS) and one patient was idiopathic thrombocytopenia purpura (ITP). To evaluate registration accuracy, distances from the marker position to the volume data were calculated.

Results: Developed our AR navigation procedure was successfully introduced in the clinical setting in all cases. This system was able to navigate and superimpose the virtually created images and real-time images with acceptable speed. Overlay images were followed according to the movement of the scope with about 10 fps by using optical tracking system. Typical overlay image was shown in Figure 1. Splenic artery, splenic vein, and pancreas were fused on to laparoscopic live images. The operator recognized the hidden vascular anatomy of the isolated accessory spleen in the fat tissue (Fig. 2a), the splenic artery and vein (Fig. 2b and c), and the pancreatic tail (Fig. 2d) by overlaying an image onto a laparoscopic live image. Preoperative imaging revealed the isolated accessory spleen in one case in which intra-operative localization using conventional laparoscopic means would undoubtedly have been time consuming (Fig. 2a). Operator could confirm the hidden pancreas hidden under the huge spleen (Fig.2e). Finally the staple line was confirmed by AR guidance to preserve the pancreatic tail without complications (Fig.2f). None of the cases required conversion to open surgery. The registration accuracy (FRE: mm) of 6 cases was 18.8 ± 3.56, 5.3 ± 0.08, 5.71 ± 1.70, 10.1 ± 0.60, 4.06 ± 1.71, and 7.05 ± 4.71. The deviations were corrected using the registration of surface profile of the spleen. In only 3cases, Target registration error (TRE) was measured. The registration accuracy (TRE: mm) of 3 cases was 7.00, 4.94, and 3.15. The accuracy in superimposition of the images was sufficient and acceptable level to enable the surgeon to detect the precise 3D orientation.

Conclusion: This navigation system provides real-time anatomical information which cannot be otherwise visualized without navigation. The registration accuracy was acceptable level in clinical laparoscopic operation. In the near future, we will attempt to increase accuracy of our present system, and develop a “clinically approved” multimodal matching method for capturing intra-operative organ deformations.

S103

LAPAROSCOPIC COMMON BILE DUCT EXPLORATION: CLINICAL STUDIES ON TRANSCHELODOCHAL VS TRANSCYSTIC APPROACHES IN 374 CONSECUTIVE CASES Song Liang, MD PhD, Morris E Franklin, MD The Texas Endosurgery Institute

BACKGROUND AND OBJECTIVE: Common bile duct stone as one of most frequently encountered biliary diseases was traditionally managed by choledochotomy with common bile duct exploration (CBDE) for stone removal. Despite being reported, laparoscopic CBDE has still been less favorable in clinical practice with presumption of technical difficulty in this advanced laparoscopic procedure, and popularization of ERCP. This cohort study was designed on a prospectively designed biliary procedure database of our institute to compare laparoscopic transccholodchal with transcystic routes for CBDE, and aimed at defining feasibility and safety of these two different laparoscopic CBDE approaches.

METHOD: A consecutive series of patients undergoing laparoscopic CBDE between April 1991 and May 2006 at the Texas Endosurgery Institute was identified from the Laparoscopic Biliary Procedure Database of the Texas Endosurgery Institute (LBPD-TEI). The steps for laparoscopic transccholodchal-CBDE include laparoscopically creating a 5-10mm longitudinal opening at anterior wall of the common bile duct along its axis, inserting the choledoscope, extracting the stone(s) under direct visualization, lastly placing T-tube for postoperative drainage.

The operation of laparoscopic transcystic-CBDE was performed as the following steps of cystic duct dilation, choledoscope insertion, and stone retraction.

RESULTS: Since 1991, 374 CBDE were attempted laparoscopically following selection criteria for the procedure, and 371 (99.2%) laparoscopic CBDE were completed with a conversion rate of 0.8%. The reasons for the conversions were listed as choledochoduodenal fistulas (n=2) and entero-choledochal fistula (n=1). Of 371 cases, 277 LCBD (74.7%) were performed transccholodchally while another 97 cases (25.3%) were done transcystically. Diagnosis of CBD stone(s) was established in 291 patients preoperatively (77.8%) by biliary system ultrasonography with laboratory tests of direct bilirubin, alkaline phosphatase, and SGOT. Additionally intraoperative cholangiogram (IOC) incidentally diagnosed CBD stone(s) in 83 patients (3.3%) undergoing laparoscopic cholecystectomy. For the transccholodchal CBDE, operating time was 140.7 +/- 69.7 minutes, blood loss was 39.3 +/- 47.6 ml, and multiple CBD stones (>1) were found in 231 patients (83.4%). Postoperatively 13 patients (4.7%) developed complications including pancreatitis (n=1), T-tube dislodgement (n=4), bile leakage (n=6), as well as retained stone (n=2). Length of postoperative hospitalization for the transccholodchal CBDE was 2.4 +/- 1.1 days. In comparison, the operative time for the laparoscopic transcystic-CBDE was 101.6 +/- 39.8 minutes, and blood loss was 26.7 +/- 12.8 ml. Intraoperatively 34 laparoscopic transcystic CBDE explorations were converted to transccholodchally ones due to the technical difficulty. Postoperatively the complications (2 bile leakage and 5 retained stone) were found in 7 patients with the rate of 7.2% (p=0.34), and length of hospital stay was 1.7 +/- 0.9 days.

CONCLUSIONS: Laparoscopic common bile duct exploration can be performed safely and effectively for managing common bile duct stone(s) with comparable operation time, intra- and postoperative complications, and shorter hospital stays. Moreover, despite transcystic laparoscopic CBDE possessing the advantages of maintenance of intactness of common bile duct, transccholodchally CBDE has been our favorable laparoscopic approach because of its benefits in the management of multiple and large CBD stones, and significantly lowered the chance of retained stone(s).

S104

RESULTS OF LAPAROSCOPIC COMMON BILE DUCT EXPLORATION: PROSPECTIVE RANDOMIZED TRIAL V.V. Grubnik, Prof, O.I. Tkachenko, O.L. Kovalchuk Odessa State Medical University

Background: The majority of surgeons in East European countries prefer to perform open procedures in patients with choledocholithiasis. The aim of this study was to analyze safety and benefits of laparoscopic common bile duct (CBD) exploration compared to open.

Methods: Prospective randomized trial was conducted from 2005 to 2009. 256 patients with CBD stones were operated. Laparoscopic CBD exploration was performed in 138 patients (group I), open procedures was done in 118 patients (group II). Mean age was 62,3±5,8 years (61,4±5,2 years in group I and 63,1±6,4 years in group II).

In group I, laparoscopic CBD trans-cystic exploration was successfully performed in 76 patients; laparoscopic choledochotomy was performed in 62 patients. External drain was used in 59 patients. No drain was used in 79 patients.
Postoperative ERSP and stone extraction was required in 8 (5.8%) patients.

Laparotomy, open cholecystectomy with T-tube placement was performed in 118 patients of group II.

Results. No mortality occurred. Mean duration of laparoscopic procedures was 82 min (range 40 to 160 min), mean duration of open surgery was 90 min (range 60 to 150 min) (p>0.1). Mean blood loss was 20 ml for the group I and 285 ml for group II (p<0.01).

Laparoscopic CBD clearance was successful in 94.2 % of patients. Conversion to open procedures was done in 2 (1.4%) cases. Postoperative complications were observed in 7 (5%) patients with subsequent reoperation, who underwent laparoscopic drainage of infrahepatic abscess and suturing of bleeding vessels of CBD. Two bile leaks with retained CBD stones was treated successfully by ERSP and biliary stenting. Another two patients with infrahepatic abscess formation were treated by percutaneous approach. One wound infection was drained without anesthesia. Nonsurgical site complications (1 case of urinary tract infection and 1 case of pneumonia) developed in 2 patients. Thus, morbidity in group I was 6.5 %.

In group II, 3 patients underwent reoperation due to dislocation of drainage in 2 patients, and progressive peritonitis in 1 patient. Morbidity in this group was 15 of 118 (12.7%). Wound infection and abscess formation was the main reason of complications. Mean postoperative stay was 4,2±1.8 days for group I and 12,6±4,5 days for group II (p<0.01).

Conclusions: Laparoscopic CBD exploration can be performed with high efficiency, minimal morbidity and without mortality. Laparoscopic procedures has advances over open ones.

S105

LAPAROSCOPIC TRANS-CYSTIC EXPLORATION FOR SINGLE-STAGE MANAGEMENT OF COMMON DUCT STONES AND ACUTE CHOLECYSTITIS

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INTRODUCTION

Common bile duct (CBD) stones are found in near 10% of patients undergoing elective laparoscopic surgery for symptomatic gallstone disease. For these patients laparoscopic trans-cystic exploration of the common duct (LTCE) with basket catheters has proved to be a safe and effective method to obtain CBD clearance. The occurrence of CBD stones ranges from 10 to 20% in patients presenting with acute cholecystitis (AC) but in this setting little is known about the feasibility and the effectiveness of LTCE as part of a single-stage laparoscopic procedure.

METHODS AND PROCEDURES

We report the results of a prospective study based on a “laparoscopy first” policy for patients with gallstone disease and CBD stones. The study, started in 2003, includes n=201 subjects (n=104 females, n=97 males) with a mean age of 65 yrs (range 23-100). N=104 patients underwent elective laparoscopic surgery (group A) whereas n=97 were admitted on an emergency basis for AC and had urgent laparoscopic surgery within 72 hours from the admission (group B). All patients had intra-operative cholangiograms confirming the diagnosis of CBD stones. LTCE, when not contra-indicated, was carried-out by using basket-wired catheters. Groups did not differ significantly for BMI, previous abdominal surgery and clinical evidence of obstructive jaundice at the time of surgery. Group B patients however were significantly older (means, 68.4 vs. 62.1 yrs; p=0.0045), had a higher proportion of females (56 vs. 41%; p=0.00345) and included more patients in the ASA III and IV classes of risk (39 vs. 21%; p=0.0006). Accomplishment of CBD clearance, operating time, conversion rate, overall morbidity and mortality, postoperative hospital stay, readmission rate and occurrence of residual CBD stones were the main outcome measures. Comparisons were made on intention-to-treat basis by using a statistical software.

RESULTS

Clearance of CBD was obtained in 84% of patients of group A and in 80% of patients of group B (p=ns). For those patients in which LTCE failed (n=36; 18%) alternative procedures included laparoscopic cholecystectomy and ERCP, but in n=16 a laparotomy was eventually required. Time spent in the theatre was significantly longer for group B patients (means, 175 vs. 141 minutes; p=0.0003). There were no significant differences for postoperative hospital stay (means, group A 4.9 vs. group B 5.2 days), readmission rate (group A 3.7 vs. group B 3.7%) and evidence of residual CBD stones (group A 2.8 vs. group B 3.1%). Need to convert and morbidity occurred more frequently in group B (11.7 vs. 4.6% and 28.7 vs. 16.8%, respectively) but differences were not significant. In group A, one patient died from MOF.

CONCLUSIONS

Patients presenting with CBD stones synchronous to AC may benefit from LTCE in a single-stage laparoscopic procedure. LTCE has proved to be a simple technique with a high yield of CBD clearance also in the acute setting. Courses are comparable to those observed for the same procedure in elective surgery despite the fact that acute patients are more at risk for drawbacks.
S107

A-DEFENSINS AND HSCRP FOR COMPARING THE INFLAMMATORY REACTION IN 4-PORT LAPAROSCOPIC VS LESS CHOLECYSTECTOMY
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Introduction: Laparo-Endoscopic Single-Site (LESS) Surgery is an evolution of laparoscopic surgery aiming at decreasing patients’ parietal trauma associated with abdominal operations. LESS has been found so far to be efficient and with the same good results, or even better in some cases (i.e. when pain is concerned), as the standard 4 port laparoscopic cholecystectomy.

A-defensins are antimicrob peptides of the organism. They are the first cell components against pathogens. Cytokines, such as CRP, are also mediators to the response in trauma.

Aim: To compare the inflammatory reaction in LESS and 4 port Laparoscopic cholecystectomy and through that try to explain the difference in results between these two types of procedure.

Material and methods: 40 patients with non complicated cholangitis, were randomly assigned in two groups. Group A for the patients that would be operated with 4 port laparoscopic cholecystectomy and group B for the patients that would undergo LESS cholecystectomy. These patients had BMI<30, were ASA I or II and had no previous upper GI surgery. Blood was taken preoperatively and 6 and 24 hours postoperatively. hsCRP (with automated analyzer) and a-defensins (using ELISA) were calculated for each sample. The same postoperative protocol was followed for both groups. Mann-Whitney U test was used to analyze the results. Pain was calculated with VAS for shoulder and abdomen at 6 and 24 hours. Hospital stay, nausea and pain medication needed was noted.

Results: The a-defensins value was statistically significant higher in the 24 hours samples (p<0.001) for LESS cholecystectomy. No statistical significant difference was shown for hsCRP even though p was 0.05 for the 24hours samples with the values of LESS higher. Student t-test gave a p=0.019 for the same samples. No LESS was converted to classical Laparoscopic cholecystectomy and none of the patients of neither groups needed conversion to open cholecystectomy. Pain was statistically significant less for the LESS at the 24hour interval (p<0.0001). Less medication was needed for LESS patients after the 6th postoperative hour (p=0.007)

Discussion: Inflammatory response is higher for LESS cholecystectomy patients. This could be due to the trauma in the abdomen which does not seem to be less than in the 4 port laparoscopic cholecystectomy. More to that, the maneuvers in LESS are more vigorous, maybe due to lack of experience, adding to the inflammatory reaction of the organism. Despite that, LESS cholecystectomy patients have less pain and do not need as much pain medication as the ones with classic cholecystectomy.

Conclusion: In this study, we evaluated the clinical outcomes, pain scores, serum IL-6, CRP, and leukocyte subpopulations in 31 patients who underwent single port laparoscopic cholecystectomy, comparing with 30 patients who underwent conventional laparoscopic cholecystectomy. We demonstrated no differences in those variables between the single port and conventional laparoscopic groups, although the mean age in the conventional group, the mean operation time in the single port group, and postoperative 4 hour pain score in the single port group were higher than that of the other group. Considering that the higher age was related to less surgery-induced pain and the longer operation time was associated with higher level of IL-6, we suggest that surgical stress in the single port group might be inferior to the conventional group.

S108

LAPAROSCOPIC ROBOTIC ASSISTED WHIPPLE: EARLY RESULTS OF A NOVEL TECHNIQUE AND COMPARISON WITH THE STANDARD OPEN PROCEDURE
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Background: Since the introduction of minimally invasive surgery, surgeons have sought to optimize the efficiency and safety of these techniques. Recently, robotic assistance devices have been employed in conjunction with standard laparoscopic techniques to further refine minimally invasive surgery. The advantages of the laparoscopic and robotic approach to Whipple procedure are well documented, but any added safety or efficacy of laparoscopic robotic assisted surgery has not been demonstrated in the literature. In this series we compare the outcomes of Whipple procedure utilizing the laparoscopic robotic-assisted approach with its conventional open counterpart.

Methods: From March 2009 to August 2010, 25 minimally invasive Whipple resections were performed by two pancreaticoduodenal trained surgeons, compared with 25 open Whipples performed at the Cleveland Clinic Foundation. All resections were performed either using standard laparoscopic robotic-assisted approach using the da Vinci Robotic Surgical system (Intuitive Surgical, Sunnyvale, CA) or open classic Whipple. Retrospective statistical analysis of a prospectively collected group of patients was performed.

Results: Twenty five patients underwent Whipple procedure using a novel laparoscopic robotic-assisted approach and twenty five patients underwent open classical Whipple. Average age was 63 and 62 years in laparoscopic robotic assisted and open groups (p=0.33). Average BMI was (24 vs 26 p=0.19), symptoms were present in (60% vs 64% p=0.38), and ASA score was (ASA 2 50%, ASA 3 45%, ASA 4 5% vs ASA 2 31%, ASA 3 69%) for the laparoscopic robotic assisted and open group respectively. Indications included, adenocarcinoma (44% and 44%), IPMN (16% and 16%), and other (40% and 40%) in the laparoscopic robotic assisted and the open groups respectively. There was one perioperative death in the laparoscopic robotic assisted group. Overall morbidity, including wound infection, was 32% in laparoscopic robotic assisted group and 44% in the open group (p=0.19). Intraoperative factors including blood loss (537 vs 840 ml p=0.16), operative time (488 vs 364 min p=0.0009), in laparoscopic robotic assisted and open groups respectively. Conversion rate was 12% (3) in laparoscopic robotic assisted group. Reinterventions were performed in 8% and 24% in the laparoscopic robotic assisted and open groups respectively (p=0.064). Length of hospital stay was 10 days in the laparoscopic robotic assisted versus 14 days in the open group (p=0.031). Median tumor size was (3.33 vs 3.18 p=0.40), nodes examined (13 vs 12.6 p=0.44), positive margins (0% vs 12% p=0.041) in the laparoscopic robotic assisted and open groups respectively.

Conclusions: This is the only comparison of a novel laparoscopic robotic-assisted approach with the gold standard conventional open approach for Classic Whipple to date in the literature. Our data indicates a significant reduction in length of hospital stay in those patients undergoing laparoscopic robotic-assisted resection versus a conventional open approach. These data suggest equivalent intraoperative factors such as blood loss, and morbidity to open laparotomy. In summary, we find that this laparoscopic robotic-assisted Whipple is a safe and efficacious alternative to the conventional open approach.
S109

OUTCOMES AND COSTS OF LAPAROSCOPIC DISTAL PANCREATECTOMY: COMPARISON TO OPEN RESECTION IN A SINGLE CENTRE. Adrian M Fox, Dr, Kristen B Pitzel, Faizal D Bhojani, Dr, Max Kaplan, Carol-anne Moulton, Dr, Alice Wei, Dr, Sean P Cleary, Dr, Allan Okrainec Division Of General Surgery, Toronto General Hospital, University Health Network, Toronto, ONTARIO; Division Of General Surgery, Toronto Western Hospital, University Health Network, Toronto, ONTARIO

Introduction: Surgical resection for distal pancreatic lesions, especially of low or indeterminate malignant potential, is increasingly performed laparoscopically. Laparoscopic distal pancreatectomy (LDP) is technically challenging, but may have such benefits as decreased post operative morbidity, shorter OR time, and shorter length of stay (LOS). Previous evidence suggests that laparoscopic surgery is more expensive than open surgery due to an increase in operative costs, however a detailed breakdown of hospital expenditures has yet to be completed. The purpose of this study is to compare the short-term clinical outcomes and hospital expenditures associated with laparoscopic or open distal pancreatectomy.

Methods and Procedures: We evaluated all distal pancreatic resections performed at our center between January 2004 and March 2010. Cases were found through a prospectively compiled Hepatobiliary database and correlated with operating room data and cost center information. The hospital’s cost center tabulates detailed accounting for all expenses accrued throughout a specific patients admission. Non-parametric statistical analysis was used to compare oncologic and surgical outcomes.

Results: A total of 133 cases were identified, 50 laparoscopic (including 10 converted cases), and 83 open resections. Demographic characteristics were similar between groups other than a significant predominance of females in the laparoscopic group: 68% females (n=16) LDP and 50.6% (n=41) open (P=0.05). Indication for operation differed by a paucity of malignant tumours being approached laparoscopically: 2.04% (n=1) LDP and 24.1% (n=20) open. Intraoperatively, there were no differences in estimated blood loss, OR time, or transfusion requirement. 10 cases were converted to open (20%); 5 for technical factors, 2 for inability to localise tumour, 1 for bleeding, 1 for large tumour size, and 1 for anatomical uncertainty. Significantly larger tumours were approached by open resection. Median tumour size was 2.6cm (range 1.5-4.25cm; n=49) in the LDP group and 3.5cm (range 2.48-5.98cm; n=82) for open (P=0.028). Median length of stay (LOS) for the LDP cohort was 5 days (range 4-7 days) and that for the open cohort was 7 days (range 6-9 days) (P<0.001). Post operative pancreatic fistulae occurred in 26 patients, with a significantly higher proportion observed in the LDP group at 28.57% (n=14) compared to the open group 14.46% (n=12) (P=0.049). However, pancreatic fistulae were all Grade A except one Grade B in the LDP group. Median OR cost was $3843 for LDP and $3239 for open (P=0.57). Median total cost (CAD, adjusted for inflation) was $11885.70 (9887.99-14423.29; n=47) for the LDP and $14331.44 (12275.99-18112.08; n = 79) for the open resection group (P=0.001).

Conclusion: LDP is both a cost effective and safe approach for lesions that are benign or of low malignant potential. This series has shown shorter LOS and equivalent post operative outcomes for the two groups. The trend to a more expensive OR cost for LDP is offset by a significant saving when total admission costs are combined.

S110

SINGLE CENTER EXPERIENCE OF 327 CONSECUTIVE LAPAROSCOPIC LEFT PANCREATECTIC RESECTION: CHANGING OF SURGICAL PARADIGM OF LEFT PANCREATECTIC RESECTION Songcheol Kim, Ki byung Song, Duck jong Han, Younghun Kim, Jaebum Park, Haeran Ha, Haeryun Seo, Yunbaik Choi Department of surgery, Ulsan University College of Medicine and Asan Medical Center

Aim: Laparoscopic left pancreatic resection (LLPR) is increasingly performed for lesions of the body and tail of the pancreas. The aim of this study is to analyze the clinical characteristics and results after LLPR as a largest single center series, and to find the changing of surgical paradigm of left pancreatic resection

Material and methods: We commenced the laparoscopic pancreatic surgery from May, 2005. 327 patients underwent LLPR for pancreatic neoplasms were reviewed.

Results: The pathologic diagnosis included 68 intraductal papillary mucinous neoplasm (20.8%), 65 mucinous cystic neoplasm (19.9%), 46 serous cystic neoplasm(14.1%), 51 solid pseudopapillary neoplasm(15.6%), 31 neuroendocrine tumors (9.5%), 25 pancreatitis with or without pseudocyst (7.6%), 12 epidermoid cyst, 19 pancreatic ductal adenocarcinoma(5.8%) and 2 pancreatic mucinous adenocarcinoma. 157 cases of spleen saving LLPR was performed(48%), either by main splenic vessel preservation (133, 84.7%) or supported by the short gastric vessels and gastroepiploic vessels (Warshaw technique, 24, 5.3%). The patients with malignant neoplasm of pancreas who were underwent laparoscopic distal pancreatectomy are 31(9.5%). Postoperative complications were occurred in 31(11.9%) patients, including 22 pancreatic fistula(6.7%, ISGPF grade B,C), 10 fluid collection and pseudocyst with drainage(3.1%), 2 post operative bleedings. There was no mortality. Median operative time and postoperative hospital stay were 190 min(range, 78-480 min) and 8 days(range, 4-37days) respectively. The proportion of LLPR was increased from 8.6% in year of 2005 (year of commencing the LLPR) to 68% in 2010. Conclusion: LLPR is becoming as a safe and effective standard surgical method for a wide range of pancreatic neoplasm of body and tail except the far advanced pancreatic cancer.
S111
THE NATURAL HISTORY OF ANATOMIC FAILURE AFTER LAPAROSCOPIC PARAESOPHAGEAL HERNIA REPAIR
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Introduction: Anatomic failure after laparoscopic paraesophageal hernia (PEH) repair ranges from 20-40%. However, the clinical significance of these recurrences has not been clearly delineated. We reviewed the course of known recurrences, and the need for medical management and surgical intervention.

Methods: The records of patients who underwent laparoscopic PEH repair from 1996-2009 were reviewed for anatomic failure. Thirty-seven patients were identified with anatomic failures, who had follow-up information for review. Recurrences were identified by routine barium swallow at 6-12 months postoperatively. Pre-operative variables and operative details were analyzed. Follow-up consisted of symptom scores, use of acid suppression, anatomic or symptomatic progression, and need for reoperation.

Results: Of the 37 patients with anatomic failures, six (16%) had early failures (at <12 days) that were repaired acutely and were excluded from further analysis. Of the remaining 31 patients (mean age 67 yrs), types of PEH originally repaired were: type II (7%), type III (90%), and type IV (3%). Average hiatal defect size was 5.1 x 3.2 cm and 22 of 31 patients (71%) had either a biologic (n=20) or synthetic mesh (n=2) placed at the hiatus. Esophageal lengthening was performed in 7 patients (23%) and a complete Nissen fundoplication in 94%. Recurrences were type I in 93% (average 3.3 cm above the diaphragm) with only 2 recurrent PEH. Two patients had a disrupted wrap without a hiatal recurrence. Mean time to detection of anatomic failure was 15 months (5-60 months). Four patients had a disrupted barium swallow studies 1-3 years after the initial diagnosis of recurrence that showed stable size hernias. Symptom scores were collected in 74% of patients. At a mean follow-up of 27 months (5-96 months), 43% of patients were completely asymptomatic. Prevalence of symptoms at last follow-up were: heartburn in 22%, regurgitation in 13%, solid food dysphagia in 26%, dysphagia to liquids in 9%; and chest pain in 22%.

Conclusions: Most anatomic failures after PEH repair are small type I hiatal recurrences that occur around the first year post-operatively and require no medical intervention. Reoperation is rare over medium term follow-up.

S112
PREVIOUS HIATAL MESH IS ASSOCIATED WITH SIGNIFICANT MORBIDITY AFTER LAPAROSCOPIC REVISIONAL PARAESOPHAGEAL HERNIA REPAIR (PEHR)
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Introduction: Recent studies have suggested increased morbidity associated with revisional foregut surgery utilizing mesh reinforcement. Optimizing the outcome of revisional PEHR remains a challenge. Mesh reinforcement of the hiatal closure has been shown to effectively decrease recurrence rate after PEHR. Our aim was to compare outcomes between patients undergoing laparoscopic revisional PEHR who had a prior mesh repair and those who initially had a primary cruroplasty without mesh reinforcement.

Methods: A database was created from retrospective review of the EMR of all patients undergoing laparoscopic PEHR at our institution from October 2001 through 2009. There were 251 total laparoscopic PEH repairs performed. These included 30 laparoscopic revisional PEHR. Data collected included GI symptom and QOLRAD scores, antacid use, gender, BMI, age, and type of previous repair. This was compared between groups. Perioperative data including method of crural repair, type of mesh used if used, OR time, EBL, and mechanism of failure was obtained. Outcome measures included GI symptom scores, QOLRAD, antacid use scores, OR Time, EBL, perioperative morbidity and mortality, and whether or not gastric or esophageal resection was necessary.

Results: At initial PEHR, 21 patients had primary cruroplasty and 9 patients had mesh reinforcement. Average age, M/F ratio, and preoperative BMI were not significantly different between the two groups. There were significant increases in EBL (212.5 ml vs. 51.0 ml, p=0.0013) and length of stay (7.0 days vs. 2.68 days, p=0.0343) in those with previous mesh repair. Revisional surgery in presence of mesh required gastric resection in 5/9 (56%) patients, whereas 1/21 (5%) patients required resection in the group without mesh (p=0.0046). Only one patient in the entire group required conversion to open laparotomy (nonmesh group) and all procedures were completed through the abdomen. No patient required esophageal resection. Surgical morbidity was significantly higher in the prior mesh repair group (6/9 patients vs. 4/21 patients, p=0.0301), though there was no difference in mortality rates. Postoperatively, recurrence of hiatal hernia after revisional PEHR was lower in the nonmesh group (4.8% vs 11.1%) but this was not significant. Postoperative symptoms scores, QOLRAD scores and antacid use after revisional PEHR were not significantly different between the groups.

Conclusions: Our study shows that patients with hiatal mesh in place who undergo laparoscopic revisional PEHR have a significantly greater likelihood of requiring gastric resection and experience increased perioperative morbidity when compared to patients who have not had prior mesh placed. However, previous mesh placement is not associated significantly poorer outcomes of the revisional PEHR when considering recurrences, antacid use or GI symptoms post-operatively. Conversion to open procedure was not increased by prior mesh placment. This study confirms previous findings that mesh reinforcement of the hiatus, while decreasing PEHR recurrence rates, leads to a more complicated revisional surgery should it be required. The risks and benefits of mesh need to be weighed carefully when performing a primary PEHR.

S113
TRANSESOPHAGEAL ENDOSCOPIC MYOTOMY (TEEM) FOR ACHALASIA—RECOGNIZING POTENTIAL PITFALLS BEFORE CLINICAL APPLICATION
Mahmoud Abu Gazala, MD, Abed Khalaila, MD, Noam Shussman, MD, Samir Abu Gazala, MD, Ram Elzary, MD, Oleg Ponomernco, MD, Gideon Zamir, MD, Avraham I Rivkind, MD FACS, Yoav Mintz, MD Hadassah Ein Kerem Medical Center

Objective: Laparoscopic Heller esophagomyotomy is the standard of care for achalasia treatment. General anesthesia is mandatory and mucosal perforations occur up to 15% of cases. Our aim was to developed a method to perform Transepophageal Endoscopic EsophagoMyotomy (TEAM) which would obviate the need for general anesthesia as well as any external incisions. This technique may offer lower intra-operative complications, reduce the post-operative morbidity and shorten hospital stay up to office procedures. This technique however, has several pitfalls which need to be recognized in order to avoid serious complications.

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Methods: TEEM was performed on 8 pigs. Two were performed to develop the surgical technique, and 6 for survival purposes. Following general anesthesia a mid esophageal mucosal incision was performed using an endoscope. A plane was created in between the esophageal mucosa and the circular muscle fibers. The LES muscle fibers were clearly visualized and divided. The endoscope was then retrieved and the mucosal incision was closed using biological glue. Following two weeks of survival a gastrografin swallow study and necropsy were performed.

Results: TEEM procedure was successfully performed in all 8 porcine animal models. The myotomy included the LES fibers and extended 4-6cm proximally to the esophagus. A temporary pneumothorax was created in all cases. The proximal gastric muscle was divided up to 1-2cm but not full thickness. No injuries to the abdominal or mediastial structures occurred. One pig died on POD1 due to unrecognized pneumothorax. Two pigs had ischemic ulcers at the myotomy site, one of them with mediastinal sepsis and the last three pigs had perfect results. All survived pigs healed completely the mucosal incision site and except for the pig with mediastinal sepsis all ate heartily from the day following surgery and gained weight as expected.

Discussion/Conclusion: TEEM procedure is technically feasible and easy. Having the endoscope in between the esophageal mucosa and muscle fibers clearly avoids mucosal perforation at the site of the Myotomy. In the first three pigs we performed a 30cm submucosal tunnel and used a 12mm dual channel endoscope. This by itself caused a large area of denuded mucosa and followed by ulceration. We modified our technique and created a 10cm tunnel with a 9.8cm gastroscope and avoided this complication. Full thickness division of the esophageal muscle without prior dissection in the mediastinum results in inevitable pneumothorax. Although air can be suctioned prior to mucosal closure, care should be taken not to injure the underlying lung. In the same fashion full thickness division of the gastric portion of the LES can result in liver injury and therefore specially designed instruments should be used which will divide the circular layer only, leaving the longitudinal layer intact. Injury to deeper structures will be avoided and reflux may be prevented. In case of reflux, endolumenal fundoplication may be performed as a second stage. We conclude that TEEM is not yet ready for prime time and perfection of the technique is mandatory prior to safely translating this method to human patients.
These findings suggest that patients would likely benefit from an aggressive endoscopic approach prior to consideration for surgery.

| Table 1. |  |
| Patient Data | EA(n = 68) | SA(n = 41) | P Value |
| **Length of Stay (days)** | 0.6 ± 0.2 | 10.1 ± 1.0 | 0.0000 |
| **Mortality** | 0% | 0% | n/a |
| **Complications** | 18% | 42% | 0.006 |
| **Readmission** | 16% | 34% | 0.03 |
| **Margins Positive** | 20% | 10% | 0.19 |
| **Re-intervention** | 26% | 15% | 0.15 |

**S116 INCIDENCE OF GASTROJEJUNOSTOMY STRicture AFTER LAPAROSCOPIC ROUX-EN-Y GASTRIC BYPASS USING AN AUTOLOGOUS FIBRIN SEALANT**

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**Introduction:** Anastomotic leak at the gastrojejunostomy is a life-threatening complication of laparoscopic Roux en Y gastric bypass (LRYGB). Fibrin sealants have been used as topical adjuncts to promote healing and reduce leaks at the gastrojejunostomy. Our clinical observations suggest that an unintended consequence of sealant use may be the promotion of anastomotic stricture. We hypothesized that use of fibrin sealants at the gastrojejunostomy in patients undergoing LRYGB decreases the incidence of anastomotic leak but increases the incidence of clinically significant stricture at the gastrojejunostomy.

**Methods:** The medical records of 529 patients undergoing LRYGB by two surgeons at a single institution over a five year period were retrospectively reviewed. Patient age, gender, preoperative BMI, the incidence of gastrojejunostomy leak and endoscopically diagnosed stricture requiring dilation within one year of surgery were recorded.

**Results:** Four hundred twenty five patients had fibrin sealant routinely applied to their gastrojejunostomy and 104 did not have any. Four leaks occurred in the sealant group and 2 leaks occurred in the control group. (p = 0.19). Forty-eight strictures requiring dilation occurred in the sealant group while 6 occurred in the control group. There was a significantly increased stricture rate in the sealant group (11.3% compared to a 5.8% stricture rate in patients who did not receive sealant, p=0.048).

**Conclusions:** In our clinical experience the use of fibrin sealant at linear stapled gastrojejunostomy during LRYGB increases the incidence of clinically significant postoperative stricture and does not reduce the incidence of anastomotic leak.

**S117 SURGICAL TECHNIQUE INFLUENCES PERFUSION OF THE GASTRIC CONDUIT USED FOR A MINIMALLY INVASIVE ESOPHAGECTOMY.**

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**Introduction:** Minimally invasive esophagectomy (MIE) offers a novel strategy for the management of resectable esophageal-gastric cancer. However, success of this surgery is highly reliant on fate of the gastric conduit fashioned to restore gastrointestinal continuity. Failure of the conduit is believed to result from ischemia which can be potentially limited by technical modifications. The purpose of this study is to explore the impact of technical refinements on conduit perfusion.

**Methods:** A prospective study was designed to evaluate the MIE technique in our Unit. This is a three-stage procedure consisting of a thoracoscopic esophageal mobilisation and lymphadenectomy, laparoscopic gastric mobilisation, lymphadenectomy and extra-corporeal fashioning of the gastric conduit with a cervical anastomosis. Delivery of the stomach to the outside can be facilitated by use of a hand-port. The conduit can then be carefully constructed to a measured width of 5cm, followed by laparoscopic assisted trans mediastinal delivery to the neck. Perfusion, in tissue perfusion unit, was recorded from the serosal surface of the fundus of the stomach by laser Doppler fluximetry. Measurements were taken at every stage of an MIE (Laparoscopy = baseline, exteriorisation of stomach, conduit formation and delivery at neck). A perfusion coefficient measured as: ratio of perfusion at neck over baseline perfusion was used for statistical analysis.

**Results:** Sixteen patients were considered for this study. Hand-port and measured conduit technique were used in 8 (cohort A), but not used in the other 8 (cohort B). For the whole cohort at MIE, a significant drop in fundus perfusion is noted once stomach is mobilised and exteriorised (Laparoscopy 539.7±161.6 v outside 207.5±73.7, p=0.0001; Wilcoxon matched-pairs test). Once the conduit is fashioned perfusion drops further (180.7±63.4), but improves at neck level (193.9±66.6). This trend holds true for both cohorts. The mean perfusion coefficient at the neck was 38.0% (range 18.1 to 67.4), i.e. average 62% drop in stomach perfusion. For cohort A, the perfusion coefficient was 45.0±12.6 v 31.1±12.5 for cohort B (p=0.028 – Mann Whitney U Test). There were two cases of simple anastomotic leak (managed conservatively) in this series, one in each cohort, and perfusion coefficient were 41.0 and 41.1 for the two cases respectively.

**Conclusions:** Perfusion of the stomach suffers a significant fall once it is fashioned into a conduit. Technical modifications can optimise conduit perfusion. However, a low perfusion coefficient does not always lead to failure of the conduit and optimisation techniques may not prevent simple anastomotic leaks.
Residents/Fellows Scientific Abstracts

**S119**

**NEW DOG, NEW TRICKS: TRENDS IN LAPAROSCOPIC SIMULATOR PERFORMANCE FOR INCOMING SURGERY RESIDENTS**

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**Introduction:** Exposure to laparoscopic surgery during medical school has increased over recent years. The Fundamentals of Laparoscopic Surgery (FLS) simulator allows for objective assessment of laparoscopic skill. The goal of this study was to determine whether the fundamental laparoscopic skills of incoming surgery residents have improved.

**Methods and procedures:** The initial FLS performance of first-year surgical residents between 2003 and 2008 was identified from a prospective database. Linear regression was used to determine the effect of incoming year on performance of the five FLS tasks (peg transfer, pattern cut, endoloop placement, suture with extracorporeal knot (EC), suture with intracorporeal knot (IC)) and total score. Data are presented as mean±SD. Statistical significance is defined as p<0.05.

**Results:** There were 65 first-year residents identified from the database. Scores for each task and total score are presented in the Table. Total FLS score improved over time (r=0.39, p=0.001). Scores for peg transfer did not significantly change, but scores for pattern cutting (r=0.37, p=0.002), endoloop placement (r=0.36, p=0.004), suture with EC (r=0.32, p=0.02) and suture with IC (r=0.26, p=0.03) all significantly improved over the five years.

**Conclusion:** Baseline fundamental laparoscopic skills for incoming surgery residents appear to have improved over time. This may be due to increased clinical laparoscopic exposure and availability of laparoscopic simulation in medical school.

**Table:**

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**S120**

**GRADUATED OPERATIVE TRAINING OF FELLOWS CAN BE SAFELY ACCOMPLISHED IN A MINIMALLY INVASIVE SURGICAL FELLOWSHIP**

Paul N Montero, MD, Neal Agee, MD, Kent Kercher, MD, William Hope, MD, Amy E Lincourt, PhD, Dimitrios Stefanidis, MD PhD, B Todd Heniford, MD Carolinas Laparoscopic and Advanced Surgery Program, Carolinas Medical Center

**Introduction:** Poorer patient outcomes at the beginning of the academic year have been reported as a result of trainee inexperience (“July Phenomenon”). Our aim was to investigate if this phenomenon exists during the transition of general surgery residents to a minimally invasive surgery (MIS) fellowship with an apprenticeship model.

**Methods:** Outcomes related to advanced laparoscopic procedures including adrenalectomy, colectomy, paraesophageal herniorrhaphy (PEH), Heller myotomy, nephrectomy, gastric bypass, and gastric band cases performed by supervised fellows from 1999-2009 were analyzed. Patient demographics, OR time, EBL, length of stay, lymph nodes resected, and complications were recorded. Cases performed during the first 3 months of fellowship were compared to those during the last 3 months.

**Results:** 506 MIS cases were performed in the first 3 months and 458 in the last 3 months of fellowship training. There were no differences in patient age, BMI, ASA, or case specific OR times, EBL, transfusions, length of stay, lymph nodes resected or complications. For gastric bypass performed in the last 3 months of training, there was a decreased EBL and OR time despite a higher ASA. For gastric bands, the later cases had a shorter OR time but longer length of stay despite a lower age (see Table).

**Conclusions:** A “July Phenomenon” could not be demonstrated for MIS fellowship training. Complex laparoscopic surgeries can be taught and performed early during fellowship training using an apprenticeship model without compromise to the quality and safety of the operation. Early versus late case demographics and outcomes in an MIS program (bold denotes significance).
Routine Pelvic Drainage Reduces Pelvic Abscess Formation After Laparoscopic Appendectomy for Gangrenous or Perforated Appendicitis

Andrea Pakula, MD MPH, Amber Jones, MSIV, Ray Chung, MD FACS Kern Medical Center

Background: Laparoscopic appendectomy has become the treatment of choice for acute appendicitis with equal or better outcomes than traditional open appendectomy. Laparoscopic appendectomy in patients with gangrenous or perforated appendicitis carries an increased rate of pelvic abscess formation, requiring reoperation or percutaneous (IR) drainage when compared to open appendectomy. We hypothesized that routine placement of pelvic Jackson-Pratt drains in gangrenous or perforated appendicitis, and limited intra-abdominal irrigation, decreases pelvic abscess formation after laparoscopic appendectomy in these patients.

Methods: Following IRB approval, charts of 283 patients undergoing laparoscopic appendectomy between 01/07 and 02/10 were reviewed. Only patients with findings of a perforated or gangrenous appendix were included. Patients were separated into two groups, Group 1: JP drain(s) placed with limited localized irrigation; Group 2: no JP drain, irrigated ad lib by the operating surgeons. Data collected included intra-abdominal or pelvic abscess postoperatively, IR drainage of the abscess, hospital length of stay, and the use of antibiotics. Clinic follow-up notes were reviewed to evaluate length of drainage and effectiveness of treatment.

Results: A total of 121 patients underwent laparoscopic appendectomy with findings of a perforated or gangrenous appendix from January 2007 to February 2010. 29 patients had placement of JP drains (Group 1) and 92 patients did not have a Jackson Pratt drain placed (Group 2). 18/92 (20%) of the Group 2 patients developed pelvic abscesses requiring IR drainage. 0/29 (0%) of Group 1 patients developed pelvic abscess. However, one patient in Group 1 developed a subphrenic abscess requiring IR drainage. Since the JP drain was not intended to prevent subphrenic abscesses, this patient was not included in our analysis. The Fisher’s Exact Test was used for our statistical analysis and we found the two-tailed probability to be 0.01. This is statistically significant when a p-value of <0.05 was used.

Conclusions: Use of Jackson Pratt drainage in patients with perforated or gangrenous appendicitis, who undergo laparoscopic appendectomy have a decreased rate of pelvic abscess/infection. Limited and localized intra-abdominal irrigation may limit dissemination of contamination and further decrease pelvic abscess formation. The need for treatment with IR drainage is decreased. The hospital length of stay is also decreased in the patients who have JP drains placed at time of operation. We therefore recommend the routine use of JP drainage of the pelvis after laparoscopic appendectomy for gangrenous or perforated appendicitis.
V001
LAPAROSCOPIC NISSEN FUNDOPICATION FOR SYMPTOMATIC RECURRENCE AFTER ENDOSCOPIC FUNDOPICATION WITH THE ESOPHYXR DEVICE

**Background:** Endoscopic fundoplication using the EsophyxR is becoming increasingly used in the surgical treatment of selected patients with gastroesophageal reflux disease (GERD). Although the overall success rate is good, there have been reported short- and long-term recurrences of GERD-related symptoms. This video demonstrated the anatomic consequences of endoscopic fundoplication and its effect on a subsequent laparoscopic Nissen Fundoplication.

**Case Report:** The patient is a 60 year old female who has typical symptoms of GERD, with a small hiatal hernia as demonstrated by upper endoscopy, esophageal manometry demonstrated a hypotensive lower esophageal sphincter pressure and 24 hour esophageal pH monitoring demonstrating pathologic reflux. She underwent the Total Incisionless Fundoplication (TIF)-II technique using the Mark-II Esophyx device. Her postoperative esophagram showed an excellent partial fundoplication. She had good symptom relief for six months, and then developed recurrent symptoms. Repeat endoscopy appeared to demonstrate a good valve, but 24 hour pH monitoring demonstrated pathologic reflux.

**Main Operative Finding:** The hiatal hernia was present, with no reduction whatsoever. The H-fasteners were extruded from the esophagus, but still attached to the angle of His. Scarring was limited to the region of apposition of the angle of His to the esophagus. Overall, operative difficulty was not greatly increased.

**Conclusion:** Performance of a laparoscopic Nissen fundoplication is not greatly hindered by a prior endoscopic fundoplication with the Esophyx device. At least in this case, the hiatal hernia was not reduced. Scarring appears to be limited to where the H-fasteners pass from the esophagus to the stomach.

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V002
SINGLE INCISION LAPAROSCOPIC RECTOSIGMOID RESECTION AND RECTOPEXY FOR RECTAL PROLAPSE

**Noelle L Bertelson, MD, Alexandre Bouchard, MD, Tonia Young-Fadok, MD MS Mayo Clinic Arizona**

**Introduction:** Laparoscopic rectosigmoid resection with rectopyx has become our procedure of choice for rectal prolapse as it minimizes the morbidity of an abdominal procedure for a benign problem. The conventional laparoscopic approach requires an extraction site as well as 3 additional ports in our practice. A single incision procedure further minimizes abdominal wall trauma. We describe here our method of performing single incision laparoscopic rectosigmoid resection and rectopyx.

**Method:** A 3 cm periumbilical incision is made, and a multiport device is placed. A pneumoperitoneum is established, and the patient is placed in Trendelenburg with the left side up. The lateral attachments of the sigmoid colon are dissected using cautery scissors. This dissection is continued along the left pararectal peritoneum, and the presacral space is entered. The dissection is continued sharply caudally on the left lateral and posterior aspects of the rectum. The right pararectal peritoneum is scored, the presacral space entered, and the dissection joined with that from the left side. The dissection proceeds distally on the right and finally anteriorly, with dissection completed at the level of the pelvic floor. The abdomen is then desufflated, and the rectosigmoid specimen is exteriorized via the multiport incision site. Resection and hand-sewn anastomosis are performed. The specimen is returned to the abdomen, and rectopyx is performed using a spiral tack to fix the right pararectal tissues to the sacrum.

**Results:** This patient had a length of stay of 3 days, and the OR time was 135 minutes. Single incision size was 3.1 cm. Maximum pain score at the time of discharge was 4.

**Conclusion:** Single incision laparoscopic rectosigmoid resection and rectopyx is a procedure that can be safely performed in selected patients while eliminating additional ports and minimizing postoperative complications and pain.

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V003
LAPAROSCOPIC ESOPHAGOSTOMY WITH COLONIC INTERPOSITION

**C Palanivelu, MCh FACS FRCS, P Senthilnathan, MS DNB MRCS, P S Rajan, MS FACS, P Praveen Raj, MS, V Vaithiswaran, MS, R Parthasarathi, MS GEM Hospital**

**Incidence of adenocarcinoma of esophago-gastric junction is increasing rapidly in India. Some of the lesions involve significant lengths of the lower esophagus and the stomach. Laparoscopic Esophageal gastrectomy with colonic interposition is a good surgical option in such patients.**

**Procedure:** This video will show the steps of Laparoscopic esophageal gastrectomy with colonic interposition. The video includes the following steps:

- Laparoscopic mobilization of stomach and clearance of hepatic, left gastric and celiac nodes
- Laparoscopic mobilisation of the colon
- Thoracoscopic mobilisation of the esophagus with removal of mediastinal nodes
- Mini laparotomy to extract the specimen and prepare colonic conduit and completion of colo-gastric anastomosis
- Laparoscopic creation of the substernal tunnel and delivery of the colonic conduit to the neck.
- Sleeve protective sheath is used for colonic pull up.
- Completion of the esophago gastric anastomosis.

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V004
LAPAROSCOPIC REVISION OF ESOPHAGOMYOTOMY

**Michael Edye, MD FACS, Ramin Roohipour, MD, Leon Kushnir, MD, Barry Jaffin, MD Mount Sinai School of Medicine, New York, N.Y.**

**Esophagomyotomy remains the most effective long-term solution for achalasia and results in symptomatic relief in more than 90% of patients. Failure rates have been quoted as high as 17% necessitating further endoscopic interventions such as pneumatic dilatation, re-operation, and even esophagectomy in severe cases. Revisional surgery after a failed Heller myotomy is technically demanding. This video demonstrates the preoperative work-up, intra-operative decision-making and complex operative techniques necessary to identify and correct this challenging problem. The patient was a 53 year old man who underwent an esophagomyotomy with a Dor fundoplication several months after the diagnosis of achalasia in 2008. Despite apparently adequate surgical technique as evidenced by a review of the operative report, the patient experienced rapid recurrence of symptoms including chest pain, dysphagia, and frequent regurgitation. Preoperative manometry showed an aperistaltic esophagus and a barium esophagogram showed a classic ‘bird beak’ EG junction with delayed barium passage. Upper endoscopy confirmed esophageal dilatation with an anterior out-pouching present above the high pressure zone. During laparoscopic hiatal dissection air insufflation from intraoperative endoscopy revealed an area of ballooning esophageal submucosa below the diaphragm proximal to the EG junction. A narrowing with bands of raised scar tissue and muscle fibers was noted just distal to the ballooning mucosa, suggesting the site of an incomplete myotomy. To minimize bleeding, this area was divided with careful application of a reversed a Harmonic scalpel, and extended 2 centimeters onto...**
V005

LAPAROSCOPIC RESECTION OF AN ESOPHAGEAL Duplication CYST Ross F Goldberg, MD, Michael Parker, MD, John A Stauffer, MD, Horacio J Asbun, MD FACS, C. Daniel Smith, MD FACS, Steven P Bowers, MD FACS Mayo Clinic - Florida

Esophageal duplication cysts are rare congenital lesions. There have been a small number of reported cases of these lesions being treated in the adult population using contemporary approaches. The case presented is of a mediastinal esophageal duplication cyst located at the GE junction with a broad attachment over the anterior surface of the esophagus. The following video presentation is of the laparoscopic resection of this esophageal duplication cyst while sparing the anterior vagus nerve. This was followed by a repair of the resected area with an extended myotomy on to the gastric sling fibers and Toupet fundoplication.

V006

SINGLE INCISION TRANSUMBILICAL LAPARO-ENDOSCOPIC GASTRIC BENIGN TUMOR RESECTION Giovanni Dapri, MD, Ruffin Ntounda, MD, Lorenzo Casali, MD, Pietro Carnevali, MD, Jacques Himpons, MD, Guy-Bernard Cadière, MD PhD European School of Laparoscopic Surgery, Saint-Pierre University Hospital, Brussels, Belgium

Introduction: The authors report the resection of a gastric benign tumor through single incision laparoscopy, guided by peroperative gastroscopy.

Video: A 25 years old man consulted after diagnosis of a 40 x 20 cm endoluminal lesion of the gastric cardia. Preoperative work-up showed a stromal tumor with invasion of the muscular layer. The umbilical scar was incised and, after placement of a purse-string suture, an 11-mm non disposable trocar was inserted for a 10-mm 30° angled scope. Curved and reusable instruments (Karl Storz-Endoskope, Tuttinglen, Germany), and straight ultrasonic shears (Ethicon Endosurgery, Cincinnati, OH) were inserted transumbilically. Peroperative gastroscopy located the lesion on the smaller gastric curvature, 1 cm from the gastroesophageal junction. A stitch was placed in the center of the lesion, and gastroscopic grasper helped in maintaining the limits of the resection. Gastroscopy was closed using two converting absorbable running sutures. Because of the curves of the instruments there was no conflict between the instruments’ tips inside the abdomen, or between the surgeon’s hands outside the abdomen. Leak-test with the gastroscope checked the integrity of the suture. The specimen was retrieved transumbilically in a plastic bag.

Results: Operative time was 150 minutes, and the umbilical incision was less than 15 mm. The patient was discharged after 5 days, and he is doing well 3 months postoperatively.

V007

LAPAROSCOPIC ROUX-EN-Y DUODENOJEJUNAL BYPASS FOR SUPERIOR MESENTERIC ARTERY SYNDROME G Hina, A Abdemur, M Gianos, S Szomstein, R J Rosenthal Cleveland Clinic Florida

Introduction: Superior mesenteric artery syndrome is a clearly defined and uncommon medical condition that can result in severe malnutrition. Surgical intervention is indicated in cases of failed long term medical management.

Case presentations and Methods: We report a series of three cases, a 17-year-old woman, a 23-year-old man and a 50-year-old woman man that were diagnosed with SMAS by upper GI series and/or CAT scan. Medical management failed for one to two-and-half years. They were successfully treated by laparoscopic Roux-en-Y duodenojejunal bypass. A 5-trocar laparoscopic approach was used for the surgery, and a 75 cm long Roux limb was used in all cases. Detailed steps are presented in the attached video with narration. There is no blind loop left with this procedure as compared to gastrojejunalostomy and duodenojunostomy. Branches of the superior mesenteric artery that supply the transverse colon may pass through the peri toneum that covered the third portion of the duodenum. These branches should not be severed so that blood supply to the colon during the preparation of the duodenum proximal to the superior mesenteric artery for anastomosis by dissecting the peritoneum is not compromised.

Results: The postoperative period was unremarkable and symptoms of obstruction subsided in all three cases. All patients were discharged home tolerating a soft diet.

Conclusions: Laparoscopic duodenojejunal bypass appears to be a feasible and safe treatment option for superior mesenteric artery syndrome.

V008

LAPAROSCOPIC FUNDOPPLICATION AFTER ENDOLUMENAL THERAPIES FOR GERD Michael Edye, MD, John Harvey, MD, Anthony Starpoli, MD, Barry Salty, MD Mount Sinai School of Medicine

It is inevitable that a certain number of endolumenal GERD therapies will fail and some of those will come to surgical revision. As these modalities become more aggressive, the toll of unplanned effects will be greater. In this video we demonstrate typical operative findings during fundoplication following the Esophyx procedure. The first case is a 64 year old woman who had undergone an Esophyx procedure two years prior. She had developed pleural irritation in the post-operative period. For a year she had good control of regurgitation. After developing severe discomfort with belching she noticed recurrence of her volume reflux. A barium esophagram showed post-plication changes in the esophagus consisting of contrast filled depressions in both esophagus and fundus presumably corresponding to the position of fasteners.

At laparoscopic exploration entry in to the lesser sac through the gastrohepatic omentum revealed little scarring. Fasteners were not apparent on the right side but after elevation of the esophagus from the confluence of the crural pillars, the first fastener was encountered between stomach and crus. After repairing the crura with a single figure of eight stitch a 2 cm long 360° fundoplication was constructed. We tested the
tightness of the wrap using a 7 Fr Fogarty balloon that when inflated is 15 mm in diameter (45 Fr), avoiding the use of a luminal bougie. A 4 cm gastropexy with 3-0 polypropylene completed the procedure. From experience exploring patients years after laparoscopic hiatal procedures in which gastropexy was performed, we know this to be a durable construct and believe it prevents the fundus from starting the progressive migration upward through the hiatus that defines anatomic failure.

In the second case (that we have previously reported), a 50 year old male who had undergone NDO plication and Esophyx in the past was reoperated for recurrent reflux. Again marked fixation of the esophagus and stomach with the left crus sandwiched between was found. The vagal trunk was also found transected by a fastener. His post-operative course was complicated by a perigastric abscess adjacent to the wrap, and very symptomatic delayed gastric emptying, that persisted more than 18 months later.

We conclude that:
1. Endoluminal therapies for GERD have evolved into meaningful surgical procedures with potential for real surgical complications.
   - Blind insertion of transmural fasteners can lead to inadvertent transition of unrelated adjacent structures such as nerves and blood vessels.
   - Incorporation of the crus with the fastener should be considered an expected result
   - There is a local inflammatory, if not infective event shown by the occurrence of post-procedure pleural irritation.

2. Since fasteners communicate with the gut lumen, re-operative procedures should be considered contomitantly. Avoidance of hematoma in the surgical site is of great importance and the use of perioperative prophylactic antimicrobials should be considered.

**V009**

**TRANSANAL, VIDEO-ASSISTED SURGERY (TAVAS) UTILIZING A SILS™ PORT FOR THE TREATMENT OF COMPLICATIONS FOLLOWING SIGMOID COLON RESECTION AND EEA ANASTOMOSIS** Patrick R Reardon, MD, Brian J Dunkin, MD, Eric M Haas, MD, Joanne Chung, MD, Vadim Sherman, MD, Vega Koss, MD, Luis Benavente-Chenals, MD The Methodist Hospital Department of Surgery Methodist Institute for Technology, Innovation, and Education Houston, Texas 77030

**Background:** Sigmoid diverticulosis with recurring sigmoid diverticulitis is a common disease entity likely to be treated by general surgeons. The standard surgical therapy involves resection of the involved sigmoid colon with anastomosis of the remaining colon to the rectum. Anastomotic bleeding and anastomotic leak are two of the most common complications of an EEA anastomosis. We present here a novel technique for the treatment of these complications.

**Methods:** Two patients, both with recurrent sigmoid diverticulitis, were treated. The first patient was a 66 year old woman who underwent laparoscopic sigmoid colectomy, with CO2 leak detected at the anastomosis. The second patient was a 63 year old man who underwent NDO plication and Esophyx in the past was reoperated for recurrent reflux. In the immediate postoperative period, she had bright red blood per rectum, and lowered her Hgb to 6.0. The second patient was a 63 year old, morbidly obese woman with a BMI of 38 kg/m². During intraoperative proctoscopy she had a stream of bubbles from the posterior anastomosis stoped, and could not be reproduced. One of the EEA doughnuts was thin.

**Results:** Both patients were treated by a novel technique. The bleeding anastomosis and incomplete anastomosis were treated by suturing, via transanal video-assisted surgery (TAVAS) utilizing a SILS™ port, to oversew the bleeding artery and incomplete staple line.

**Conclusions:** Advantages of TAVAS include: 1. Visualization via TAVAS is superior to “conventional” methods of visualization for treating these complications. 2. Insufflation of the colon with CO2 leads to superior distention of the colon with no ill effects noted in our patients. This improves visualization and, in our first case, caused a significant reduction in the rate of bleeding. 3. Laparoscopic skill sets can be utilized by those who are already trained in these techniques. Disadvantages of TAVAS include: 1. The high cost of the SILS™ device. 2. As with all SILS procedures, visualization and suturing are more difficult than with standard laparoscopic technique. For surgeons who have good laparoscopic skills, the use of TAVAS is recommended for the treatment of acute complications of an EEA anastomosis, such as bleeding or leak discovered at the time of surgery.

**V010**

**TRANSANAL SPECIMEN RETRIEVAL USING THE TEM SYSTEM IN MINIMALLY INVASIVE COLON RESECTION** Konstantinos I Makris, MD, Erwin Rieder, MD, Andrew Kastenmeier, MD, Lee L Swanstrom, MD Legacy Health

The use of the TEM (Transanal Endoscopic Microsurgery) rectoscope facilitates the transanal removal of the specimen in minimally invasive colon resection. It allows gentle dilation of the anus, provides stability during the extraction and protects the edges of the rectum, therefore decreasing the risk of rectal or anal canal injuries. Moreover, it allows maintenance of the pneumoperitoneum during the pelvic manipulations. This is a safe and feasible technique, which renders laparoscopic colectomy even less invasive.

**V011**

**PURE TRANSVAGINAL LAPAROSCOPIC APPENDECTOMY** Kurt E Roberts, MD, Dan-Arin Silasi, MD, Robert L Bell, MD, Andrew J Dify, MD Yale School of Medicine

This video presentation is from a 37 yo female who underwent a pure transvaginal laparoscopic appendectomy. This is one out of 14 successfully performed pure transvaginal appendectomies at Yale-New Haven Hospital. Appropriate Institutional Review Board was obtained preoperatively.

The patient was positioned in steep Trendelenberg position at which time a weighted speculum was introduced into the vagina allowing exposure of the posterior vaginal fornix. The cervix was grasped with a single-toothed tenaculum on the posterior cervical lip and the posterior vaginal fornix was brought into the operative field. Access to the peritoneum was achieved by electrocautery and sharp dissection. After access into the peritoneum was established, a SILS port was introduced and pneumoperitoneum up to 15mmHg was achieved. Two 5mm trocars and one 12mm trocar were used. A 5mm 30° angled endoscope, a flexible reteculating endograsper and straight standard instruments were used. The appendix identified dissected and a stapler was used to divide the mesoappendix and the appendix from its base. Following confirmation of good hemostasis and no spillage of bowel contents, the appendix was removed within a retrieval bag from the abdomen and the colpotomy closed with a running absorbable suture. The patient tolerated the 27 min procedure well and was discharged home in good condition on POD#1.

We have successfully demonstrated the feasibility and safety of pure transvaginal laparoscopic appendectomy without any abdominal incisions whatsoever in 14 female patients. This video presents one of these patients. It is safe and well tolerated with only minimal need for postoperative pain control. It allows for rapid return to daily activities while providing a most favorable cosmetic outcome for women. More extensive studies evaluating the benefits and also identifying possible complications are necessary to confirm our promising early results.
ERCP IN A PATIENT WITH PREVIOUS ESOPHAGECTOMY AND BILLROTH II GASTROJEJUNOSTOMY

Melissa S Phillips, MD, Jeffrey M Marks, MD, Amitabh Chak, MD University Hospitals, Case Medical Center, Cleveland, OH, USA

Introduction: Endoscopic retrograde cholangiopancreatography (ERCP) can be quite challenging in patients without native anatomy. Being able to apply this “standard of care” treatment to a surgically altered patient group offers advantages of decreased morbidity and quicker recovery as compared to surgical interventions such as a common bile duct exploration or biliary bypass.

Patient: This patient is a 79 year old female status post esophagectomy with cervical esophagostomy for iatrogenic perforation. Additionally, she underwent partial gastrectomy with Billroth II reconstruction for complications of peptic ulcer disease, and feeding tube jejunostomy, which is her primary source for nutrition. She then presented with cholangitis from an impacted common duct stone. She was treated emergently with a transhepatic internalized drainage catheter. After a discussion of continued lifelong internal/external drainage, surgical intervention, or endoscopic therapy, she opted for attempted endoscopic treatment.

Treatment: A small caliber, forward viewing endoscope was introduced in the proximal direction through the jejunostomy site. The gastrojejunostomy was identified and the afferent limb was followed to the major papilla. A wire was passed through the transhepatic catheter, grasped by the endoscope and removed in rendezvous technique through the jejunostomy. A side viewing duodenoscope was then introduced over the wire with eventual cannulation of the common bile duct. Stones were removed using a combination of endoscopic sphincterotomy, sphincter dilation, and balloon extraction. Several days post-procedure, a CT scan showed a perihepatic abscess with jejunal pneumatisis, managed with percutaneous drainage, bowel rest, and antibiotics. The patient subsequently recovered with relief of her biliary obstruction, and without any additional sequelae.

Conclusions: Surgically altered anatomy may present challenges in performing ERCP. This technique of a retrograde small bowel approach through a jejunalostomy tube site, assisted by transhepatic rendezvous, offers a novel approach in this patient with complex anatomy, avoiding a major surgical intervention.

DRAINOSCOPY

Sam Atallah, MD, Teresa DeBeche-Adams, MD, Matthew Albert, MD, Sergio Larach, MD Florida Hospital

To determine the feasibility of using a standard post-operative drain as an access point for the new technique of drainoscopy.

Methods and Procedures: Drainoscopy is demonstrated in the operating room on a patient who has undergone a laparoscopic, hand-assisted APR. A 19-French Blake drain is secured to the skin using a 2-0 silk suture and has been positioned in the pelvis. The end of the Blake drain has been truncated and the fluted end removed to allow the drainoscope to pass through the drain. A 2.9 mm rigid hystroscope is used for drianoscopy and is easily introduced through the modified Blake drain to allow for visualization of the abdominal cavity. It is demonstrated that CO2 insufflation can also be accomplished through the drain, without an additional port.

Conclusions: Drainoscopy is a feasible, new technique which allows for direct, bedside visualization of the abdominal cavity when a 'second look' is desired. This may have particular value in assessing for bowel ischemia, internal small bowel herniation, early post-op obstruction, and identification of early anastomotic leaks. Drainoscopy visualization of the abdominal cavity after surgery may be more useful than CT-body imaging, which is difficult to interpret in the early post-operative state.

LAPAROSCOPIC WHIPPLE PROCEDURE WITH A 2-LAYERED PANCREATOJEJUNOSTOMY

Andrew A Gumbs, MD, Brice Gayet, MD PhD, John P Hoffman, MD FOX CHASE CANCER CENTER

Introduction: Since the first report of laparoscopic pancreatic resections in the early 1990’s, laparoscopic resection of tumors in the pancreas have become increasingly more common in the surgical treatment of both benign and malignant tumors. The minimally invasive approach to lesions in the head of the pancreas, however, is still only being performed in highly specialized centers. This is principally because of concerns for safely dissecting tumors off of the superior mesenteric/portal vein (SMV/PV) and SMA, the perceived difficulty in controlling major hemorrhage via the laparoscopic approach and concerns regarding the efficacy of a laparoscopically created pancreatic anastomosis.

Method: We employ the laparoscopic posteror approach first described by Prof. Brice Gayet. The main differences of this approach include the early performance of an extended Kocher maneuver and transection of the uncinate process with the ultrasonic shears. As opposed to the previously reported video of this technique, this video highlights the laparoscopic formation of a 2-layered end-to-side pancreatojejunostomy. An internal stent consisting of a 5 Fr. pediatric feeding tube is used to prevent inadvertent closure of the pancreatic duct.

Results: To date 5 laparoscopic Whipple procedures using the posterior approach have been performed in the United States. Two patients had pancreatic adenocarcinoma, one of which was given neoadjuvant chemoradiation therapy, one patient had a malignant neuroendocrine tumor, one patient had a malignant tumor arising from an intraductal papillary mucinous neoplasm and a final patient had type I choledochochleole involving her entire common bile duct. The average estimated blood loss was 450cc (range 200-800cc). The mean operative time was 485 minutes (range = 370-660 minutes). The length of stay averaged 11 days (range=7-14 days). One patient developed a bile leak, which responded to transhepatic biliary drainage and one patient developed a subhepatic abscess after removal of a gastrostomy tube that required percutaneous drainage on post-operative day #22. Average lymph node retrieval is 18 (range =16-29). All pancreatic margins were negative. However, one patient was found to have metastatic pancreatic cancer to the liver on final pathology in spite of a negative liver biopsy on frozen section analysis. This patient was found to have a hepatic recurrence at 12 months and is currently alive with 15 months of follow-up. All patients are currently alive with a mean follow-up of 11 months (range= 6-20 months), and the other 4 patients have no evidence of disease.

Conclusion: Minimally invasive techniques for laparoscopic Whipple procedures are feasible and safe. The 2-layered end-to-side laparoscopic pancreatojejunostomy has a low rate of pancreatic fistula formation and may be ideal for laparoscopically created pancreatic anastomoses. Mastery of the anatomy and laparoscopic suturing is paramount before attempting this approach with minimally invasive techniques. It should currently only be performed by surgeons with expertise in both open and laparoscopic pancreatic surgery.
V018
LAPAROSCOPIC RESECTION OF GE JUNCTION DUE TO STRICTURE POST HIATAL HERNIA REPAIR WITH CIRCUMFERENTIAL BIOLOGIC MESH. A Bernshteyn, I Fendrich, S Szomstein, R J Rosenthal Cleveland Clinic Florida
Background: Esophageal strictures after repair of hiatal hernias with mesh are a rare but devastating complication. We present the case of a patient that developed a mesh erosion and distal esophageal stricture requiring laparoscopic resection of the GE junction.
Methods: A 70 year old female presented after repair of hiatal hernia with Nissen Fundoplication complained of progressive dysphagia. Multiple EGDs demonstrated a benign stricture which failed dilatation and persisted despite placement of an esophageal stent. The patient underwent a laparoscopic re-exploration. Intraoperatively, multiple adhesions where taken down and a circumferentially placed mesh was excised. During the excision of the eroded mesh, the distal esophagus was entered. The GE junction was then excised and an esophagogastrectomy in a latero lateral fashion using a linear stapler was performed. Pyloroplasty for drainage and tube jejunostomy for early feeding was carried out. Drains where placed into the left and right subhepatic positions to allow for wide drainage.
Result: The postoperative period was remarkable for a slow return of GI function. Upper GI swallow was performed on day 8 and the patient was started on a clear liquid diet while continuing with tube feeds. Patient was discharged on post operative day 14 on liquid diet and with nightly jejunostomy feeding. One month post discharge the patient had complete resolution of symptoms and was tolerating a regular diet.
Conclusion: Laparoscopic treatment for lower esophageal stricture post circumferential biologic mesh with erosion appears to be a safe and feasible approach.

V019
SIMULATION EDUCATION: FOR TAPP AND TEP LAPAROSCOPIC INGUINAL Hernia repair Y Kurashima, MD PhD, P A Kaneva, MSc, L S Feldman, MD, G M Fried, MD, C Vassiliou, MD McPhedrin Steelberg-Bernstein Centre for Minimally Invasive Surgery McGill University
Laparoscopic inguinal hernia repair (LIHR) has been shown to be advantageous for bilateral or recurrent hernias, however, it has not gained widespread acceptance. One of the reasons for this is the steeper learning curve compared to the open technique. Simulation may have a role to play in addressing this training challenge. We have previously described the McGill Laparoscopic Inguinal Hernia Simulator (MLIHS), which can be used to perform both transabdominal preperitoneal (TAPP) and totally extraperitoneal (TEP) repairs. In addition, we developed the Global Operative Assessment of Laparoscopic Skills -Groin
Hernia (GOALS-GH), which is a reliable and valid measure of skill, in the operating room and the simulator. We are designing a simulation-based curriculum for LIHR using these tools. As part of this program, we have created an instructional video, which demonstrates each step of the procedures. This video helps learners to relate the simulated anatomy and techniques to real clinical procedures. Furthermore, GOALS-GH items are embedded into the video to guide learners as they view it.

**V020**

**SURGERY FOR TYPE II DIABETES MELLITUS: LAPAROSCOPIC ILEAL INTERPOSITION (TYPE I)** C Palanivelu, MCH FACS FRCS, P Praveen Raj, MS, P Senthilnathan, MS DNB, C Chandramaliteeswaran, MS, R Parthasarathi, MS GEM Hospital

**Background:** Preliminary reports show type I ileal interposition is effective in control of type II Diabetes Mellitus in patients who are overweight and in patients of normal BMI. This video shows, type I ileal interposition with sleeve gastrectomy in a patient with BMI of 30. Procedure: This video shows the following steps: -Division of distal ileal segment of 170 cm length, 30 cm proximal to ileocecal junction. -Division of the jejunum at 50 cm distal to the duodenojejunal junction. -Interposition of this segment between the cut ends by end to end anastomosis. -Sleeve gastrectomy

**V021**

**AN INNOVATIVE TECHNIQUE FOR CIRCULAR STAPLER INSERTION AND WOUND PROTECTION DURING GASTROJEJUNOSTOMY** Alian Garay, MD, Danny V Martinec, BS, Valerie J Halpin, MD Legacy Good Samaritan Hospital, Portland, OR

Our innovative method for inserting the circular stapler to create the gastrojejunal (GJ) anastomosis in laparoscopic roux-en-Y gastric bypass saves time and prevents wound infections. This technique requires the use of a specially designed tapered prosthetic at the tip of the circular stapler and a wound protector. The prosthetic is placed on the stapling end of the circular stapler over the extruding pin and held in place with a clamp and a #1 nylon suture placed through a hole near its tip. The 15 mm port is removed. The fascial defect is stretched with a pin. The wound protector is placed on the abdominal wall at this site and the lubricated stapler apparatus is inserted through the wound protector. The extruding pin is withdrawn allowing the prosthetic to fall into the abdominal cavity with control of it held by the clamp and #1 nylon which are still extracorporeal. The stapler is intubated into the small bowel, the anastomosis is created in the usual fashion, and the stapler is removed through the wound protector. The clamp holding the #1 nylon and the prosthetic is then pulled to remove the prosthetic from the abdominal cavity through the wound protector. The enterotomy is closed by stapling off the stump of jejunum near the GJ anastomosis. A pin is inserted under direct vision through the wound protector and the bowel remnant is grasped and removed from the abdominal cavity. Insufflation is maintained during this process by twisting the wound protector, which closes the aperture of the abdominal wall defect. A finger is inserted and the wound protector is inverted and removed. The surgeon’s gloves are changed and the 15 mm port is replaced. At the end of the case, a single transabdominal fascial stitch closes the defect.

**V022**

**LAPAROSCOPIC SLEEVE GASTRECTOMY AFTER FAILED VERTICAL BANDED GASTROPLASTY** Michael J Lee, MD, Daniel J Scott, MD FACS UT Southwestern Medical Center

**INTRODUCTION:** This video describes a laparoscopic approach to sleeve gastrectomy as a revisional procedure for failed vertical banded gastroplasty.

**METHOD:** The patient was a 52 year old woman with a prior vertical banded gastroplasty and a BMI of 57. Her history is complicated by an incisional hernia for which she underwent a mesh repair. She presents four years later with chronic complaints of nausea, heartburn, and dysphagia. Her workup revealed that she had a moderate sized hiatal hernia. She underwent laparoscopic exploration for a possible hiatal hernia repair. The patient was placed in a split let position in spreader bars. A 12mm trocar was placed in the left subcostal area. A 15mm trocar was placed 15cm inferior to the xiphoid process. A 5mm trocar was placed in the right and left subcostal locations, and also in the left lower quadrant. A Nathanson liver retractor was placed through a midepigastric 5mm incision. Her perigastric fat was retracted using sutures attached to the abdominal wall. Her prior vertical staple line, Marlex gastric band, and super obesity compromised a potential fundoplication. In addition, her dense lower abdominal adhesions did not make a roux-en-y gastric bypass feasible. Sleeve gastrectomy was then performed using linear cutting staplers guided by an endoscope.

**RESULTS:** Postoperatively after the patient’s edema subsided, her symptoms resolved and her BMI decreased from 57 to 50.

**Conclusions:** Laparoscopic sleeve gastrectomy is both a feasible and effective revisional procedure for prior vertical banded gastroplasty.

**V023**

**LAPAROSCOPIC REVISION OF LONG-LIMB LOOP GASTRIC BYPASS** Eugenius J Harvey, MD, Kervin Arroyo, MD, Daniel M Herron, MD Mount Sinai School of Medicine

In this video we present the laparoscopic revision of a distal loop gastric bypass to a standard short limb Roux-en-Y gastric bypass, for treatment of malnutrition and chronic abdominal pain. The patient is a 47-year-old man with a previous history of superobesity (166 kg, BMI 65) who had undergone laparoscopic loop gastric bypass, also referred to as “mini-gastric bypass” in 1999 at an outside institution. Despite initially losing weight he regained over 20 kg. Nine years after his original operation, he sought out his original surgeon to revise his anatomy to a distal loop gastric bypass to treat the weight regain.

One year later, he was admitted to our institution after an overdose of aspirin which he had been taking for chronic upper abdominal pain. Since his distal revision, he complained of continued weight loss, chronic diarrhea and recent bilateral lower extremity edema. He was found to have an albumin of 1.8. His nutritional status was optimized with TPN. After his albumin rose above 3, we laparoscopically revised the distal loop gastric bypass to a standard short limb Roux-en-Y gastric bypass. The video demonstrates many of the important technical aspects of this revision.

In conclusion, we review several important points regarding revisional bariatric surgery. Chronic pain after loop gastric bypass may be due to internal hernia, bile reflux gastritis, or marginal ulceration with or without gastro-gastric fistula. Malnutrition should be corrected prior to surgical intervention. Weight regain after conversion from a malabsorptive operation to a standard RYGB may be avoided by decreasing the size of the gastric pouch. Finally, any potentially devascularized tissue should be excised.

**V024**

**GASTRIC BYPASS IN A PATIENT WITH UNSUSPECTED MALROTATION OF THE COLON** Rahima Menshi, MD MSc, John Hagen, MD Humber River Regional Hospital, University of Toronto

Congenital rotational GI tract abnormalities result from non-
rotation or incomplete rotation around the superior mesenteric artery. The incidence is approximately 1 in 500 live births and up to 25% of patients will present in adulthood. If a patient with an unknown rotational GI tract abnormality presents for bypass surgery, there is an increased risk of incorrectly identifying the anatomy and constructing a “Roux-en-O” where an antiperistaltic biliary limb is inadvertently constructed. If this occurs, it leads to functional obstruction, biliary vomiting and eventually death. There are currently no published reports of a Roux-en-Y bypass performed in a patient with malrotation. This video summarizes a case of an otherwise healthy 21 year old female who presented for laparoscopic gastric bypass. At the beginning of the case, we attempted to identify the ligament of Treitz in the left upper quadrant, however we were surprised to find the terminal ileum and the appendix. This made us suspicious of malrotation and therefore, to avoid the complication of construction of a Roux-en-O, we ran the small bowel starting at the terminal ileum and then identified the ligament of Treitz in the right upper quadrant. Once we had clarified the anatomy, we completed the bypass procedure. In addition, we also demonstrate the technique of how Petersen’s space is closed in malrotation to avoid the risk of internal hernia.

The patient had an uncomplicated post-operative course and was discharged two days following the procedure. This case emphasizes the importance of correctly identifying the ligament of Treitz and highlights the risk of inadvertent construction of a Roux-en-O in a patient who has malrotation of the colon.

**V025**

**REVISION OF ROUX-EN-Y GASTRIC BYPASS FOR GASTROGASTRIC FISTULA, SUBTOTAL GASTRECTOMY, AND ROUX-EN-Y ESOPHAGOJEJUNOSTOMY**

**Kelvin Higa, MD FACS, Saber Ghiassi, MD MPH, Ruby Gatschet, MD, Keith Boone, MD FACS University of California, San Francisco, Fresno**

Patient is a 48 year-old woman with extensive past surgical history. She underwent adjustable gastric banding in Mexico in 2003, followed by attempted laparoscopic removal of the band in the United States, converted to open with proximal gastric bypass and repair of esophageal injury in 2005. One week later, she had a negative exploration for leak. Her surgical history also includes cesarean section, cholecystectomy, tubal ligation, open repair of incisional hernia with mesh and abdominoplasty. During the last year, she had developed severe gastroesophageal reflux, abdominal pain and solid food dysphagia. Work-up revealed a gastrogastric fistula. She was taken to the operating room for diagnostic laparoscopy and take down of the gastrogastric fistula. After Optiview entry, several ports were placed. Multiple adhesions were noted to the anterior abdominal wall and the intra-abdominal mesh, which appeared to be placed appropriately, with no recurrence. Very extensive adhesiolysis, especially around the esophageal hiatus, was performed. The diaphragmatic crura, gastric pouch and remnant, as well as the gastrogastric fistula, which was just below the GE junction, were identified. Upper endoscopy and passage of a 36 French esophageal tube demonstrate a patent gastrogastric fistula but unsuccessful at intubation of the Roux-en-Y bypass. The proximal gastric remnant was transected with endoscopic stapler and removed after the dissection and take down of the gastrogastric fistula. The distal gastric remnant staple line was overused. Repeated attempt at endoscopic intubation of the Roux-en-Y limb failed. The proximal Roux limb was divided with endoscopic stapler, and the gastric pouch opened towards the gastroesophageal junction. The proximal lumen of the gastric pouch was obliterated for unknown reason. This necessitated a complete resection of the gastric pouch. The Roux limb was mobilized and an end-to-end esophageojunostomy was created using interrupted 3-0 Vicryl sutures. Air leak test was negative. The transverse mesocolon was secured around the Roux limb with 2-0 silk sutures to close the potential hernia space. A gastrostomy tube was placed in the gastric remnant and a Jackson Pratt drain was left at the esophageal hiatus. An upper GI study on postoperative day one was negative for leak or obstruction. The patient was started on clear liquids on postoperative day 2 and discharged home on postoperative day 3. Patient’s symptoms had resolved and she was doing well on her postoperative clinic visit.

**V026**

**LAPAROSCOPIC TRANSGASTRIC REVERSAL OF VERTICAL BANDED GASTROPLASTY**

**Hubert D Kim, MD, Ramin Roohipour, MD, Kevin M Reavis, MD, Chirag Dholakia, MD, Ninh T Nguyen, MD University of California, Irvine Medical Center**

A late complication of vertical banded gastroplasty (VBG) is outlet obstruction. We present a case of reversal of VBG using laparoscopic transgastric technique with flexible endoscopic guidance.

**V027**

**LAPAROSCOPIC GASTRECTOMY FOR GASTRIC CANCER FOLLOWING OPEN ROUX-EN-Y GASTRIC BYPASS**

**Ramin Roohipour, MD, Subhash Kini, MD FACS, Daniel Herron, MD FACS Mount Sinai School of Medicine, New York, N.Y.**

Bariatric surgery is becoming increasingly common such that it is now the second most common abdominal procedure in the United States. Estimates suggest that about 220,000 patients underwent bariatric surgery in 2009. On the other hand gastric cancer is the second leading cause of cancer death in the world. The actual incidence of gastric cancer in bariatric population is unknown. As of 2009 there are about 22 case reports of gastric or esophageal cancer in the literature. During the past decade laparoscopic approach has emerged into oncologic surgery for foregut malignancies. However laparoscopic approach in a patient with previous Roux-En-Y gastric bypass is much more complex and technically demanding. This video present a case of gastric adenocarcinoma in a 62 year-old-female who underwent an open gastric bypass 23 years ago. She presented with dysphagia, nausea and vomiting and weight loss. An EGD did not reveal a discrete mass although there was a near obstructing stricture at the level of the gastrojejunostomy. Biopsies showed a moderately differentiated adenocarcinoma. Pre-op work up including CT of the chest, abdomen and pelvis were negative for metastatic disease. Via laparoscopic approach the gastric remnant, gastric pouch and a retrocolic, retrogastric gastrojejunostomy were identified. The gastric remnant and pouch were adherent. After extensive adhesiolysis and proper mobilization the gastric remnant was divided distally. This was followed by division of the distal esophagus and eventually the proximal Roux-limb. These divisions and further mobilization resulted in en bloc resection of the specimen. The reconstruction (esophageojunostomy) was achieved using EEA. Gross assessment of the specimen showed a diffuse hardening and almost complete obliteration of the gastrojejunostomy site without clear visualization of a mass. The final pathology confirmed invasive moderately differentiated for adenocarcinoma (T3N1Mx). Postoperatively she did well and currently is completing chemoradiation therapy. In conclusion, laparoscopic gastrectomy for gastric cancer is a feasible and safe procedure in patients with previous Roux en Y gastric bypass while achieving resection compared to open approach.
MANAGEMENT OF LINEAR CUTTING STAPLER COMPLICATIONS DURING LAPAROSCOPIC SLEEVE GASTRECTOMY

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We demonstrate and discuss the management of intraoperative complications of linear cutting staplers used during a sleeve gastrectomy. The first case demonstrates the management of a locked stapler which could not be opened intracorporeally, while the second case demonstrates the management of the transection of a nasogastric tube during the sleeve gastrectomy. We focus on the approach to releasing the trapped nasogastric tube from the staple line.

THE STEPS AND OUTCOME OF TRANS ESOPHAGEAL ENDOSCOPIC MYOTOMY

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We have performed totally endoscopic myotomy for esophageal achalasia using NOTES technique. This video presents the stepwise technique and clinical outcome of Trans Esophageal Endoscopic Myotomy (TEEM).

SINGLE INCISION LAPAROSCOPIC TOTAL ABDOMINAL COLECTOMY FOR REFRACTORY ULCERATIVE COLITIS

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Total abdominal colectomy (TAC) with ileal pouch-anal anastomosis (IPAA) is the intervention of choice for patients with medically uncontrolled ulcerative colitis (UC) and in debilitated patients it is our practice to offer a staged approach. In this setting, laparoscopic surgery has shown to be safe, offering several advantages over the open approach[1-3]. Single incision laparoscopic surgery (SILS) has been proposed as a new surgical strategy in the effort to further reduce the surgical trauma[4-7]. For the first step, the total abdominal colectomy (TAC), SILS offers a true scarless procedure, using the ileostomy site as the only access point.

In this video we present a SILS TAC in a 38 years-old man with UC admitted for an acute flare. Aggressive medical therapy with corticosteroids and immunosuppressors had failed. The operative time (“skin to skin”) was 110 minutes. There were no intraoperative complications or need for conversion. The postoperative course was uneventful; ostomy output was noted on the first post-operative day. A low residue diet was tolerated on the third post-operative day. The patient was discharged the following day.

A GelPoint® Advanced Access Platform (Applied Medical, Rancho Santa Margarita, CA) was employed as sole access to the abdominal cavity. One 12-mm and three 5-mm trocars are introduced through the gel platform, allowing to perform the procedure with conventional laparoscopic instruments, including a 12-mm 30-degree laparoscope and a 5-mm vessel sealing device for tissue dissection and vascular resection. The GelPoint® is inserted through a circular incision at the level of the ileostomy site, marked preoperatively. We start the dissection from the right colon, beginning with the most challenging portion (below the access site) and therefore at greater risk of conversion and then proceeding clockwise to the rectosigmoid junction. The Trendelenburg position and side-to-side tilting of the table are dynamically adjusted in order to obtain a good exposure of the working area as described in the video. After having visualized the right ureter and the duodenum, the ileocolic pedicle is identified, dissected and divided. The ascending colon is completely mobilized in a medial-to-lateral fashion. The hepatocolic ligament is then taken down and the transverse colon is mobilized by dividing the mesocolon and the greater omentum. Subsequently the left colon is freed sharply from the lateral attachments and bluntly along the avascular line of Toldt. The left ureter is exposed and the inferior mesenteric vein and the branches of the sigmoid arteries are identified, dissected and divided. After switching to a 5-mm laparoscope, the rectosigmoid junction is dissected off the mesentery and divided with an endoscopic stapler. The entire specimen is exteriorized through the incision and the terminal ileum is divided extracorporeally. Finally, the ileostomy is matured in the standard Brooke fashion.

LAPAROSCOPIC REPAIR OF MALROTATION IN THE ELDERLY

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Introduction: Midgut malrotation is an anomaly of fetal intestinal rotation that is usually diagnosed in childhood.

Methods: We present a case of a 66 year old female with a history of chronic constipation and laxative abuse who presented with sudden onset abdominal distention. CT scan of abdomen and pelvis revealed congenital malrotation of the intestines with significant twisting of the small intestines, especially in the distal ileum, which was in the left upper quadrant. Laparoscopic evaluation confirmed the diagnostic findings. The small bowel was explored starting at the duodenum and the congenital adhesions (Ladd’s bands) were lysed and the duodenum was straightened completely. The small bowel was run and significant twisting of the distal small bowel was noted. The malrotation was reduced. Appendectomy was performed. The duodenum and proximal jejunum were plicated to the right retroperitoneum so that bowel would not twist along the base of the mesentery.

Result: Postoperatively, the patient recovered rapidly and was discharged on the first postoperative day. At five month follow up, the patient is doing well.

Conclusion: Midgut malrotation manifesting in elderly patients is relatively uncommon. Laparoscopic repair in such an age group is feasible and potentially beneficial in terms of early discharge.

LAPAROSCOPIC SUBTOTAL COLECTOMY WITH TRANSRECTAL EXTRACITION OF THE WHOLE COLON AND ILEORECTAL ANASTOMOSIS

Mark A Dobbertien, DO FACS, Ziad T Awad, MD FRCSI FACS, Michael Nussbaum, MD FACS, Sunil Sharma, MD University of Florida College of Medicine at Jacksonville, Department of Surgery, Minimally Invasive Surgery Division

The video presented is of a 22 year old female with multiple sclerosis and colonic inertia and biliary dyskinesia who underwent a laparoscopic subtotal colectomy with transanal extraction of the colon and intracorporeal triple stapled ileorectostomy and cholecystectomy with a similar natural orifice extraction route.
LAPAROSCOPIC REPAIR OF MORGAGNI HERNA

Salman Al-Sabah, MD
MD MBA FRCS, LS Feldman, MD, MC Vassiliou, MD, LE Ferri, MD, GM Fried, MD McGill University

The laparoscopic approach for repair of Morgagni hernia avoids the morbidity of laparotomy. This video illustrates the case of a 72 years old woman with upper abdominal pain and a large Morgagni hernia was diagnosed on CT scan. The hernia defect was first closed primarily with non-absorbable trans-abdominal sutures and mesh pledgets placed with the aid of a suture passer. Polyester mesh was placed over the primary closure and secured with a combination of tacks (superiorly) and fibrin glue. The patient was discharged on postoperative day-2, and was symptom-free 4 months post operatively. Chest x-ray did not demonstrate any evidence of recurrence.

LAPAROSCOPIC TREATMENT OF MEDIAN ARCUATE LIGAMENT SYNDROME

Erik G Lough, MD, Sam Rossi, MD, Albeir Mousa, MD FACS WVU - Charleston Division, CAMC Health Sciences Institute

This is a video abstract case presentation of a young female with typical symptoms of Median Arcuate Ligament (MAL) Syndrome and findings of celiac artery compression on abdominal angiogram. The patient was treated by laparoscopic decompression of the MAL. Exposure was obtained by dividing the cural fibers from the aortic hiatus down to the origin of the renal axis. This was followed by division of the MAL and celiac ganglion using the harmonic scalpel and endoshears. The crura were then reaproximated superiorly using intracorporeal suturing. Postoperatively the patient had dramatic relief of her symptoms and continued relief at 6 months followup.

LAPAROSCOPIC REPAIR OF DIAPHRAGMATIC HERNIA AFTER CARDIAC TRANSPLANT AND LVAD EXPLANTATION

Philip Bao, MD, Kevin Watkins, MD Stony Brook University Medical Center

Diaphragmatic hernia after cardiac transplantation and left ventricular assist device (LVAD) explantation is reported to occur at a rate of approximately 5-15%. This video describes the case of a 57 year old man approximately one year after transplant and LVAD removal who presented with abdominal pain and weight loss. Diagnostic workup found a diaphragmatic hernia with associated gastric volvulus. He underwent successful laparoscopic repair with a biologic mesh. The stomach was adhered to the hernia sac essentially in direct contact with the moving left ventricle. No perioperative cardiac events occurred and in short-term follow-up he is eating normally and is pain-free.

MINIMALLY INVASIVE ESOPHAGO-GASTRECTOMY WITH INTRA THORACIC ANASTOMOSIS

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Introduction: Commonest type of Gastro esophageal junction growth in our region is Siewert type III with involvement of the cardia. After resection with adequate margin, the length of the stomach tube might not reach the neck. In such situations Ivor-Lewis Esophago- Gastroectomy with intra thoracic anastomosis is a good alternative.

Procedure: - Laparoscopically the stomach is mobilized preserving the right gastro-epiploic vessels. -Lymph nodes along all named vessels are removed. -Greater curvature tube is formed ensuring a distal margin of 5 cm. The esophagus is transected 10 cm proximal to the GE junction. -The stomach tube is sutured by loose stitch to the hiatus. -The specimen is extracted through a Pfannenstiel incision. -Patient is then placed in prone position and through a right thoracoscopic approach, the cut end of the esophagus is further mobilised till the azygos vein. -Further 5 cm of the esophagus is cut and removed in a endobag through the 12 mm port site. -A side to side esophageal gastric anastomosis is performed using endo GIa staplers.

LAPAROSCOPIC REDO NISSEN FUNDOPLICATION WITH ESOPHAGEAL DIVERTICULECTOMY

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The patient is a 32-year-old female who had undergone laparoscopic Nissen fundoplication six years previously for severe gastroesophageal reflux and low-grade Barrett’s dysplasia. She did well for four years until her symptoms returned during pregnancy. Esophagogastroscope revealed an intact wrap with an intraluminal suture. An Upper Gastrointestinal contrast study also showed an intact fundoplication; however, a hiatal hernia with a paraesophageal component was demonstrated. At time of redo laparoscopic fundoplication, a tissue plane to separate the wrap could not be recognized. Further dissection resulted in partial fundic gastrectomies as well as identification of a...
esophageal diverticulum secondary to pledged suture erosion through the stomach and esophagus from the initial wrap. The diverticulum was confirmed with intraoperative endoscopy and ultimately, a diverticulectomy and re-do Nissen was performed. This case demonstrates the issues of long-term fundoplication durability, the difficulties of revisional gastric surgery, and the risks of foreign bodies and erosion within the GI tract resulting in esophageal diverticulum formation.

V039
THORACOSCOPIC REMOVAL OF A SUTURE NEEDLE FROM THE POSTERIOR PERICARDIUM AFTER CABG
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Objective: To demonstrate a minimally invasive thoracoscopic approach (VATS) for removal of a retained pericardial suture needle after standard CABG surgery.
Methods: A 46 year old male presented with unstable angina in November of 2009. His workup demonstrated significant coronary artery disease for which he underwent a 6 vessel CABG, including dissection into the left chest for preparation of the LIMA. At seven post operative weeks, a chest x-ray demonstrated a foreign body (suture needle) present in the cardiac silhouette. Further CT scan imaging demonstrated the suture needle to be localized in the left inferior-posterior pericardium. The patient underwent a left VATS exploration for removal of the foreign body.
Results: The pericardial suture needle was successfully retrieved using a thoracoscopic approach. The chest tube was removed on the first post operative day and the patient was discharged to home on the second post operative day. The patient’s post operative course and recovery were uneventful.
Conclusions: A minimally invasive approach can be undertaken for the removal of a foreign body even after prior open chest surgery, avoiding the associated morbidity of a repeat sternotomy.

V040
LAPAROSCOPIC EXPERIENCE WITH VERNIX CASEOSA PERITONITIS
Jonathan G Bailey, MD, Dennis Klassen, MD Dalhousie University
Vernix Caseosa Peritonitis (VCP) is a rare condition presenting within several weeks of caesarean section with the triad of peritonitis, fever and leukocytosis. Due to its non-specific symptoms and unremarkable laboratory and radiological investigations VCP is generally diagnosed intraoperatively. A cheesy white exudate coating the serosa of the intraperitoneal organs in the absence of inflammation of visera is pathognomonic. The diagnosis is confirmed by biopsy of the white plaques. The purpose of this video presentation is to raise awareness of VCP, as well as review the clinical, intraoperative and histological presentation of VCP. This video demonstrates laparoscopic diagnosis and treatment of VCP.

V041
Introduction: Laparoscopic pancreatic procedures have increased in recent years. However, few cases have been reported for resection of tumors in the pancreatic uncinate process using this approach. Given the anatomical location of the uncinate process, a complete mobilization of the hepatic flexure of the colon is usually done to access it. In this video, we present a hitherto undescribed laparoscopic inframesocolic approach.
Patient and method: This is the case of a 39 years old female patient with a 16 millimeter insulinoma in the uncinate process of the pancreas. Studied for obesity (BMI: 35), a 16 millimeter hyper vascular nodule was found in the uncinate process of the pancreas. The laboratory test confirmed the suspicion of insulinoma. The patient is placed in the supine position with legs apart. The surgeon stands between the legs of the patient. A 30° 5 mm optics is used, and therefore, only a twelve millimeter trocar is needed. Due to the obesity of the patient, we felt that an infra meso colic approach would be the most appropriate. After general inspection of the abdominal cavity, the first maneuver moves upwards the major omentum and the transverse colon in order to expose the mesenteric root. We can identify the duodenum through the peritoneal sheath. With the help of a hook and gentle movements, the duodenum and uncinate process of the pancreas are exposed. The duodenum is mobilized and the superior mesenteric vein identified and carefully exposed in the vicinity of the uncinate pancreas. In order to improve the exposure for the uncincotomy, a hanging manoeuvre of the mesenteric root will be performed with a cotton tape. The intraoperative ultrasound helps to identify the tumor, and defines the limits of the resection. A inferior pancreatico duodenal vein is dissected and carefully sectioned between clips and the uncinate process is dissected from the retropancreatic fascia. The endoGia with a reinforced green cartridge is inserted and fired. The specimen is drag into a bag and removed through the 12 millimeter orifice that does not have to be enlarged. A final inspection is performed to confirm that the duodenum maintains a normal color and no bleeding is detected. An hemostatic substance is left in the surgical field. The cotton tape is removed and the peritoneal defect closed with interrupted stitches. No drain is left.
Results: The postoperative was uneventful and the patient was discharged on the third postoperative day. One year after the procedure, the patient has lost 35 kilograms and has a normal BMI. She remains asymptomatic and with normal blood sugar levels. No early or late surgical complications were observed.
Conclusion: Laparoscopic resection of the uncinate process of the pancreas is feasible and safe. The inframesocolic approach is easy to perform and achieves an optimal exposure that is improved with a hanging maneuver of the mesenteric root.

V042
SINGLE-ACCESS TRANSMURAL LAPAROSCOPIC SPLENECTOMY USING CURVED REUSABLE INSTRUMENTS
Giovanni Dapri, MD, Pietro Carnevali, MD, Lorenzo Casali, MD, Jacques Himpens, MD, Guy Bernard Cadiere, MD PhD European School of Laparoscopic Surgery, Saint-Pierre University Hospital, Brussels, Belgium
Introduction: The authors report a laparoscopic splenectomy completely performed through a single incision in the umbilicus using direct trocar access and curved reusable instruments.
Video: A 23 years old female consulted for steroid non-responsive idiopathic thrombocytopenic purpura. Preoperative work-up showed a normal sized spleen and thrombocytopenia. The patient showed clinical evidence of steroid therapy side effects Cushing aspects. The umbilicus was incised and a purse-string suture was applied. An 11-mm non disposable trocar was inserted for a 10-mm, 30° angled scope. Curved reusable instruments (Karl Storz-Endoskope, Tuttingen, Germany) were advanced transumbically. The splenocolic ligament was opened, followed by the opening of the gastrosplenic ligament. Because of the curves of the instruments there was no conflict between the instruments'
tips internally, or between the surgeon’s hands externally. The short gastric vessels were sectioned by curved coagulating hook and curved bipolar scissors. The splenic artery was dissected and isolated from the splenic vein at the level of the splenic hilum. 5-mm straight clip applier was used to ligate the latter vessels. Posterior attachments were freed from hilum to the top and from the hilum to splenic inferior pole. The spleen was retrieved transumbilically in a plastic bag.

**Results:** Addition of supplementary trocars or incisions was not necessary. Operative time was 180 minutes and final umbilical scar 16 mm. The patient was discharged on 3rd postoperative day; after 3 months she’s doing well.

**Conclusions:** Single-access laparoscopic splenectomy is feasible and safe to be performed using curved reusable instruments. The curves of the instruments permit surgeon to work in ergonomic position similar to standard laparoscopy, without instruments clashing. The cost of the procedure remains similar to standard laparoscopy.

**V043**

**ROBOT-ASSISTED TRANSAXILLARY HEMI-THYROIDECTOMY FOR LARGE RIGHT SIDE GOITER**

**Pier C Giulianotti, Francesco M Bianco, Nicolas C Buchs, Subhashini M Ayloo**

**University of Illinois at Chicago**

**Introduction:** Thyroid surgery seems one of the most promising fields for the application of robotic surgery. However, relatively strict selection criteria are currently used notably concerning the size of the lesion. With our growing experience, we performed a robot-assisted transaxillary hemi-thyroidectomy for a large right side goiter (7 cm) using the UIC retractor. The objective of this video is to describe this new technique and approach.

**Methods:** A 31-year old woman was referred to our clinic for a thyroid nodule. She has had general malaise for the past 2 months with palpitations, dysphagia for the past 3 weeks and 20lb weight loss over the past month. An ultrasound showed an enlarged right lobe (6.9 x 2.9 x 3.6 cm) with a smaller hypoechoic area (2.9 x 2.3 x 1.6 cm). The right lobe under ultrasound revealed benign follicular cells.

**Results:** A right transaxillary approach was performed under general anesthesia. A short incision of about 5-6 cm is placed and a prepectoral tunnel was created until the two heads of the sternocleidomastoid muscle are visualized. The UIC retractor was placed in position in order to elevate the central part of the sternocleidomastoid muscle and to expose the thyroid. The fourth arm of the robotic trocar was placed on chest and the three others arms including the scope were placed through the small incision. The lateral dissection of the right thyroid lobe was performed first with the harmonic scalpel. After recognition of the laryngeal nerve and parathyroid glands, the inferior thyroid vascular pedicles were controlled. Because of the benignity of the case, the thyroid isthmus was then divided, allowing a better exposure of the upper thyroid pole. With the retraction by the assistant, the upper thyroid vascular pedicle was divided using the harmonic scalpel.

The specimen was removed and the hemostasis was controlled. The mean operative time was 120 minutes. The blood loss was minimal and the postoperative course was uneventful.

**Conclusions:** This video highlights the technical details of robot-assisted transaxillary hemi-thyroidectomy for a benign but large goiter. This approach offers a better cosmosis than the traditional open thyroid surgery.
V046 A COMPLICATION OF BILOGIC MESH FOLLOWING NISSEN FUNDOPICATION Edward L Felix, MD, Daniel E Swartz, MD, Advanced Bariatric Centers of California

V047 LAPAROSCOPIC ESOPHAGO-GASTROSTOMY FOR END-STAGE ACHALASIA Peter G Devitt, Dr, Sarah K Thompson, Dr, Glyn G Jamieson, Dr, University of Adelaide

V048 LAPAROSCOPIC DOUENDEAL-JEJUNAL BYPASS FOR SUPERIOR MESENTERIC ARTERY SYNDROME Jacob A Greenberg, MD EdM, John J Kelly, MD, University of Massachusetts Memorial Medical Center, Worcester, Massachusetts, USA

V049 LAPAROSCOPIC REDUCTION OF PARADUODENAL HERNIA IN ADULTS A Bernshtein, I. Fendrich, M Gianos, S Zsomstein, R J Rosenthal, Cleveland Clinic Florida

V050 TAKE DOWN OF NISSEN FUNDOPLICATION AND COMPLETION OF PRIOR SLEEVE GASTRECTOMY Kelvin Higa, MD FACS, Saber Ghiaissi, MD MPH, Ruby Gatschet, MD, Keith Boone, MD FACS, University of California, San Francisco, Fresno

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**P001**

**LAPAROSCOPIC LIVER RESECTION FOR HEPATOCELLULAR CARCINOMA WITH CIRRHOSIS**
Akishige Kanazawa, PhD, Tadashi Tsukamoto, PhD, Sadatoshi Shimizu, PhD, Shintaro Kodai, PhD, Sadaaki Yamazoe, PhD Department of Hepato-Biliary-Pancreatic Surgery, Osaka City General Hospital

**Objective:** The purpose of this study was to evaluate the usefulness of laparoscopic liver resection for hepatocellular carcinoma (HCC) with liver cirrhosis.

**Background:** Liver resection for HCC in cirrhotic patients sometimes involves difficulty in controlling perioperative hemorrhage or postoperative intratable ascites, which often result in a longer hospital stay. With improvements in technology and equipment, laparoscopic liver resection is now considered a safe procedure even in the management of liver tumors if performed by experienced surgeons. However, it is unknown whether laparoscopic liver resection of HCC is suitable for cirrhotic patients.

**Method:** From February 2006 to August 2010, 245 cases of patients underwent liver resection for HCC. Among them, 80 patients were diagnosed with complete liver cirrhosis histologically and underwent a partial hepatectomy. Partial hepatectomy was done through a laparotomy in 62 cases (laparotomy group) and through a laparoscopy in 28 cases (laparoscopy group). The two groups were analyzed for surgical invasiveness and postoperative complications. We used ultrasonic surgical aspirator and soft coagulation (VIO systemTM) during hepatectomy through laparotomy or laparoscopy.

**Results:** There were no significant differences between the two groups in preoperative indocyanine green retention rate (ICGR15). Although there were no significant differences in operation time between the two groups, operative blood loss was smaller in the laparoscopy group than that in the laparotomy group (p<0.0001). Postoperative mortality and morbidity rates in the laparotomy group were 3.2% and 46.8% (29/62) respectively, whereas the laparoscopy group presented no case of mortality or morbidity (p<0.0001). Mean hospital stay was 11 days in the laparoscopy group, significantly shorter than the laparotomy group with 22 days (p<0.0001).

**Conclusion:** Even in cases of cirrhosis, laparoscopic liver resection reduced surgical invasiveness and postoperative complications and was found effective for shortening the length of hospitalization. Laparoscopic liver resection is a safe and feasible procedure with good, short-term outcomes for treating patients with HCC with liver cirrhosis.

**P002**

**THREE YEAR EXPERIENCE OF SINGLE SITE SURGERY AT A SINGLE COMMUNITY INSTITUTION**
Chris Edwards, MD, Alan Bradshaw, MD Mission Hospitals, Asheville NC

**Introduction:** Single site surgery has been described in gynecology, urology, bariatrics, and general surgery. Safety and feasibility issues have yet to be addressed conclusively. The purpose of this paper is to describe the initial single center experience of various single site procedures at a community based center.

**Methods:** A retrospective analysis at a community based tertiary center was performed regarding all surgeons' experience in various single site surgical procedures including right colectomy, hernia, bariatrics, appendectomy, and cholecystectomy. The primary outcome measure was complication rate for each procedure. Secondary measures include operative time, incision length, and use of postoperative pain medication.

**Results:** A total of 7 surgeons performed 191 single site procedures were performed from 3/2007 to 8/2010 (125 cholecystectomies, 15 appendectomies, 15 right hemicolectomies, 8 ventral hernias, 3 inguinal hernias, 20 gastric bandings, 2 sleeve gastrectomies). Average OR time was 64 mins for cholecystectomy, 46 mins for appendectomy, 99 mins for right hemicolectomy, 37 mins for ventral hernia, 50 mins for inguinal hernia, 75 mins for gastric banding, 130 mins for sleeve gastrectomy. Overall complication rates are 4.8% for cholecystectomy (3 accessory duct leaks, 1 trochar hernia, 2 wound infections), 6.6% for appendectomy (1 wound infection), 6.6% for right hemicolectomy (1 wound infection), 0% for ventral hernia, 0% for inguinal hernia, 10% for gastric banding (1 port flip, 1 intolerance of band), 0% for sleeve gastrectomy. Average length of stay was 0.17d for cholecystectomy, 1.13d for appendectomy, 4.46d for right hemicolectomy, 0d for ventral hernia, 0d for inguinal hernia, 0.78d for gastric banding, 3d for sleeve gastrectomy. Pre discharge 10 point pain scores were 2.5 for cholecystectomy, 3.13 for appendectomy, 0.67 for right hemicolectomy, 2.17 for ventral hernia, 2 for inguinal hernia, 3.69 for gastric banding, 2.5 for sleeve gastrectomy. Average follow up for all cases was 4.82 months. Use of post op narcotics after cholecystectomy were described as none or minimal (less than one day use) in 62.3% and 64% percent in appendectomy.

**Conclusions:** Single site surgery is feasible with reasonable outcomes for a number of procedures. Further studies should be done comparing specific outcomes in a prospective manner regarding effects on pain and other perioperative outcomes including safety.

**P003**

**STANDARDIZATION OF HALS-DP FOR PANCREATIC MALIGNANT TUMORS**
Masayuki Tori, MD, Hiroki Akamatsu, MD, Katsuhide Yoshidome, MD, Shigeuki Ueshima, MD, Ken Omori, MD, Toshiro Nishida, MD Osaka Police Hospital

**BACKGROUND:** Laparoscopic distal pancreatectomy (LADP) has been applied to many cases in pancreatic surgery, but it is not yet a standard method for pancreatic malignant tumors. The chief reasons for it: (1) difficulty in efficient lymph nodes dissection, and (2) difficulty in the estimation of surgical stump with linear stapler. We developed “antero-lateral approach” with hand-assisted maneuver as a standard method for pancreatic disease including malignancy. We present our new methods in our recent cases to show this procedure superior to conventional one as above two problems can be overcome, so that open laparotomy should be replaced by this method.

**METHODS:** For the last 10 years, 78 patients were treated with distal pancreatectomy for pancreatic tumor in our hospital. HALS with transperitoneal “antero-lateral” approach was performed in 9 patients (group A). Other cases consisted of open laparotomy (group B). The patients’ features, the operative details and the postoperative outcome in the both groups were compared.

**OPERATIVE PROCEDURE:** In preoperative estimation by CT scan and ultrasonography, location of the tumor should be identified. The sites of laparoscopic ports, including Gel-port, are marked by ultrasonography before operation. In the operation, skin incisions for 3 ports, one of which is just left side of umbilicus and the other two are along the subcostal lesion, and one Gel-port (upper midline abdomen) are made. First, the lower pole and the back side of spleen is dissected from the retroperitoneum and then splenic artery is clipped just below the marking which is made preoperatively. The lateral side then the upper pole of spleen is detached from the retroperitoneum, followed by enough isolation of pancreatic tail and body from the retroperitoneum (Portal vein should be visible). Finally, pancreas is cut with conventional method without GIa and the stump can be sutured through the small incision (Gel-port). Further lymph nodes dissection can be fully performed using operator’s left hand.
RESULTS: In group A, the average hospital stay was 10 days, while 16 days in group B. Operation time, intraoperative blood loss did not show any difference. And in the aspects of intraoperative and postoperative complication, there were not any complications in the two groups.

CONCLUSIONS: In the cases of pancreatic tumor including malignancy, HALS with transperitoneal “antero-lateral” approach significantly facilitates the surgical procedure and reduces the operational risk, while maintaining the advantages of conventional laparotomy. HALS with transperitoneal “antero-lateral” approach is more feasible and more effective than open laparotomy for pancreatic tumor.

P004
ANALYSIS OF A SINGLE INSTITUTION EXPERIENCE WITH LAPAROSCOPIC CHOLEDOCHODUODENOSTOMY Yashodhan S Khajanchee, MD, Maria A Cassera, BS, Chet W Hammill, MD, Lee L Swanstrom, MD, Paul D Hansen, MD Providence Portland Medical Center

Introduction: Choledochoduodenostomy for treatment of common duct stones or stricture is seldom performed in the age of endoscopic retrograde cholangiopancreatography (ERCP), however, it remains a valuable surgical approach for the internal drainage of the common bile duct (CBD). Choledochoduodenostomy has rarely been performed due to anecdotal evidence of a high rate of associated sump syndrome. This study reviews indications, perioperative complications and mid-term outcomes of laparoscopic choledochoduodenostomy.

Methods: All patients considered for elective laparoscopic choledochoduodenostomy between October 1999 and October 2009 by a single hepatobiliary surgeon were included in the analysis. Indications for choledochoduodenostomy were benign biliary obstruction and recurrent cholangitis due to chronic cholecdocholithiasis (n=15), chronic pancreatitis (n=3) and distal CBD stricture (n=2). None of the procedures were performed emergently. A side-to-side anastomosis was performed in all procedures. Pre-operative, operative and follow-up data were collected through a rigorous retrospective chart review.

Results: A total of 20 patients were scheduled for laparoscopic choledochoduodenostomy (3 male: 17 female). The mean age at the time of procedure was 61 (±17.9) years. Mean operative time was 269.2 (±59.4) minutes. Five patients with severe adhesions from previous surgeries required conversion to open. No major operative complications were reported. The mean hospital stay was 8.0 (±7.2) days. Post-operatively 3 out of 15 (20.0%) patients who underwent laparoscopic choledochoduodenostomy and 3 out of 5 (60.0%) patients converted to open suffered major complications. These included one thromboembolic event, one respiratory arrest shortly after extubation, one infection related to mesh placed during a prior hernia repair, one bile leak, one intra-abdominal abscess with wound dehiscence, and one patient who required blood transfusion for unexplained anemia. One mortality secondary to myocardial ischemia was reported on post-operative day 28. After a mean follow up of 20.8 (±19.7) months, only one patient was found to have recurrent symptoms. Four patients were reported to have died of causes related to other comorbid conditions.

Conclusion: Laparoscopic choledochoduodenostomy is a beneficial approach to a complex group of patients with refractory CBD obstruction. This technically demanding procedure is feasible, however, patients with multiple prior surgeries and co-morbidities have high complication and open-conversion rates.

P005
EFFECT OF INCREASING CASE COMPLEXITY ON FUNDAMENTAL LAPAROSCOPIC SKILLS: UNDERSTANDING THE SKILL SET FOR ADVANCED LAPAROSCOPY Marilou Vaillancourt, MD, Melina C Vassiliou, MD, Simon Bergman, MD, Gerald M Fried, MD, Sebastian Demyttenaere, MD, Pepa Kaneva, MSc, Liane S Feldman, MD Steinberg-Bernstein Centre for Minimally Invasive Surgery & Innovation, Department of Surgery, McGill University, Montreal, Canada

Introduction: The operating room is an ongoing learning environment for surgical trainees. However, very little standardized assessment of their operative performance occurs. The Global Operative Assessment of Laparoscopic Skills (GOALS) is a 5-domain non procedure-specific global rating scale evaluating fundamental laparoscopic skills with evidence supporting its reliability and validity. The aims of this study were (1) to establish a mechanism to track laparoscopic operative performance of general surgery residents as a first step towards incorporating performance metrics into our training program, and (2) to evaluate the impact of increasing case complexity on fundamental technical skills of general surgery trainees.

Methods: We established a web-based data collection system allowing for convenient data input. Participating surgeons were emailed the evaluation forms the day before the scheduled cases and reminded the next day. 8 attending surgeons at three training sites evaluated laparoscopic operative performance of participating trainees after each case using GOALS. Participants who completed a gallbladder resection from the liver bed, a triangle of Calot dissection and one more advanced laparoscopic procedure within a two weeks period were included. Repeated measures ANOVA with Bonferroni post-hoc analysis was used to compare scores for the 3 case categories. Results: From October 2009 to September 2010, evaluations for 553 cases were sent and 213 complete evaluations were received for 24 residents. 14 residents completed procedures in the 3 case categories within 2 weeks. The advanced cases included inguinal and incisional hernia repair, gastrectomy and hemicolectomy. Total scores and scores for each item (except depth perception) declined with increasing case complexity (Table 1). Post-hoc analysis demonstrated significant deteriorations in total score, bimanual dexterity, efficiency and autonomy between cholecystectomy and advanced procedures. Conclusion: Systematic assessment of performance is feasible, although compliance remains an issue. Routine measurement of performance adds an important component to a training program and can provide formative feedback. In this study, we observed that laparoscopic operative performance of residents, as measured by GOALS, decreases as they face more advanced cases. Although depth perception is developed early and is preserved as case complexity increases, strategic use of both hands, the flow of the operation and autonomy decline when residents face an increase in cognitive load such as a less familiar procedure.

Table 1: Mean (SD) GOALS scores per item, maximum item score is 5, total score is 25

<table>
<thead>
<tr>
<th>GOALS Items</th>
<th>Total 20.4 (3.9)</th>
<th>19.6 (4.2)</th>
<th>17.7 (3.2)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Depth perception</td>
<td>4.2 (0.9)</td>
<td>4.2 (0.9)</td>
<td>4.1 (0.7)</td>
<td>0.91</td>
</tr>
<tr>
<td>2. Bimanual dexterity</td>
<td>3.9 (0.9)</td>
<td>3.8 (1.0)</td>
<td>3.3 (0.7)</td>
<td>0.01*</td>
</tr>
<tr>
<td>3. Efficiency</td>
<td>3.9 (0.9)</td>
<td>3.8 (1.0)</td>
<td>3.3 (0.7)</td>
<td>0.04*</td>
</tr>
<tr>
<td>4. Tissue handling</td>
<td>4.2 (0.8)</td>
<td>3.9 (0.8)</td>
<td>3.7 (0.8)</td>
<td>0.03*</td>
</tr>
<tr>
<td>5. Autonomy</td>
<td>4.1 (0.8)</td>
<td>3.7 (1.0)</td>
<td>3.1 (1.0)</td>
<td>&lt;0.01*</td>
</tr>
<tr>
<td>TOTAL</td>
<td>20.4 (3.9)</td>
<td>19.6 (4.2)</td>
<td>17.7 (3.2)</td>
<td>0.03*</td>
</tr>
</tbody>
</table>

*p < 0.05
P006
SURGICAL RESIDENT LEARNING CURVE FOR A SIMULATED SINGLE PORT LAPAROSCOPIC SURGICAL TASK

Nathan E Conway, MD, Neal E Seymour, MD, Ron W Bush, BS, John R Romanelli, MD
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INTRODUCTION: Although single port laparoscopic surgery (SPLS)-experienced surgeons have been shown to perform better than inexperienced surgeons on simulated SPLS, the rate of acquisition of this skill is not known. To define a SPLS learning curve for surgical residents, a simulated single port task was performed repetitively and performance compared to SPLS-experienced surgeons.

METHODS: Study participants were six PGY 2-4 residents in the surgery residency at Baystate Medical Center in Springfield, MA. Residents performed 10 iterations of the FLS Precision Cutting task on the ProMIS™ trainer (Haptica Ltd.) using Roticulating EndoGrasp™ and Roticulating EndoShears™ instruments (Covidien, Inc., Mansfield, MA) placed via a SILSTM Port (Covidien, Inc). Simulator measurements included time (seconds), path length (cm), and smoothness (number of velocity changes); task accuracy (cm2 off cutting line) was recorded manually. Values from the ten attempts were divided into five equal quantiles, each quantile representing the average of two iterations. Differences between values from the consecutive attempts were analyzed using the Friedman test with post-tests. A flat segment of the learning curve was defined by the point at which the value of successive iterations was not significantly different from values of previous iterations. Performance differences between residents and SPLS-experienced surgeons were analyzed by Mann-Whitney U-test. Proficiency was defined as performance within one standard deviation of SPLS-experienced surgeons.

RESULTS: Learning curves: Resident performance improved for successive iterations for time (p = 0.005) and for smoothness (p = 0.045), but not for path length and accuracy. Transition to a stable level of performance occurred at iterations 5-6 for time, but could not be characterized by post-test for smoothness. Residents vs. SPLS-experienced surgeons: The SPLS-experienced surgeons performed significantly better than the resident group for the first quantile for time (179 ± 35 vs 407 ± 102, p = 0.01), path length (2306 ± 911 vs 4998 ± 2178, p = 0.038) and smoothness (977 ± 343 vs 2053 ± 554, p = 0.01). No further significant differences were seen beyond the second quantile for time, and the first for path length and smoothness. Accuracy was not significantly different between groups.

Proficiency: The percentage of residents with performance more than one standard deviation above the SPLS surgeon mean was: Time 100%, 100%, 67%, 50%, 50%; Path Length 83%, 50%, 50%, 67%, 50%; Smoothness 100%, 67%, 33%, 67%, 50%, for the first through the fifth quantiles, respectively. All residents performed within one standard deviation of the SPLS surgeon mean for accuracy measures.

DISCUSSION: Repetitive practice of simulated single port laparoscopic surgery significantly improves performance. The characteristics of a learning curve for this task trainer were best demonstrated for time as a performance measure. In aggregate, significant differences in resident and attending performance were abolished with only modest practice, but several residents continued to perform 1 or more standard deviations off the expert mean. This indicates that some residents will require more than 10 attempts to achieve the level of competency defined in this study.

P007
RADIOFREQUENCY ABLATION FOR INTRAMUCOSAL CARCINOMA IN BARRETT’S ESOPHAGUS

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INTRODUCTION: Radiofrequency ablation (RFA) is an established treatment modality for patients with high-grade dysplasia in the setting of Barrett’s esophagus (BE). However, this treatment is not well established for use in patients with BE and intramucosal cancer (IMC). We present our initial outcomes in a series of patients treated with RFA in the setting of esophageal IMC.

METHODS: A retrospective review of a prospective database was performed to identify and review patients undergoing RFA for biopsy proven IMC. In each case, radiofrequency ablation was performed using the HALO system (BARRX Medical, Sunnyvale, CA). Visible lesions were removed by endoscopic mucosal resection (EMR) prior to ablation. Main outcome measures included patient demographics, characteristics of the BE, ablation technique and variables, procedure complications, and treatment outcomes. Patients achieving complete response (no dysplasia or BE) had intensive biopsies performed every 3 months for continued surveillance.

RESULTS: Between February 2006 and August 2010, 11 patients were treated with RFA. The worst pathologic grade of BE prior to RFA was IMC with high-grade dysplasia in 100% of patients. The median age at first treatment was 72 (range 35-84), and 9 (82%) patients were males. The median length of BE was 4 cm (range, 1-12 cm). Ten (91%) patients underwent an (EMR) for visible nodularity preceding treatment with RFA. All patients underwent RFA using the HALO system as follows: the HALO™ circumferential balloon catheter was used alone in 1 (9%) patient, the HALO™ focal ablation device was used in 5 (45%) patients, or a combination of both was used in 5 (45%) patients. Five patients were in the early stages of ongoing RFA treatment regimens and did not have sufficient follow up data. Of the remaining patients, 5 (83%) achieved complete eradication of IMC, dysplasia and BE after undergoing an average of 2.2 RFA sessions (range 1-3). During a median follow up of 19 months (range 3-26 months), no histological recurrence of dysplasia or BE was seen. One patient, with a family history of esophageal cancer, underwent an esophagectomy after 3 RFA attempts failed to eradicate persistent non-nodular IMC; he remains cancer free on continued surveillance. There were 2 procedure related complications: one patient had post procedure nausea requiring overnight admission; one patient experienced dysphagia to solid food, which resolved following a single endoscopic dilation.

CONCLUSION: Radiofrequency ablation is becoming a widely accepted treatment modality for patients with Barrett’s esophagus and early neoplasia. Adding our experience to the current literature, this report demonstrates the feasibility and efficacy of RFA for patients with IMC. Thus far, 5 of 6 patients (83%) treated with RFA experienced complete remission of IMC, dysplasia, and BE without being subjected to the morbidity of esophagectomy. We submit that RFA offers a safe, effective outpatient treatment alternative for the challenge of managing BE containing IMC. Although larger studies are necessary, the minimal morbidity of radiofrequency ablation compared to esophagectomy, may establish this technique as the the initial modality of choice for treatment of early esophageal cancers.
**P008**

**SINGLE PORT TRANSUMBILICAL LAPAROSCOPIC APPENDECTOMY: A PRELIMINARY COMPARATIVE RANDOMIZED STUDY WITH ACUTE APPENDICITIS IN VILALLONGA, PHD. A NADA, PhD, OSCAR GONZALEZ, PhD, A SUUMER, T DEMIREL, MANUEL ARMENGOL, U BARBAROS General Surgery Department. University Hospital Vall d’Hebron. Barcelona. Spain. General Surgery Department. Cairo University. Egypt. General Surgery Department, Istanbul University, Istanbul Faculty of Medicine. Turkey.**

**INTRODUCTION:** Since early nineties, laparoscopic appendectomy (LA) has become another optional treatment for acute appendicitis. A novel approach such as Single Port Access appendectomy (SPAA) has been described since then. In order to elucidate the possible differences between standard treatment and this novel technique, we designed a randomized comparative study.

**METHODS:** Between July 2009 and March 2010, 87 patients were random for suspected appendicitis in order to perform SPA appendectomy or laparoscopic appendectomy. All patients were enrolled in this multicentre study. The surgeons enrolled patients and were randomized in two different groups. In one group were enrolled patients who underwent standard laparoscopic approach and another group patients with SPAA. Standard trocars and instruments were used in both groups according to surgeon’s experience. Laparoscopy was performed and the appendix was removed. The ligation of appendix was performed either by thread loop, or endoscopic stapler. Outcomes, including blood loss, operative time, complications, and length of stay were recorded. Pain scores were analysed and time for discharge. The details regarding the recovery of patients were collected prospectively.

**RESULTS:** There were 46 patients in the SPAA group and 41 in the LAG. The mean age of the patients was 34,2 (17-73) for the SPAA group and 37,7 (19-69) for the LAG. There were 19 males and 27 females in the SPAA group and 22 males and 19 females in the LA group. SILSTM Port was used in 38 patients and TriPortTM in 8 patients. The mean operative time was 40,4 minutes in the SPAA group, and 35,0 minutes in the LA group. Only 1 patient of the SPAA group, the procedure was converted to an open approach due to technical difficulties in a colonic cancer. Complications occurred in 3 patients; 1 acute heart infarction, an acute pulmonary oedema and finally a postoperative haemorrhage (all in the SPAA group).

Surgeons used LigaSure® in 30 patients in the SPAA group and in 25 patients in the LA group. For the appendix section, endoloop were used in 22 patients in the SPPA group and in 33 patients in the LA group. Oral intake was accomplished after 12,5 hours in the SPAA group and 10,7 hours in the LA group. The mean hospital stay was 33,5 hours in the SPA group and 34,0 hours in the LA group. Pain was evaluated and was 2,8 in the SPA group and 2,9 in the LA group, according to the AVS after 24 hours. The degree of satisfaction was higher in the SPA group (7,5 versus 6,9). Same results were found for the aesthetic result (8,6 versus 7,4).

**CONCLUSION:** This study shows the feasibility and safety of single-port transumbilical laparoscopic appendectomy. This includes obese patients, uncomplicated and complicated appendicitis as well as for exploratory laparoscopy. Refinements in instrumentation will enable wider use of this novel minimally invasive approach. It can be undertaken without the expense of added operative time and provides patients with minimal, if any, apparent scarring. The true benefit of the technique should be assessed by new randomised controlled trials.

**P009**

**A CASE-MATCHED COMPARISON OF LAPAROSCOPIC AND ROBOTIC COLORECTAL SURGERY** Marylise Boutouts, Dr. Anthony III M Vernava, Dr Physicians Regional Medical Center, Cleveland Clinic Florida

**Objectives of the Study:** Robotic colorectal surgery is an emerging technology that may confer technical, clinical and ergonomic benefits. Furthermore, it has been suggested that right hemiectomy serves as an ideal procedure to begin the learning curve in robotic colorectal surgery. We aim to compare the outcomes of laparoscopic and robotic colorectal surgery, and to assess the learning curve of this technology.

**Methods and Procedures:** All patients who underwent robotic colorectal surgery and case-matched laparoscopic controls (matched by gender, ASA, and procedure) were identified from our prospectively maintained colorectal registry. Demographic and clinical variables were obtained from the registry and confirmed by chart review. Outcome measures assessed included: drop in hemoglobin over 24 hours, estimated blood loss (EBL), peri-operative blood transfusions, number of lymph nodes harvested (oncologic cases), operating room set-up time, length of operating time (LOR), and length of hospital stay (LOS).

**Results:** Thirty-one patients underwent robotic colorectal resections (ROB) over a 6 month period (02/10-08/10); these were case-matched to 31 patients who underwent laparoscopic colorectal surgery (LAP) in the same time period. The LAP and ROB groups were similar in age (72.0 vs. 68.5 yrs, p=0.220), gender (61% vs. 59% female, p=0.796) and ASA class (ASA2 39% and ASA3 55% vs ASA2 39% and ASA3 48%, p=0.611).

Indication for operation was also similar between LAP and ROB groups: malignancy (55% vs. 58%, p=0.755), diverticular disease (35% vs. 26%, p=0.520) Crohn’s disease (0% vs. 3%, p=0.313). In each group there were 15 right, 9 left/sigmoid and 7 rectal resections performed. The mean difference observed between LAP and ROB resections was not significantly different for peri-operative hemoglobin drop (0.942 vs. 1.16, p=0.542), EBL (137mL vs. 134 mL, p=0.931), number of peri-operative blood transfusions/patient (0.419 vs. 0.290, p=0.514), number of lymph nodes harvested (16.9 vs. 19.5, p=0.296), operating room set-up time (32 min in both groups) and LOR (198 min vs. 209 min, p=0.517). However, there was a significant difference in LOS (6.3 days vs. 4.1 days, p=0.005) between LAP and ROB colectomies. Furthermore, regarding ROB right hemicolectomies, significant improvements were observed in mean EBL (51mL vs. 100mL, p=0.05) and LOR (141 vs. 202 min, p=0.05) for the last 7 cases compared to the first 8 cases.

**Conclusions:** In our experience, robotic colorectal surgery is associated with significantly shorter LOS, without any significant difference in operating room set-up time or LOR compared to laparoscopic colorectal cases. Right hemicolectomies may be the ideal robotic learning case, with demonstrable significant improvements in EBL and LOR as surgical experience grows.

**P010**

**EFFICACY OF ALVIMOPAN (ENTEREG) AFTER OPEN VS. LAPAROSCOPIC COLECTOMY** Fia Yi, MD, Stephanie Pappas, MD, Kelly Klinker, MD, David N Armstrong, MD Georgia Colon and Rectal Surgical Clinic

**PURPOSE.** Alvimopan (Entereg) has been demonstrated to reduce the duration of post operative ileus (POI) and length of hospital stay (LOS) after various types of open small bowel and large bowel resections. This study investigates the impact of Alvimopan (ALV) after open vs. laparoscopic bowel resection

**METHODS.** A 6 month retrospective review of open (OPEN) vs. laparoscopic (LAP) colectomy was undertaken. The study was limited to two specific colectomy procedures: Right colectomy (RT) and Sigmoid colectomy (SIG), performed both OPEN and
Results: There were no difference between groups in age, sex and pre-operative BMI. Both our study groups showed significant postop improvement in reflux symptom score (Collis group: Mean 5.19 vs 1.22, p=0.0001; Non Collis group: Mean 5.32 vs 1.38, p=0.0001), antacid use (Collis group: Mean 2.57 vs 0.40, p=0.0001; Non Collis group: Mean 2.57 vs 0.36, p=0.0001) and QOLRAD score (Collis group: Mean 114.76 vs 167.26, p=0.0001; Non Collis group: Mean 97.57 vs 164.03, p=0.0001). There was no significant difference between the Collis group vs the non Collis group postoperatively for reflux symptom score (Mean 1.25 vs 1.33, p=0.5889), antacid use (Mean 0.39 vs 0.34, p=0.6821), or QOLRAD score (Mean 167.6 vs 164.63, p=0.5141). We looked specifically at dysphagia and noted pre-operatively 75 out of 106 patients complained of dysphagia but only 32 out of 106 reports same after laparoscopic Collis gastroplasty. This is comparable to the Non-Collis group with 103 out of 145 patients complained of dysphagia but only 45 out of 145 reports same after laparoscopic fundoplication without Collis gastroplasty. (p=0.5221)

Conclusions: Collis gastroplasty combined with fundoplication is an effective procedure for patients with a shortened esophagus and provides equivalent outcomes in terms of symptoms, medication use as well as QOLRAD score. We also noted no difference between the Collis and the Non Collis group in terms of dysphagia symptoms both pre and postoperatively. Concerns about functional dysmotility or postop GI symptoms should not preclude the use of Collis gastroplasty when a “short esophagus” is suspected.

P012
CAUSES OF DISSATISFACTION FOLLOWING LAPAROSCOPIC FUNDOPICATION: THE IMPACT OF RECURRENT SYMPTOMS, NEW SYMPTOMS, AND THE PATIENT EXPERIENCE
Leigh A Humphries, Kenneth Lubercie, BS, Sharona B Ross, MD, Alexander S Rosemurgy, MD Digestive Disorders Center, Tampa General Hospital, Tampa, FL, USA

Introduction: Laparoscopic fundoplication is the “gold standard” therapy for GERD, though success after laparoscopic fundoplication is not uniform. This study was undertaken to determine the causes of dissatisfaction following laparoscopic fundoplication.

Methods: 1063 patients undergoing laparoscopic fundoplication scored the frequency and severity of symptoms before and after fundoplication, and graded their experiences from Very Satisfying to Very Dissatisfying. Objective outcomes were determined by endoscopy, barium swallow study, and pH monitoring. Additional data were obtained from clinic notes and written patient comments. Median data are reported.

Results: 101 (9.5%) patients, 58% female and age 55 years, reported dissatisfaction following laparoscopic fundoplication (95 Nissen, 4 Toupet, 2 Dor); 22 (22%) operations were “redo” fundoplications. 2 (2%) operations were converted from laparoscopic to “open”. 10 (10%) patients experienced notable complications (pneumonia 2, pulmonary edema 2, bowel obstruction 1, enterotomy 1, gastric leak 1, inotraperitoneal bleeding 1, prolonged ileus 1, dysphagia 1). Length of stay was 1 day. Follow-up was 33 months. After fundoplication, heartburn significantly decreased in frequency and severity (p < 0.05, Wilcoxon matched pairs test), but remained notable (Figure 1). Postoperatively, new symptoms, including dysphagia, nausea, and aerophagia-related symptoms, were prevalent and severe (p < 0.01) (Figure 2). New symptoms were the most prominent postoperative complaint for 59% of patients, followed by symptoms of reflux recurrence (23%) or persistence (4%). 14% of patients had other primary complaints including postoperative complications, hospital personnel, and hospital bills. Failed fundoplication occurred in 5 (5%) patients, and two of these patients subsequently underwent “redo” fundoplications.
Conclusions: Dissatisfaction is uncommon after laparoscopic fundoplication. Postoperative complications and “redo” fundoplications are “risk factors” for dissatisfaction. Although heartburn symptoms improved following fundoplication, they persisted or recurred for many dissatisfied patients. New symptoms, mainly dysphagia and gas/bloating, are the primary causes of dissatisfaction. Other factors involving healthcare delivery also greatly influence the patient experience and satisfaction. Overall, fundoplication effectively palliates most, but not all, symptoms of GERD. Future efforts should focus on avoiding new troublesome symptoms after laparoscopic fundoplication and on improving the total patient experience.

P013

ONCOLOGIC OUTCOMES OF LAPAROSCOPIC SURGERY FOR GASTROINTESTINAL STROMAL TUMOR (GIST) OF THE STOMACH. Norihito Wada, MD PhD, Tsunehiro Takahashi, MD PhD, Hiroya Takeuchi, MD PhD, Rieko Nakamura, MD PhD, Takashi Ohyama, MD PhD, Yoshiro Saikawa, MD PhD, Makio Mukai, MD PhD, Yuko Kitagawa, MD PhD Department of Surgery, School of Medicine, Keio University

INTRODUCTION: Standard treatment for gastrointestinal stromal tumor (GIST) of the stomach, if localized to the primary lesion, is wedge resection with a clear surgical margin. Laparoscopic approach would be technically feasible, but oncologic validity is unknown to date. The purpose of this study is to clarify the oncologic outcomes of laparoscopic operation for gastric GIST.

METHODS: From January 2000 to December 2009, 91 patients of primary GIST of the stomach underwent curative resection. Of these patients, a total of 55 patients (60.4 %) were treated laparoscopically. Lesions in which immunohistochemical analyses were positive for KIT or CD34 were diagnosed as GIST. Resected tumors were grouped according to the Fletcher’s classification. Indication for laparoscopic approach is a tumor 2 to 5 cm in size. Tumors larger than 5 cm and close to the cardia or pylorus were excluded from wedge resection.

RESULTS: Patients were aged 25 to 84 years, with a median age of 59 years. Wedge resection was performed in 47 cases (85.5 %). Among them, 4 cases were treated with laparoscopy-assisted surgery, 2 were hand-assisted laparoscopic surgery (HALS) technique and the others (n=41) were pure laparoscopic surgery. Three patients were treated with proximal gastrectomy, 2 were with pylorus preserving gastrectomy, 2 were with sleeve gastrectomy and 1 was with distal gastrectomy. Laparoscopic assisted approach was used for these procedures other than wedge resection. The median follow-up period was 23 months with interquartile range, 15 to 49. Only 1 patient had recurrent disease (disease-free survival rate: 98.2 %). This 55-year-old patient had a large tumor (8 cm in diameter) in the posterior wall of the middle part of the stomach and treated with laparoscopy assisted local excision using surgical staplers. She developed multiple liver metastasis 6 months after surgery and died later. The resected tumor exhibited high mitotic activity (50/50 HPF) and negative KIT but positive CD34 staining. Recurrence related to laparoscopic surgery, including port-site recurrence, was not observed in this cohort.

CONCLUSIONS: Laparoscopic surgery in the management of relatively small gastric GIST (2 < T < 5 cm) could be oncologically validated. Although further investigation is needed, we believe that laparoscopic surgery for GIST of the stomach is feasible both oncologically and technically if treated in high volume centers.

P014

OUTCOMES OF MINIMALLY INVASIVE IVOR LEWIS ESOPHAGOGASTRECTOMY: ANALYSIS OF 105 CASES Ninh T Nguyen, MD, Xuan-Mai T Nguyen, PhD, Anderson H Shih, Taraneh Matin, Kevin M Reavis, MD, Brian Smith, MD UC Irvine Medical Center

Introduction: The thoracoscopic-laparoscopic approach to esophagectomy with a cervical anastomosis has been described; however, the literature is limited regarding the feasibility and safety of performing a minimally invasive Ivor Lewis esophagogastricctomy with construction of an intrathoracic anastomosis. The aim of this study was to review our results of patients who underwent minimally invasive Ivor Lewis resection.

Methods: The charts of 105 patients who underwent laparoscopic-thoracoscopic Ivor Lewis esophagectomy were reviewed. Main outcome measures include operative time, blood loss, length of intensive care (ICU) and hospital stay, conversion rate, morbidity, and in-hospital or 60-day mortality.

Results: Indications for esophagectomy were esophageal carcinoma (n=82), proximal gastric carcinoma (n=9), Barrett’s esophagus with high-grade dysplasia (n=5), benign disease (n=5), and esophageal stromal tumor (n=4). The stomach was used as the conduit in 99% of cases. The mean age was 64 years. Mean operative time was 197 ± 73 min. There was 1 conversion to open laparotomy. Mean ICU stay was 4 days (range, 0-37) and mean length of stay was 10.4 days (range, 5-57). Surgical margin was microscopically positive in 1 patient. Anastomotic leak occurred in 12.4% of cases. Late complications were seen in 26% of patients with the majority being anastomotic stricture. The in-hospital or 60-day mortality was 3.8%. The mean number of lymph nodes obtained was 21.4 ± 11.3. With a mean follow-up of 21 months, 2 patients had abdominal wall metastasis in conjunction with distant disease.

Conclusions: In this large clinical series, thoracoscopic and laparoscopic Ivor Lewis esophagectomy is feasible, safe, and associated with a low conversion rate to open laparotomy, acceptable morbidity, and low mortality.

P015

OUTCOMES OF LAPAROSCOPIC COLECTOMY FOR CANCER IN ELDERLY PATIENTS Wai Lun Law, MD, Jensen T Poon, MD, Joe K Fan, MD, Oswens S Lo, MD, Chi Chung Foo, MD The University of Hong Kong

Background: Resection for colon cancer in the elderly is considered a major undertaking, which is associated with a high operative morbidity. There have been studies on the safety of laparoscopic colectomy in the elderly. However, there are few data on the survival of elderly patients who underwent laparoscopic resection for colon cancer. This study compared the outcomes and survival of patients who underwent laparoscopic and open resection for colon cancer.

Patients and methods: From 2000 to 2009, 439 patients aged 75 years and above who underwent elective resection for colon cancer were included in the study. The operations were performed by specialists in colorectal surgery. Data on the patients’ demographics, operating details, pathology results, postoperative results and survival were collected prospectively. Comparison was made between patients who underwent laparoscopic and open surgery.

Results: Four hundred and thirty-nine patients (213 men) were...
Posters of Distinction Abstracts

P016
LAPAROSCOPIC TOTAL GASTRECTOMY AND D2 LYMPHADENECTOMY FOR GASTRIC CANCER AND INTRACORPOREAL ROUX-EN-Y RECONSTRUCTION USING ORO-GASTRIC ANVIL, OVER 120 CASES EXPERIENCES Hitoshi Satodate, Dr. Haruhiro Inoue, Dr, Junichi Tanka, Dr, Shin-ei Kudo Digestive Disease Center, Showa University Northern Yokohama Hospital

Introduction: Laparoscopic gastrectomy (LTG) for gastric cancer is becoming popular procedure in Japan. In our institution, 141 cases of the gastric cancer patients were operated last year and almost 90% of the patients were performed laparoscopic. One outstanding problem is intracorporeal esophago-jejunal anastomosis after LTG, because it's technical difficulty. We introduced newly developed oro-gastric anvil (Orvil) for the anastomosis, and have experienced over 120 cases.

Method: A 12-mm trocar is placed through umbilical incision, and four additional trocars are placed. Our standard lymphadenectomy is modified D2 dissection. After thorough mobilization of the abdominal esophagus, it is taped and retracted. Then the esophagus is divided with stapler, and the tube attached to the Orvil is inserted per orally as a conventional naso-gastric tube. The tube is extracted from the esophageal stump. The tube is extracted outside from the trocar, and the anvil is loaded into the esophageal stump. Then the handpiece of EEA stapler is introduced from the umbilical port incision, after the EEA stapler passed and fixed into the opening of the jejunal limb. And the anastomosis is stapled also under the direct vision of the laparoscope.

Results: We have performed 128 cases of the LTG with this procedure, and have experienced only one anastomotic leakage and the case could be managed with conservative treatment. No other major problems had occurred. Mean operation time is 231min.

Conclusion: This technique is technically feasible, can be performed easily and securely. Two clear advantages can be raised with this method, compare with other techniques. First, this technique can be relatively easily applied for the cancer of the cardia, with necessity of lower esophageal resection. Second, open of the intestinal lumen into the abdominal cavity is minimal. This could be great benefit in view of avoiding peritoneal metastasis and surgical site infection. This technique could become the standard methods for reconstruction after LTG, facilitating the acceptance of LTG as a surgical option for patients with gastric cancer. We will show our clinical practice.

P017
THE CURRENT STATUS OF LAPAROSCOPIC LIVER RESECTION IN JAPANESE SINGLE INSTITUTION AND A PROPOSAL OF CLASSIFICATION OF LAPAROSCOPIC LIVER RESECTION BASED ON TECHNICAL DEMAND Ken Torinohchi, MD, Etsuro Hatano, MD PhD, Koji Kitamura, MD, Takamichi Ishii, MD PhD, Takafumi Machimoto, MD PhD, Kojiro Taura, MD PhD, Kentaro Yasuchika, MD PhD, Shinji Uemoto, MD PhD Department of Surgery, Graduate School of Medicine, Kyoto University, Kyoto, Japan

Introduction: Laparoscopic liver resection (LLR) has been covered with medical insurance by Japanese government since April 2010. LLR can be expected to expand as standard hepatic resection. Standard technique and surgical training system have to be established because rapid expansion might cause fatal complication. We report the current status of LLR in our institution and propose a new classification of LLR based on technical demand for surgical training system.

Method: Patients undergoing LLR in our institution between Sept. 2002 and Oct. 2010 were included. LLRs were divided into 3 groups of consecutive periods and the method of parenchymal dissection and outcomes were compared.

Result: LLR was performed in 56 patients by the following
procedures: pure laparoscopic partial resection (48.2%), hybrid partial resection (30.3%), hand assisted partial resection (8.9%), hybrid lateral sectionectomy (5.4%), hybrid major hepatectomies (5.4%). The morbidity rate was 8.9%. There was no serious complication. The conversion rate was 1.8%. These results were similar to that of questionnaire survey conducted by the Japanese endoscopic liver surgery study group. Among three groups, these were no significant differences in operation time, blood loss and morbidity. The precoagulation method before parenchymal dissection has been getting unnecessary (73.7%, 47.4% and 11.1%; P<0.05). We propose the following 4 levels of LLR based on technical demand for training program. The 1st step includes the training by using surgical devices at open surgery. The 2nd step includes the pure laparoscopic partial resection with precoagulation and hybrid lateral sectionectomy. The 3rd step includes pure laparoscopic partial resection without precoagulation and hybrid major hepatectomy. The 4th step includes pure laparoscopic major resection and donor hepatectomy.

Conclusion: LLR is currently feasible. For safe LLR, the surgeons would need step by step improvement of the skill.

P018
EVALUATION OF THE ONCOLOGICAL STANDARD OF MINIMALLY INVASIVE ESOPHAGECTOMY (MIE) IN A UK SPECIALIST UNIT
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INTRODUCTION: The introduction of minimally invasive techniques in esophageal cancer surgery in the UK has been accompanied by concerns about the oncological standards of surgery compared with traditional open surgical resection. The Association of Upper Gastrointestinal Surgeons (AUGIS) and The Association of Laparoscopic Surgeons of Great Britain & Ireland (ALS) have recommended that the rates of resection margin positivity and lymph node yields in MIE should be detailed for comparison with open surgery.

Following the introduction of MIE in our unit we aimed to assess the oncological standard of this technique by comparing these two variables in open and laparoscopically assisted esophagectomy (LAE).

METHODS AND PROCEDURES: In line with UK recommendations we have first evaluated LAE before proceeding to totally MIE. During the initial learning phase patients with BMI >30, previous abdominal surgery and locally advanced T3 disease underwent standard open two-stage Ivor Lewis esophagectomy (ILE). All other patients underwent LAE with open right thoracotomy and intrathoracic anastomosis.

In both groups a standard 2-field lymphadenectomy was performed. Wide dissection around the hiatus was also performed with en-bloc resection of crural fibres and pericardial fat to minimise risk of circumferential margin involvement (CRM+). In the thoracic phase paraesophageal nodes were excised en-bloc with the thoracic duct. Histology reports were reviewed to assess intra-abdominal, thoracic and total lymph node yield as well as CRM+.

RESULTS: 52 patients were identified from January 2006 to September 2010. 24 had open ILE and 28 LAE. Median [range] total lymph node yield was 21 [8-52] and 26 [7-50] respectively for open and LAE specimens. Median [range] intra-abdominal lymph node yields were 10 [7-15] and 14 [6-32] for open and laparoscopic procedures respectively. There was no significant difference between lymph node yield with either technique (Wilcoxon rank sum p=0.34). Circumferential resection margins were positive in 38% (11 of 29) T3 resection specimens. Again there was no significant difference in CRM+ in either group (Chi squared p=0.137).

CONCLUSION: The lymph node yields, both total and intra-abdominal, are in line with those of previously published series. LAE produced equivalent lymph node yields compared to open ILE. The introduction of minimally invasive techniques to ILE does not appear to have compromised the oncological quality of surgery. In light of these findings we now plan to introduce and prospectively evaluate thoracoscopic and total MIE in our unit.


P019
SINGLE-INCISION LAPAROSCOPIC CHELGYSTECTOMY RESULTS IN SIMILAR SHORT-TERM POST-OPERATIVE PAIN AND QUALITY OF LIFE SCORES WHEN COMPARED TO MULTI-INCISION: A PROSPECTIVE RANDOMIZED BLINDED COMPARISON
Dennis Leung, MS, Woody Denham, MD, Mohammad Salaba, MD, Zeeshan Butt, PhD, Ermilo Barrera, MD, Michael Ujiki, MD NorthShore University HealthSystem, Chicago, IL

Introduction: Single-incision laparoscopic surgery was developed with the aim of decreasing post-operative pain and improving cosmesis. Several retrospective studies have shown feasibility of the technique; however, randomized trials comparing single-incision to multiple-incision laparoscopic surgery are lacking. We report a prospective randomized single-blinded trial comparing single-incision to multi-incision laparoscopic cholecystectomy.

Methods: After obtaining Institutional Review Board approval, patients with chronic cholecystitis, acute cholecystitis, or biliary dyskinesia were offered participation in this multi-hospital, multi-surgeon trial. A computer randomization program placed consenting patients in either a transumbilical single-incision (SI) or standard multi-incision (MI) group. Baseline quality of life and pain scores were obtained prior to surgery. Four dressings were placed in order to blind patients to their operation for one week. Patients were asked to complete pain and quality of life scores as well as record analgesic use throughout the post-operative period. Patients were followed for one year postoperatively.

Results: Over a one year period, 49 patients (26 SI) participated. Operating time was significantly less in the MI group (MI 34.8 vs. SI 69.2 mins, p<0.0001). Blood loss was no different (MI 22.5 ± 36.6 vs. SI 16.3 ± 30.2 ml, p=0.26) and there were no complications in either group. Post-operative pain scores and analgesic use were no different. Length of stay and return to work were similar. Return to daily activities was significantly longer in the SI group (MI 4.9 vs. SI 7.4 days, p=0.025). Post-operative quality of life scores were equivalent for fatigue (MI 13.68 ± 6.299 vs. SI 15.14 ± 4.565), pain (MI 8.53 ± 4.659 vs. SI 8.57 ± 3.025), and physical function (MI 33.5 ± 4.004 vs. SI 33.25 ± 3.683). Average follow-up was equivalent (MI 99.8 ± 99.6 vs. SI 90.2 ± 104.1 days, p=0.37).

Conclusions: Single-incision laparoscopic cholecystectomy results in longer operative time with similar post-operative pain and quality of life scores.
P020 IMPACT OF SLEEVE GASTRECTOMY ON GASTROESOPHAGEAL REFLUX DISEASE: A SYSTEMATIC REVIEW Sharon Chiu, MD, Daniel W Birch, MD, Xinzhe Shi, Arya M Sharma, MD, Shahzeer Karmali, MD, University of Alberta

P021 GASTRIC STAPLE LINE BUTTRESSING USING SEAMGUARD® IN LAPAROSCOPIC GASTRIC BYPASS: A PROSPECTIVE RANDOMIZED TRIAL Philippe A Topart, MD, Guillaume Becouarn, MD, Societe de Chirurgie Viscerale, Clinique de l’Anjou

P022 WEIGHT REGAIN FOLLOWING BARIATRIC SURGERY - A SYSTEMATIC REVIEW OF THE LITERATURE AND DISCUSSION OF CAUSATIVE FACTORS Balpreet S Brar, MD, Arya M Sharma, MD FRCP, Daniel W Birch, MD MSc FRCS, Xinzhe Shi, Shahzeer Karmali, MD FRCS, Department of Surgery, University of Calgary and Alberta

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P025 DISPARITIES IN ACCESS TO BASIC LAPAROSCOPIC SURGERY IN SEVERELY OBSESE COMPARED TO NON-OBSESE PATIENTS Esteban Varela, MD MPH, Ninh Nguyen, MD, Department of Surgery Washington University in St. Louis

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P027 DOES PREOPERATIVE UGI PREDICT HIATAL HERNIA PRESENCE DURING LAPAROSCOPIC ADJUSTABLE BAND PLACEMENT? Lane A Ritter, MD, Joseph Brouce, Minh Luu, MD, Khristi Autajay, RN LDN, Jonathan A Myers, MD, Rush University Medical Center

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P030 HIGH-RISK BARIATRIC VENOUS THROMBOEMBOLISM PROPHYLAXIS PRACTICE PATTERNS Howard I Pryor II, MD, Elissa Lin, Adam Singleton, Khashayar Vaziri, MD, George Washington University

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P032 POSTOPERATIVE UPPER GASTROINTESTINAL ENDOSCOPY AFTER LAPAROSCOPIC ADJUSTABLE GASTRIC BANDING IN JAPANESE PATIENTS WITH MORBID OBESITY Teijiro Hirashita, Masayuki Ohta, Kazuhiro Yada, Yukio Iwashita, Tadashi Ogawa, Hitodoshi Eguchi, Takashi Masuda, Seigo Kitano, Department of Surgery I, Oita University Faculty of Medicine

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P035 DOES SLEEVE GASTRECTOMY BOUGIE SIZE PREDICT SLEEVE SIZE? John O’Dea, PhD, Adrian McHugh, BSc, David Nolan, BE, Silvana Perretta, MD, Bernard Dallemagne, MD, Crospon, Galway, Ireland; IRCAD, Strasbourg, France

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P037 FREQUENCY OF ADJUSTMENTS AND WEIGHT LOSS AFTER LAPAROSCOPIC GASTRIC BANDING Evan Valle, MD, Minh B Luu, MD, Khristi M Autajay, RD, Louis F Fogg, PhD, Jonathan A Myers, MD, Rush University Medical Center

P038 LAPAROSCOPIC AND BARIATRICS: TREATING BIG PROBLEMS WITH SMALL INCISIONS Caroline Jadlowiec, MD, Nissin Nahmias, MD, University of Connecticut, Department of Surgery and The Hospital of Central Connecticut, Department of Bariatric Surgery

P039 FAITH OF SCHEDULED BUT CANCELLED BARIATRIC SURGERY CASES: WHAT HAPPENED AND WHERE DID THEY GO? Piotr J Gorecki, MD, Lindsay Bartholome, BA, Srikanth Eathiraju, MD, Leslie Wise, MD, New York Methodist Hospital, Brooklyn, NY

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P041 INTRACORPOREAL LIVER RETRACTION FOR SINGLE INCISION LAPAROSCOPIC GASTRIC BANDING: EVOLUTION OF TECHNIQUE IN 24 PATIENTS Lauren B Mashaud, MD, Angel Caban, MD, Daniel J Scott, MD, Johns Hopkins University, University of Florida, UT Southwestern Medical Center

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P044 CHYLOPERITONEUM AS A COMPLICATION OF LAPAROSCOPIC ROUX-EN-Y GASTRIC BYPASS (LRYGB): A CASE REPORT AND REVIEW OF THE LITERATURE Cade C Cinnamonand, DO, Zachary D Adams, MD, Michael Barker, MD, Naval Medical Center Portsmouth

P045 IS IT TIME TO CONSIDER LAGB + HIATUS HERNIA REPAIR A POSSIBLE SOLUTION FOR OVERWEIGHT WITH MECHANICAL GER? Matt B Martin, MD, Ben T Hoxworth, MD, Kristen R Earle, MD, David H Newman, MD, Moses Cone Health Systems, Greensboro, NC 27401
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Arthur Bohdajanial, MD, Medical University of Vienna, Dept. of Surgery and the Tantalus Research Team

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P083 ADJUSTABLE GASTRIC BAND PROLAPSE LEADING TO NEAR FATAL HEMORRHAGE: A CASE REPORT AND REVIEW OF THE LITERATURE. Nicholas Panella, BS, Steve Mattsinger, MD, Adolfo Z Fernandez, MD, Wake Forest University Baptist Medical Center

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P089 THE RISK OF PERI AND POST OPERATIVE BLEEDING DURING SLEEVE GASTRECTOMY IN PATIENTS RECEIVING LOW-DOSE ASPIRIN. Alex Gandas, MD MBA, Trung Nguyen, OD, UMDNU-SOM

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P091 LAPAROSCOPIC SLEEVE GASTRECTOMY WITH DUODENAL JEJUNAL BYPASS. Kazunori Kasama, MD, Yosuke Seki, MD, Akiko Umezawa, MD, Hideharu Shimizu, MD, Yoshimochi Kurokawa, MD, Yotsuya MedicalCube

P092 UPPER ENDOSCOPY AND GASTROINTESTINAL RADIOLOGICAL EXAMS RESULTS AFTER LAPAROSCOPIC ADJUSTABLE GASTRIC BANDING. Atul K Madan, MD FACS, Pejman Samouha, MD, Michael Omidi, MD, Julian Omidi, New Life Surgery Center, LLC

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P187 HOW WE ARE TRAINING LAPAROSCOPIC SURGERY IN KAMEDA MEDICAL CENTER. Noritsugu Naito, MD, Nobuyasu Kano, MD PhD, KAMEDA MEDICAL CENTER

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P192 "WORKING AGAINST THE CAMERA" DURING MINIMALLY INVASIVE SURGERY: EXTENDING THE USE OF THE FUNDAMENTALS OF LAPAROSCOPIC SURGERY PLATFORM DURING SURGICAL SIMULATION: Enrico Danzer, MD, Kristoffel Dumon, MD, Mayank Mittal, MD, Amy Cha, MD, Kenric Murayama, MD, Jon B Morris, MD, Noel N Williams, MD, Andrew Resnick, MD, Department of General Surgery, University of Pennsylvania

P193 HYBRID HERNIA REPAIR: A REAL EXPERIENCE IN SOFT CADAVER. Suthep Udomsawaengsup, MD, Amarit Tansawet, MD, Suppa-ut Pungpapong, MD, Chadin Tharavej, MD, Patpong Navicharern, MD, Chula Minimally Invasive Surgery Center, Chulalongkorn University, Bangkok, Thailand

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P195 EXPERT SURGEONS’ SKILLS DECAY IN SIMULATED LAPAROSCOPIC SURGERY: THE RELEVANCE OF TASK DIFFICULTY Ruchi Thanawala, MD, Ron Bush, BS, Neal E Seymour, MD, Baystate Medical Center

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P199 DO YOU HAVE TO BE AN EXPERT SURGEON TO MAKE A GOOD LAPAROSCOPIC SURGERY TRAINER? Susannah M Wyles, MSc MRCS, Danilo Miskovic, MD FRCS, Ian Jenkins, MD FRCS, Ara W Darzi, MD FRCS FMEdSc, George B Hanna, PhD FRCS, Imperial College London, St Mark’s Hospital Harrow

P200 DETERMINING THE STRUCTURE OF TRAINING SESSIONS FOR LAPAROSCOPIC SURGERY: WHAT IS IMPORTANT? Susannah M Wyles, MSc MRCS, Danilo Miskovic, MD FRCS, Roger Motson, MS FRCS, Robin H Kennedy, MS FRCS, Ara W Darzi, MD FRCS FMEdSc, George B Hanna, PhD FRCS, Imperial College London, Colchester General Hospital, St Mark’s Hospital Harrow

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P205 ACUTE APPENDICITIS AFTER COLONOSCOPY: A CASE REPORT AND REVIEW OF LITERATURE Ming-Li Wang, MD, Kuldeep Singh, MD, Federick Sabido, MD, Staten Island University Hospital

P206 TRANSVAGINAL LAPAROSCOPIC CHOLECYSTECTOMY PAIN STUDY Pratibh Vemulapalli, MD, Diego Camacho, MD, Scott Chudnoff, MD, Emanuel Agaba, MD, Harvey Rainville, MD, Montefiore Medical Center and Albert Einstein College of Medicine, Bronx, NY

P207 FEASIBILITY STUDY OF THE HYDRAULIC-DRIVE CAPSULE COLONOSCOPE Kazuhiko Shinohara, MD PhD, School of Health Science, Tokyo University of Technology

P208 WHAT ARE OUTCOMES FOLLOWING AMBULATORY ENDOSCOPY PROCEDURES? Walid M Hesham, MD, Peter W Marcello, MD, Patricia L Roberts, MD, Thomas E Read, MD, David J Schoetz, MD, Rocco Ricciardi, MD, Lahey Clinic

P209 FEASIBILITY OF THORACIC SYMPATHETOMY BY NATURAL ORIFICE TRANS UMBCILIAL SURGERY (NOTUS): IN A PIG MODEL Weisheng Chen, MD, Wen Wang, MD, Shengsheng Yang, MD, Dazhou Li, MD, Long Chen, MD, Zhijian Zhang, MD, Kelong Lin, MD, Lihuang Zhu, MD, Xuegang Feng, MD, Duoqiang Lian, FuZhou General Hospital

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P212 CATASTROPHIC SPLENIC INJURY FOLLOWING COLONOSCOPY Leopoldo M Baccaro, MD, Hamed Taheri, MD, Stanley Ogu, MD, Natasha Rodney, MSII, Harjeet Kohli, MD, Easton Hospital General Surgery Department

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P215 HYBRID-NOTES FOR GASTRIC GIST Masanobu Hagiike, MD Ph.D, Hironori Mori, MD, Norikatsu Maeda, MD, Hironobu Suto, MD, Minoru Oshima, MD, Naoki Yamamoto, MD, Hirota Kashiwagi, MD, Shintaro Akamoto, MD, Keitaro Kinokino, MD, Masao Fujiiwara, MD, Takehiro Takama, MD, Keichi Okano, MD, His, Dept of Gastroenterological Surgery and Endoscopy Center, Kagawa Univ, Japan

P216 COMPARISON OF EARLY MORBIDITY PARAMETERS BETWEEN SINGLE INCISION LAPAROSCOPIC CHOLECYSTECTOMY AND CLASSIC LAPAROSCOPIC CHOLECYSTECTOMY: A PROSPECTIVE CONTROLLED TRIAL Pankaj Garg, title, Jaj D Thakur, MBBS, Rajeev Kumar, MBBS MS, Ashok K Attri, MBBS MS, Jeremy Song, BS, 1. SGHKs Charitable Hospital, Sohna, Mohali, Punjab, India 2. University of Arkansas for Medical Sciences, Little Rock, USA. 3. Government Medical College, Chandigarh, India. 4. Simches Research Center, Massachusetts General Hospital, Boston, USA

P217 SAFETY AND FEASIBILITY OF SINGLE INCISION LAPAROSCOPIC CHOLECYSTECTOMY WITH CONVENTIONAL INSTRUMENTS IN A RURAL HOSPITAL Pankaj Garg, MBBS MS, Jai D Thakur, MBBS, N S Anjea, MBBS MS, SGHKs Charitable Hospital, Sohna, Punjab, India, Alchemist Hospital, Panchkula, India

P218 A NEW ENDOSCOPIC INTERVENTIONAL TECHNIQUE FOR THE PERCUTANEOUS TRANS-ESOPHAGEAL GASTRO-TUBING (PTEG) Hideto Oishi, MD PhD, Noriyasu Shirotani, MD PhD, Shingo Kameoka, MD PhD, Division of Digestive and General Surgery, Department of Surgery, Yachiyo Medical Center, Tokyo Women’s Medical University

P219 LAPARO-ENDOSCOPIC SINGLE SITE COLOSTOMY REVERSAL Nicole Sharp, MD, Paul Buckley III, MD, John Eckford II, MD, Rob Watson, MD, Texas A&M Scott & White Hospital

P220 : ERCP IN THE MANAGEMENT OF BILIARY ASCARIASIS. Towhidul Alam, Prof of Surgery, Bangabandhu Sheikh Mujib Medical University

P221 ECTOPIC PANCREAS IN THE STOMACH PRESENTING AS AN INFLAMMATORY ABDOMINAL MASS Takayuki Tokutsu, MD, Toshiyuki Mori, MD, Noritsugu Abe, MD, Tomokazu Kishiki, MD, Hiroyoshi Matsuoka, MD, Tadahiko Masaki, MD, Masanori Sugiyama, MD, Kyorin university

P222 DEVELOPMENT OF BIOABSORBABLE MATERIALS AIMED AT A CLOSURE FOLLOWING THE NOTES TRANSLUMINAL PROCEDURE Masayasu Alkawa, MD, Mitsuo Miyazawa, Prof, Katsuya Okada, MD, Yosuke Ueno, MD, Yasuko Toshimitsu, MD, Kojun Okamoto, MD, Isamu Koyama, Prof, Saitama Medical University International Medical Center

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P224 TRANSANAL ENDOSCOPIC MICROSURGERY (TEM) WITH SINGLE PORT INSTRUMENTS HJ Kim, BH Kye, HM Cho, SC Lee, JH Kim, IK Lee, YS Lee, ST Oh, JK Kim, St. Vincent’s Hospital, The Catholic University of Korea

P225 NOTES TRANSVAGINAL HYBRID CHOLECYSTECTOMY: EARLY EXPERIENCE OF A NEW APPROACH Shohan Shetty, MD, Amir H Sharif, MD, Andrew J Duffy, MD, Robert L Bell, MD, Kurt E Roberts, MD, Yale University School of Medicine, New Haven, CT, Saint Mary’s Hospital, Waterbury, CT

P226 POSSIBLE EXTENSION OF INDICATIONS FOR LESS INVASIVE ENDOSCOPIC SURGERY BY A SUPERPARAMAGNETIC CLIP FOR ENDOSCOPIES Takeshi Ohdaira, MD, Yoshikazu Yasuda, MD, Makoto Hashizume, MD, Department of Advanced Medicine and Innovative Technology, Kyushu University Hospital

P227 ADJUNCT USE OF SELF-EXPANDING COVERED STENT IN THE TREATMENT OF NON-ERODED STENOSIS BY SILICAT GASTRIC RING Seichie Kitahama, MD, Valerie J Halpin, MD FACS, Lee Swanstrom, MD FACS, Baylor College of Medicine, Michael E. De Bakey Department of Surgery

P228 NAVIGATION FOR NOTES: WHICH TOOL FOR WHICH TARGET? A CADEVERIC STUDY Eduardo A Bonin, MD MSc, Erica Moran, MD, Mary Knipschild, McConico Andrea, Juliane Bingener, MD, Christopher Gostout, MD, Developmental Endoscopy Unit, Mayo Clinic, Rochester, MN, EUA

P229 PERFORATED ULCER DISEASE - OPPORTUNITIES FOR IMPROVING OUTCOME EA Bonin, MD, E Moran, MD, A McConico, CJ Gostout, MD, J Bingener, MD, Mayo Clinic

P230 IS IT POSSIBLE TO STANDARDIZE A SINGLE-INCISION LAPAROSCOPIC CHOLECYSTECTOMY BY MEANS OF FOUR REFINEMENTS? Daisuke Sumitani, Masahiro Nakahara, Yoshikazu Fukuda, Fumito Kuranishi, Toshiro Noyiyuki, Minoru Yamaki, Kiyo Shimoda, Asuka Tanaka, Michinori Hamaoa, Ken Takahashi, Kazuhiko Taguchi, Yoshinori Kuroda, Onomichi General Hospital

P231 COMPARISON OF SYMPTOMATIC OUTCOMES OF ENDOSCOPIC FUNDOPICATION WITH LAPAROSCOPIC NISSEN FUNDOPICATION Kellie McFarlin, MD, Vic Velanovich, MD, Henry Ford Hospital

P232 TRANSANAL COMPLETION PROCTECTOMY USING TEM: INITIAL PATIENT EXPERIENCE IN HYBRID NOTES PROCEDURE Michelle K Sayu, MD, Alicia Logue, MD, Joseph Love, MD, University of Texas Health Science Center /South Texas VA Healthcare System San Antonio

P233 MEASUREMENT OF BACTERIAL CONTAMINATION DURING COLORECTAL RESECTION IS AN INADEQUATE MODEL FOR NATURAL ORIFICE TRANSVISCERAL SURGERY Melissa S Phillips, MD, Chike Chukwumah, MD, Joseph Trunzo, MD, Bradley Champagne, MD, Conor P Delaney, MD, Harry Reynolds, MD, Eric Marderstein, MD, Jeffrey Ponsky, MD, Sharon L Stein, MD, Jeffrey M Marks, MD, University Hospitals, Case Medical Center, Cleveland, OH

P234 THE CHALLENGE OF ASSESSING VISCERAL CLOSURE IN NOTES: A PROSPECTIVE STUDY EXAMINING ROUTINE COLORECTAL SURGERY AS A MODEL IN HUMANS Melissa S Phillips, MD, Chike Chukwumah, MD, Joseph Trunzo, MD, Bradley Champagne, MD, Conor P Delaney, MD, Harry Reynolds, MD, Eric Marderstein, MD, Jeffrey Ponsky, MD, Sharon L Stein, MD, Jeffrey M Marks, MD, University Hospitals, Case Medical Center, Cleveland, OH

P235 PATIENT’S PREFERENCE AMONG THE NEW MINIMALLY INVASIVE SURGICAL APPROACHES - NOTES, LESS AND MINILAPAROSCOPY. GUSTAVO L CARVALHO, MD PhD, FLÁVIO A JÚNIOR, MD, JOSÉ S SILVA, STUDENT, CAMILA R CRUZ, STUDENT, DIEGO L LIMA, STUDENT, EDUARDO C CHAVES, STUDENT, REBECA G ROCHA, STUDENT, ADRIANO C SALES, STUDENT, RAIMUNDO L GOUVEIA, STUDENT, UNIPECLIN, Faculty of Medical Sciences, University of Pernambuco; Recife, Brazil

P236 PURE NOTES: TRANSVAGINAL TUBAL STERILIZATION WITH FLEXIBLE ENDOSCOPE Jose Mejias, MD, Hector Almau, MD, Pierina Rosales, MD, Hector Almau, MD, Rafael De la Fuente, MD, Carlos Bravo, MD, Clinica Dr. A.L. Briceño Rossi

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P238 TRANSORAL INCISIONLESS FUNDOPICATION FOR TREATMENT OF PEDIATRIC GERD: 12-MONTH RESULTS OF A FEASIBILITY STUDY Mike Thomson MD, A Lobontiu MD, R Stewart MD, P Rao MD, S Marven, Centre for Paediatric Gastroenterology, Sheffield Children’s NHS Trust, Sheffield, U.K.
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P229 TRANSLUMINAL ENDOSCOPIC PANCREATIC DEBRIDEMENT FOR INFECTED PANCREATIC PSEUDOCYST  
J Andres Astudillo, MD, Loma Linda University Medical Center, Loma Linda, CA

P240 PREVALENCE OF AUTOIMMUNE DISEASE IN PATIENTS WITH ESOPHAGEAL ACHALASIA  
Jagdish D Booy, BSc, Julie Takata, George Tomlinson, David R Urbach, MD MSc, Division of General Surgery, University Health Network; and Departments of Surgery and Health Policy, Management and Evaluation, University of Toronto, Toronto, Ontario, Canada

P241 ARE PATIENTS THAT UNDERGO BARIATRIC SURGERY AT A GREATER RISK FOR GASTRO-JEJUNAL ANASTOMOTIC COMPLICATION COMPARED TO THOSE UNDERGOING NON-BARIATRIC FOREGUT SURGERY?  
L Michael Leitman, MD, Andrew D Yu, BA, Martin S Karpeh, MD, Mason W Mandy, MD, Christopher Roker, MBA, Albert Einstein College of Medicine, Beth Israel Medical Center

P242 A COMPARISON OF LAPAROSCOPIC TRANSHIATAL ESOPHAGECTOMY WITHOUT THORACOSCOPIC PORT VERSUS OPEN TRANSHIATAL ESOPHAGECTOMY  
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P243 SINGLE PORT LAPAROSCOPIC FUNDOPLICATION: INITIAL CLINICAL EXPERIENCE  
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P244 INITIAL EXPERIENCE WITH MINIMALLY INVASIVE ESOPHAGECTOMY AND GASTRIC SLEEVE FOR THE MANAGEMENT OF ESOPHAGEAL CANCER IN A LEVEL IV CLINIC  
Jorge Alberto Bernal Mesa, MD, Evelyn Astrid Moraldi, MD, America's Clinic Ces University

P245 MODIFIED LAPAROENDOSCOPIC GASTROSTOMY TUBE (LEGT) PLACEMENT IN INFANTS AND CHILDREN: OUTCOMES OF OUR ALL IN ONE TECHNIQUE.  
Ashvin Pimpalwar, MD, Saif Hassan, MD, Michael E DeBakey department of surgery, division of Pediatric surgery, Baylor college of medicine, Texas Children's Hospital, Houston, Texas.

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P247 TREATMENT OF GASTRIC ADENO-CANCER WITH SINGLE INCISION LAPAROSCOPIC GASTRECTOMY TECHNIQUE  
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P248 CASE SERIES OF PROPHYLACTIC LAPAROSCOPIC TOTAL GASTRECTOMY FOR HEREDITARY DIFFUSE GASTRIC CANCER WITH CADHERIN GENE MUTATION  
Manish Khare, MD, Donald W Weaver, MD, Jennifer L Hart, PAC, Department of Surgery, Wayne State University School of Medicine, Detroit, MI, 48201, USA

P249 THE LAPAROSCOPIC APPROACH FOR THE REMOVAL OF LARGE AND SHARP INGESTED GASTRIC FOREIGN BODIES - A CASE SERIES  
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P250 LAPAROSCOPIC TREATMENT OF SUBEPITHELIAL GASTRIC LESIONS IN AN ENHANCED RECOVERY PROGRAMME: A PROSPECTIVE STUDY  
Carmen L Mueller, MD BScH, Teodor P Grantcharov, MD PhD FRCS FACS, St. Michael's Hospital, Toronto, Ontario, Canada

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P252 LAPAROSCOPIC SURGERY FOR GASTRIC VOLVULUS  
Nobuyasu Kano, MD PhD FACS, Masaru Abe, MD, Takeshi Shimizu, MD, Hiroshi Kusunagi, MD PhD, Akihiko Takeshi, MD PhD, Makio Mike, MD PhD, Shigetoshi Yamada, MD, Yu Watarai, MD PhD, Akira Tsunoda, MD PhD, Motoji Fukazawa, MD, Noritsugu Naito, MD, Ken Hayashi, Kameda Medical Center

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P254 TENSION-FREE ANATOMICAL RECONSTRUCTION OF COMPLEX HIATAL HERNIA USING PORCINE DERMAL COLLAGEN.  
D Oweis, MBBS, MRCSed, D Veeramooootoo, MBBS, MRCS, ND Smart, PhD BMBCh, McH FRCS, Department of Upper Gastro-Intestinal Surgery, Royal Devon and Exeter NHS Foundation trust, Exeter, United Kingdom.

P255 HIATAL HERNIAS: PATHOPHYSIOLOGICAL THEORIES AND IMPLICATION FOR RESEARCH  
P. Marco Fisichella, MD, Cynthia Weber, MD, Vydia Shankaran, MD, Christopher S Davis, Loyola University Medical Center

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TATSUSHI SUWA, MD PhD, KAZUHIRO KARIKOME, MD, NAOKI ASAKAGE, MD PhD, EISI TOTSKU, MD PhD, NAOKAZU NAKAMURA, MD PhD, KEIGO OKADA, MD, TOMONORI MATSUMURA, MD, Kashiwa Kousei General Hospital

P257 LAPAROSCOPIC GASTRECTOMY WITH LYMPH NODE DISSECTION FOR GASTRIC CANCER  
Bac Nguyen Hoang, PhD, Long Vo Duy, MD, Long Tran Cong Duy, MD, Thuan Nguyen Duc, MD, University Medical Center, Ho Chi Minh city, Viet Nam

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P259 LAPAROSCOPIC SURGERY FOR SYNCHRONOUS GASTRIC AND COLORECTAL CANCER: REPORT OF THREE CASES  
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P260 COMPARISON OF SINGLE PORT AND STANDARD LAPAROSCOPIC FUNDUPLICATION  
Don J Selzer, MD, Jennifer N Choi, Department of Surgery, Indiana University School of Medicine, Indianapolis, Indiana

P261 FACTORS PREDICTIVE OF MORTALITY IN ESOPHAGECTOMY FOR MALIGNANCY  
Hossein Masoomi, MD, Kevin M Reavis, MD, Brian R Smith, MD, Michael J Stamos, MD, Ninh T Nguyen, MD, University of California, Irvine- Medical Center
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David Zychlinsky, MD, Derek Zieker, MD, Andreas Kirschniak, MD, Tobias Meile, MD, Dörte Wichmann, MD, Jonas Hoffmann, MD, Alfred Königsgainer, MD, Department of General, Visceral and Transplant Surgery, University Hospital Tübingen, Germany

P325 THE SAFETY AND USEFULNESS OF SINGLE INCISION LAPAROSCOPIC TAPP: A CASE REPORT

Hideya Kashihihara, Mitsuo Shimada, Nobuhiro Kurita, Takashi Iwata, Manasori Nishio, Kozo Yoshikawa, Tomohiko Miyatani, Chie Mikami, Tohru Utsunomiya, Tokushima University

P326 THE USE OF PROSTHETIC MATERIALS AS A PREVENTION OF INCISIONAL HERNIAS AFTER STOMA TAKE DOWN

Morris E Franklin, Jr, MD, P. Christopher Beatty, MD, Karla Russek, MD, Jooy George, MD, Texas Endosurgery Institute

P327 LAPAROSCOPIC VENTRAL HERNIA REPAIR USING ULTRA-LIGHT WEIGHT POLYPROPYLENE MESH: A SINGLE SURGEON EXPERIENCE IN A UNIVERSITY HOSPITAL

Yusuf Gunay, MD, Alyssa Capper, BA, Isaac Samuel, MD, Mohammad K Jamal, MD, University of Iowa Hospitals and Clinics, Iowa City, IA.

P328 FEMORAL HERNIA SAC LAPAROSCOPY: A CASE REPORT

Alexander Ramirez Valderrama, MD, Dan Ruiz, Alexander Kraev, MD, Venkata R Kakarla, MD, Howard Tinskenkel, MD, FACS, New York Hospital Queens

P329 SELF FIXATING MESH IS SAFE AND FEASIBLE FOR LAPAROSCOPIC INGUINAL HERNIA REPAIR

Chris Edwards, MD, Mission Hospitals, Regional Surgical Specialists, Asheville NC

P330 A PROSPECTIVE RANDOMIZED TRIAL COMPARING THE REBOUND HERNIA REPAIR DEVICE AND LIGHTWEIGHT MESH FOR LAPAROSCOPIC INGUINAL HERNIA: AN INTERIM ANALYSIS

John S Roth, MD, Jeff Haze, MD, Daniel Davenport, PhD, Vimal Narula, MD, Rebecca Dettorre, MD, Ambar Banarjee, MD, William Cavatass, MD, Emily Albright, MD, University of Kentucky, Ohio State University

P331 EMERGENCY LAPAROSCOPIC REPAIR FOR INCARCERATED VENTRAL HERNIA WITH COMPOSITE MESH

Joe Fan, MD, Oswns Lo, MD, Wai Lun Law, MD, The University of Hong Kong

P332 A STUDY OF OPEN TENSION-FREE MESH-PLUG HERNIA REPAIR FOR UNILATERAL STRANGLATED INGUINAL HERNIA

Ke Gong, MD, Haijun Jiang, MD, Dexiong Du, MD, Xia Zhao, MD, Chen Liu, MD, Department of General Surgery, Beijing Shijihong Hospital

P333 REOPERATIONS FOR RECURRENT INGUINAL HERNIA: HOW LONG FOR LONG TERM FOLLOW UP?

J Shelton, MD, M D Holzman, MD MPH, S Phillips, MSPH, W Nealon, MD, B K Poulose, MD MPH, Vanderbilt University Medical Center

P334 VENTRAL HERNIA RECURRANCE IS HIGHER IN PATIENTS WITH A HISTORY OF ABDOMINAL AORTIC ANEURYSM

Mohammad Salabat, MD, Dennis Leung, MS, Woody Denham, MD, Ari Robicsek, MD, Nancy Schindler, MD, Michael Ujiki, MD, NorthShore University HealthSystem, Chicago, IL

P335 DOES LAPAROSCOPY INCREASE THE DETECTION OF OBTRUATOR HERNIAS DURING INGUINAL HERNIA REPAIR?

Stanton T Smith, MD, Cayton Frenzel, MD, Arun Manvar, MD, Bruce Bernstein, PhD, Kristine O’Hara, MD, Ibrahim M Daoud, MD, Division of Minimally Invasive Surgery, Department of Surgery and Minimally Invasive Surgery Fellowship Program,
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Saint Francis Hospital and Medical Center, Hartford, CT, USA.

P336 LAPAROSCOPIC RETROPERITONEAL TRIPLE NEURECTOMY: A NEW TECHNIQUE FOR POST HERNIORRHAPHY NEURALGIA

David Santos, MD, Shirin Towfigh, MD, Cedars Sinai Medical Center

P337 SINGLE PORT LAPAROSCOPIC HERNIA REPAIR: A 106 PATIENT UK REVIEW

Harpreet S Mangat, Dr, Elaine Yip, Dr, Sarah Onida, Dr, Yuen Soon, Mr, Royal Surrey County Hospital, United Kingdom

P338 VENTRAL HERNIAS AND THE SUPER OBSE

Mohamed Dahman, MD, Peter Hallowell, MD, Bruce Schirmer, MD, Department of Surgery, University of Virginia Health System, PO Box 800709, Charlottesville, VA 22908, USA

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P340 LAPAROSCOPIC REDUCTION AND REPAIR OF AN IATROGENIC PERICARDIAL HERNIA UTILIZING MESH: CASE REPORT AND REVIEW OF THE LITERATURE.

Patrick R Reardon, MD, Brian J Dunkin, MD, Joanne M Chung, MD, Vadam Shermer, MD, Wega Koss, MD, Luis Benavente-Chenals, MD, The Methodist Hospital Department of Surgery Methodist Institute for Technology, Innovation, and Education Houston, Texas 77030

P341 GALLSTONES AND KIDNEY TRANSPLANTATION; PROPHYLACTIC OR EXPECTANT LAPAROSCOPIC CHOLECYSTECTOMY? Hani H Haider, MD, Hatem Matar, MD, Ali Taqi, MD, Hussain Hayati, MD, Adnan Sadeq, MD, Mustafa Almosawi, MD, Hamed Al-Essa Organ Transplant Center, Kuwait.

P342 LAPAROSCOPIC TREATMENT OF HYDATID CYST OF THE LIVER: A SINGLE INSTITUTIONAL EXPERIENCE

Ibrahim A. Salama, MD, Mohammed A Elhosany, MD, Elamir M Amir, MD, Department of Hepatobiliary Surgery1, Radiology2, Parasitology3. National Liver Institute, Menophyia University, Shiben Elkom,Egypt

P343 LAPAROSCOPIC MAJOR HEPATIC RESECTION. Hitoshi Inagaki, MD, Tsuyoshi Kunokawa, MD, Tadashi Yokoyama, MD, Manabu Kikuchi, MD, Nobuhiko Ito, MD, Yasuhisa Yokoyama, MD, Hiroimitsu Takeyama, MD, Toshiaki Nonami, MD, Department of Surgery, Yokoyama Hospital for Gastroenterological Diseases

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P345 ROUTINE INTRAOPERATIVE CHOLANGIOGRAPHY: A RETROSPECTIVE STUDY OF 2419 PATIENTS

Morris E Franklin Jr, MD, Rey G Romero, MD, Karla C Russek, MD, Jeffrey L Glass, MD, John J Gonzalez, MD, Texas Endosurgery Institute, Programa Muticentrico ITESM/SSNL

P346 A CATHETER-BASED SUTURE-FREE APPROACH TO BILIOENTERIC ANASTOMOSIS: A PILOT STUDY

John B Seal, MD, Jordan Stern, MD, Thuong VanHa, MD, John C Alverdy, MD, Giuliano Testa, MD, University of Chicago Departments of Surgery and Radiology

P347 LAPAROSCOPIC LIVER RESECTION FOR HEPATOCELLULAR CARCINOMA Osamu Itano, MD PhD, Minoru Tanabe, MD PhD, Shigeayuki Kawachi, MD PhD, Masahiro Shinoda, MD PhD, Go Oshima, MD, Yoshihiro Ono, MD, Noriyuki Tani, MD, Ryo Nishiyama, MD, Hiroaki Shiba, MD, Shoichi Hirohara, MD, Shigeki Wakiyama, MD, Yuji Ishida, MD, Katsuhiko Yanaga, MD, Department of Surgery, Jikei University School of Medicine

P348 SINGLE INCISION VS THREE INCISION LAPAROSCOPIC CHOLECYSTECTOMY : PROSPECTIVE STUDY

P349 CONGENITAL ABSENCE OF THE CYSTIC DUCT: A RARE BUT DANGEROUS ANOMALY

Sachin Patil, MD, Prakash Paragi, MS, MD, Sudhir Jain, MS FRCS, BCM Kaza, MS, Ronald Chamberlain, MD, NPA FACS, Saint Barnabas Medical Center, Livingston, NJ. Maulana Azad Medical College, New Delhi, India

P350 SINGLE-PORT VERSUS TWO-PORT VERSUS TRADITIONAL FOUR-PORT CHOLECYSTECTOMY: OUTCOMES AND COST BENEFIT COMPARISON ANALYSIS

Michael W Parra, MD, Edgar B Rodas, MD, Mark L Christensen, MSIV, Jakub Bartnik, MSIV, Boward General Hospital, Fort Lauderdale, FL

P351 MINIMAL INVASIVENESS OF LAPAROSCOPIC LEFT HEPATIC LOBECTOMY: A SPECIAL REFERENCE TO SYSTEMIC INFLAMMATORY RESPONSE SYNDROME

Tohru Utsunomiya, MD, Mitsuo Shimada, MD, Satoru Imura, MD, Yuji Morine, MD, Tetsuya Ikemoto, MD, Jun Hanaoka, MD, Shuichi i Iwahash, MD, Yu Saito, MD, Nobuhiro Kurita, MD, Hidenori Miyake, MD, Department of Surgery, The University of Tokushima

P352 SINGLE INCISION LAPAROSCOPIC SURGERY FOR HEPATIC GIANT CYST

Takeshi Gocho, MD, Takeyuki Misawa, MD, Nobuhiro Tsutsui, MD, Ryusuke Ito, MD, Hiroaki Shiba, MD, Shoichi Hirohara, MD, Shigeki Wakiyama, MD, Yuichi Ishida, MD, Katsuhiko Yanaga, MD, Department of Surgery, Jikei University School of Medicine

P353 TRANSUMBILICAL SINGLE-INCISION LAPAROSCOPIC CHOLEDOCHOLITHOTOMY USING CONVENTIONAL INSTRUMENTS: THE FIRST FIVE CASES

Wu Shuo-Dong, Tian Yu, Chen Yong-Sheng, Su Yang, Chen Chun-Chih, Department of Biliary and Vascular Surgery, Shengjing Hospital, China Medical University

P354 LAPAROSCOPIC ENUCLEATION OF NEUROENDOCRINE TUMOR OF PANCREAS

Takanori Morikawa, MD, Takeshi Naitoh, MD, FACS, Masayuki Kyoko, MD, Makoto Kinouchi, MD, Toshinori Andou, MD, Fuyuhiko Motoi, MD, Toshiaki Rikiyama, MD, Yu Katayose, MD, Shinichi Egawa, MD, Michiaki Unno, MD, Division of Hepatobiliary-pancreatic surgery, Department of Surgery, Tohoku University Hospital

P355 LAPAROSCOPIC COMMON BILE DUCT EXPLORATION (LCBDE) USING C-TUBE, AN ALTERNATIVE BILE DRAINAGE METHOD.

Yoshihide Chino, PhD, Masaki Fujimura, PhD, Isao sato, MD, Seiji Masuda, MD, Makoto Mizutani, PhD, Tomotake Tabata, MD, Atsushi Okita, PhD, Minoru lida, PhD, Daichi-Towakai Hospital Endoscopic Surgery Center

P356 (POSTER) ROUX-EN-Y LAPAROSCOPIC PANCREATICOJEJUNOSTOMY FOR CHRONIC PANCREATITIS

Juan Toro, MD, Jesus Vasquez, MD, Carlos Lopera, MD, Sergio Diaz, MD, Jean Vergnaud, MD, Andres Ricardo, Surgery department, University of Antioquia School of medicine. Medellin, Colombia

P357 PANCREATIC FISTULA RATE IS ACCEPTABLE AFTER LAPAROSCOPIC PANCREATIC SURGERY

John A Stauffer, MD, Ross F Goldberg, MD, James M Parker, MD, Steven P Bowers, MD, C Daniel Smith, MD, Horacio J Asburn, MD, Mayo Clinic, Florida

P358 OPEN ACCESS TECHNIQUE TO CREATE PNEUMOPERITONEUM AND USE OF “CRITICAL VIEW OF SAFETY” AS THE SAFEST WAY TO PERFORM LAPAROSCOPIC CHOLECYSTECTOMY. Konstantinos G Tsalis, PhD, George X Vrakas, MD, Zambia Koukouritaki, MD, George E Roidos, MD, Stavros Kalfadis, PhD, Konstantinos Bluchos, MD, Emmanuel Ch Christoforidis, PhD, Charalampos N Lazaridis, PhD, D’ Surgical Department Aristotles University of Thessaloniki, Greece

P359 LAPAROSCOPIC OR THORACOSCOPIC LIVER RESECTION FOR LIVER CANCER IN PATIENTS WITH PAST HISTORY OF
P360 ROBOT-ASSISTED LAPAROSCOPIC ULTRASONOGRAPHY FOR HEPATIC SURGERY Peter D Peng, MD, Caitlin M Schneider, BS, Russell H Taylor, PhD, Christopher J Hassler, PhD, Simon P DiMaio, PhD, Michael R Marohn, MD, Michael A Choti, MD, Johns Hopkins Hospital

P361 PANCREATICOBILIARY ANOMALIES: A THIRTY EIGHT YEAR ANALYSIS. John K Lam, MD, Charles E Lucas, MD, Rebecca B Bachus, MD, Choichi Sugawa, MD, Wayne State University

P362 ERCP & LAPAROSCOPIC CHOLECYSTECTOMY: STONE, SPHINCTEROTOMY & STENTING Towhidul Alam, Prof of Surgery, Bangabandhu Sheikh Mujib Medical University

P363 SINGLE INCISION TRANS-UMBILICAL LAPAROSCOPIC SURGERY OF THE COLON AND RECTUM WITH CONVENTIONAL LAPAROSCOPIC SURGICAL INSTRUMENTS su shuodong, su yang, tian yu, kong jing, fan ying, Siwo Ernest Amos, the first hospital of mininally invasive and biliary surgery, shengjing hospital of China Medical University

P364 LAPAROSCOPIC DISTAL PANCREATECTOMY FOR PANCREATIC TUMORS Ching-Yao Yang, MD, I-Ruei Lai, MD PhD, Ming-Tsan Lin, MD PhD, Po-Huang Lee, MD PhD, Yu-Wen Tien, MD PhD, National Taiwan University Hospital

P365 SINGLE INCISION LAPAROSCOPIC SURGERY FOR DISTAL PANCREATECTOMY-THE FIRST REPORTED CASE IN THE WORLD Ching-Yao Yang, MD, Yu-Wen Tien, MD PhD, I-Ruei Lai, MD PhD, Ming-Tsan Lin, MD PhD, National Taiwan University Hospital

P366 HYBRID LAPAROSCOPIC-ASSISTED TRANSDUODENAL AMPULLECTOMY FOR BENIGN AMPULLARY TUMOR Ching-Yao Yang, MD, I-Ruei Lai, MD PhD, Ming-Tsan Lin, MD PhD, Po-Huang Lee, MD PhD, Yu-Wen Tien, MD PhD, National Taiwan University Hospital

P367 PROSPECTIVE EVALUATION OF CHOLANGIOGRAPHY IN SINGLE INCISION LAPAROSCOPIC CHOLECYSTECTOMY Melissa S Phillips, MD, Raymond Onders, MD, Jeffrey M Marks, MD, University Hospitals, Case Medical Center, Cleveland, OH, USA

P368 PRACTICE MAKES PERFECT: A SINGLE SURGEON EXPERIENCE OF 100 SLS CHOLECYSTECTOMIES Anthony M Gonzalez, MD FACS, Jennifer Escobar, Baptist Hospital of Miami, Miami, Florida

P369 FEASIBILITY OF LAPAROSCOPY-ASSISTED RESECTION FOR A HUGE MUCINOUS CYSTIC ADENOMA (MCA) OF THE PANCREAS. A CASE REPORT Yoko Wada, MD, Hisashi Kasugai, MD, Yusuke Takehara, MD, Yoshio Deguchi, MD, Hitoshi Satodate, MD, Jun-ichi Tanaka, MD, Shin-kei Kudo, MD, Showa university Northor Yokohama Hospital Digestive Disease Center

P370 COMPARATIVE ANALYSIS OF CLINICAL OUTCOMES BETWEEN LAPAROSCOPIC AND OPEN CENTRAL PANCREATECTOMY: CASE –CONTROL STUDY songcheol Kim, kibyung Song, Haeran Ha, Haeryun Seo, Jaebum Park, Yunghun Kim, duckjong Han, Yunbaik Choi, Department of surgery, Ulsan University College of Medicine and Asan Medical Center

P371 SINGLE INCISION LAPAROSCOPIC PANCREATIC SURGERY – EARLY EXPERIENCE Gadiyaram Srikanth, MCh, Neel Shetty, DNB, Manipal Institute of Liver and Digestive Diseases

P372 ISOLATED CAUDATE LOBE ABSCESSES – PRESENTATION AND LAPAROSCOPIC MANAGEMENT Pawan Kumar, MS, Munish Trehan, MS, Satpal S Virk, MCh, Dayanand Medical College & Hospital, Ludhiana, Punjab INDIA

P373 ABDOMINAL COMPARTMENT SYNDROME DUE TO CHYLOUS ASCITES SECONDARY TO HEPATIC HYDATIDOSIS - A CASE STUDY AND REVIEW OF LITERATURE Venkata K Kella, MD, Navalkishor Udgiri, Carrie Sims, MD FACS, University of Pennsylvania, 3400 Spruce street, Philadelphia. PA 19104

P374 SINGLE INCISION LAPAROSCOPIC CHOLECYSTECTOMY: OVERCOMING THE LEARNING CURVE Haris R Shaikh, MBBS FRCS, Mufaddal Mahersi, MBBS, Asad Abbas, MBBS, Hisham R Salahuddin, MBBS, Ziauddin University Hospital, Karachi, Pakistan

P375 “GALLBLADDER-FIRST” TECHNIQUE OF SINGLE INCISION LAPAROSCOPIC CHOLECYSTECTOMY (SILC): PROSPECTIVE STUDY IN 125 CASES Vincenzo J GRECO, MD, Andrew A GUMBS, MD FACS, Ziad ELRASSI, MD, Abe L FINGERHUT, MD FACS, Elie K CHOUILLARD, MD, On behalf of the Intercontinental Society of Natural Orifice, Endoscopic, and Laparoscopic Surgery (i-NOELS), Poissy, FRANCE

P376 HYBRID TRANSUMBILICAL CHOLECYSTECTOMY WITH NEEDLESCOPIC FUNDAL RETRACTION SAFE FOR ACUTE AND CHRONIC CHolecystitis Jennifer J Freeman, MD, Alexander Feliz, MD, Shawn Tsuda, MD, University of Nevada School of Medicine

P377 LAPAROSCOPIC ANATOMICAL LIVER RESECTION USING GLISSIONIAN APPROACH Jai Young Cho, MD PhD, Ho-Seong Han, MD PhD, Yoo-Seok Yoon, MD PhD, Keun Soo Ahn, MD, Ji Hoon Kim, MD, Seoul National University Bundang Hospital, Department of Surgery, Seoul National University College of Medicine, Korea

P378 LAPAROSCOPIC HEPATIC RESECTION IN THE SYMPTOMATIC GIANT LIVER CYST: 4 CASES Kee-Hwan Kim, MD PhD, Tae-Ho Hong, MD, Sang-Kwon Lee, MD PhD, Il-Young Park, MD PhD, Chang-Hyeok An, MD PhD, Jeong-Soo Kim, MD PhD, Uijeongbu St. Mary's Hospital, College of Medicine, The Catholic University of Korea, Uijeongbu, Republic of Korea

P379 CYSTIC ARTERY ELECTROCAUTERIZATION AS AN EFFICIENT, SAFE AND COST-EFFECTIVE ALTERNATIVE IN THE MINILAPAROSCOPIC CHOLECYSTECTOMY. GUSTAVO L CARVALHO, MD PhD, FLÁVIO A JÚNIOR, MD, JOSÉ S SILVA, STUDENT, CAMILA R CRUZ, STUDENT, DIEGO L LIMA, STUDENT, EDUARDO F CHAVES, STUDENT, REBECA G ROCHA, STUDENT, ADRIANO C SALES, STUDENT, UNIPECLIN, Faculty of Medical Sciences, University of Pernambuco; Recife, Brazil

P380 USE OF THE MIG AND 2.8 MM FLEXIBLE CHOLEDOCHOSCOPE Donald E Wenner, MD, Paul Whitwam, MD, Roswell Regional Hospital

P381 POSTOPERATIVE OUTCOMES OF THE MALIGNANCY AFTER LAPAROSCOPIC DISTAL PANCREATECTOMY Ho-Seong Han, MD PhD, Yoo-Seok Yoon, MD PhD, Jai Young Cho, MD PhD, Keun Soo Ahn, MD, Ji Hoon Kim, MD, Seoul National University Bundang Hospital, Department of Surgery, Seoul National University College of Medicine, Korea

P382 A COMPARISON OF SINGLE INCISION LAPAROSCOPIC CHOLECYSTECTOMY WITH THE GOLD STANDARD: IS THIS THE NEXT PROCEDURE OF CHOICE? Haris R Shaikh, MBBS FRCS, Mufaddal Mahersi, MBBS, Asad Abbas, MBBS, Hisham R Salahuddin, MBBS, Ziauddin University Hospital, Karachi, Pakistan

P383 DIFFERENT THERAPEUTIC MODALITIES FOR COMMON BILIER DUCT AND THE GALLBLADDER STONES (A PROSPECTIVE RANDOMISED STUDY) Servet Rüstü Karahan, Gökhan Tolga Adas, Bora Koç, Oguzhan Karatepe, Muhammet Battal, Ayhan AOacetue; zsoy, Okmeydani Education and Research Hospital, Department of Surgery

P384 LAPAROSCOPIC RESECTION OF PANCREATIC SOLID-
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P407 LAPAROSCOPIC CAUDATE HEPATECTOMY FOR CANCER Kuo Hsin Chen, MD, Hsin-An Chen, MD, Chao-Chiang Tu, MD, Jian-Ming Wu, MD, Kuo-Hsiang Cheng, MD, Shih-Horng Huang, MD PhD, General Surgery, Department of Surgery, Far-Eastern Memorial Hospital

P408 LAPAROSCOPIC COMPLETION CHOLECYSTECTOMY FOR RECURRENT SYMPTOMATIC CHOLELIATHISMS. CASE REPORT AND REVIEW OF THE LITERATURE Luis R Benavente-Chenals, MD, Brian J Dunkin, MD, Joanne M Chung, MD, Vadim Sherman, MD, Wega Koss, MD, Patrick R Reardon, MD, The Methodist Hospital Department of Surgery Methodist Institute for Technology, Innovation, and Education Houston, Texas 77030

P409 LAPAROSCOPIC LIVER RESECTION: LESSONS LEARNED FROM THE FIRST 105 CASES Alejandro Mejia, MD, Tiffany Anthony, MD, Stephen S Cheng, MD, The Liver Institute at Methodist Dallas

P410 THE LIGASURE VESSEL SEALING DEVICE IN 535 CONSECUTIVE INTESTINAL RESECTIONS R F Sing, DO, K W Kercher, MD, T Munsell, I Belyansky, MD, V B Tsirline, MD, B T Heniford, MD, Division of GI and Minimally Invasive Surgery, Carolinas Medical Center, Charlotte, NC

P411 HEATED VERSUS COLD INSUFFLATION FOR MINIMALLY INVASIVE ABDOMINAL SURGERY HAS MINIMAL BENEFIT ON PATIENT OUTCOMES Namdar Manouchehr, MD, MSc, Daniel W Birch, MD FRCS FAC, Xinhe Shi, Ghassan Hadi, MD, Shahzeer Karmali, MD FRCS, University of Alberta

P412 THE USE OF MINI LAPAROSCOPY IN A PERITONEAL DIALYSIS PATIENT WITH ACUTE CHOLECYSTITIS F A Morfesis, MD, Brian P Rose, BS, Owen Drive Surgical Clinic of Fayetteville, East Carolina University

P413 – Withdrawn

P414 SINGLE-PORT ACCESS SURGERY: THE EFFECT OF DIFFERENT PORTS ON THE OPERATIVE TECHNICAL SKILLS OF EXPERT LAPAROSCOPIC SURGEONS Georgios Paftanitis, MD, MSC, Sudip K Sarker, PhD DIC FRCSGlas FRCSEng FRCSGen, Shal-Jalal Sarker, PhD FRSS FPSI, Bijendra Patel, MS FRCS FRCS Gen, Bart’s and The London School of Medicine and Dentistry, Queen Mary’s University of London, Department of Upper GI Surgery, Bart’s and The Royal London Hospital

P415 A NOVEL LIVER RETRACTOR FOR UPPER ABDOMINAL LAPAROSCOPIC SURGERY Hiroshi Kawahara, MD PhD, Hideki Hayashi, MD PhD, Toshiyuki Natsume, MD PhD, Takashi Akai, MD PhD, Yoshishiro Nabeya, MD PhD, Kazufumi Suzuki, MD PhD, Mikito Mori, MD PhD, Daisuke Horibe, MD PhD, Hisahiro Matsubara, MD PhD, Research Center for Frontier Medical Engineering, Chiba University

P417 COMPARATIVE STUDY OF THREE REINFORCEMENT MATERIALS ON AN ENDO GIA™ RELOAD WITH TRI-STAPLE™ TECHNOLOGY Andrew J Duffy, MD, Dwight Bronson, MS, Jennifer Diederich, MS, Stephanie Marcucio, MPH, Nadia Neave, William Mulligan, ASE, Elizabeth Lalime, BS, Yale University School of Medicine, New Haven, CT, Covedien, North Haven, CT

P418 A PROSPECTIVE, SINGLE-CENTER INVESTIGATION OF THE SAFETY AND PERFORMANCE OF THE ENDO GIA TM RELOADS WITH TRI-STAPLETM TECHNOLOGY & ENDO GIA™ ULTRA UNIVERSAL STAPLERS IN A GASTRIC BYPASS PROCEDURE Samer G Mattar, MD, Frank Bendewald, MD, Sarah Dutkevitch, RN OCN, Heath Kemp, MBA CCRP, Indiana University

P419 A SILS-SPECIFIC CAMERA SYSTEM Jonathan A Schoen, MD, Zachary C Mills, Benjamin S Terry, Mark E Rentschler, PhD, University of Colorado at Boulder, University of Colorado at Denver

P420 THE CONCEPT & DEVELOPMENT OF A SINGLE PORT ACCESS DEVICE David S Edelman, MD, Doctor’s Hospital, Coral Gables, Florida

P421 ENDOSCOPIC CLIP-ASSISTED NASOENTERAL POST-PYLORIC FEEDING TUBE PLACEMENT Albert Amini, MD, John Watt, MD, John Kettelle, MD, University of Arizona College of Medicine

P422 LAPAROSCOPIC OVERHEAD ILLUMINATION SYSTEM INDUCES THREE-DIMENSIONALITY Akihiro Takai, MD, Yasutsubu Takada, MD, Satoshi Teramukai, MD, Hideki Motomura, Department of Surgery, Ehime University, Japan, Translational Research Center, Kyoto University Hospital, Japan, Faculty of Engineering, Ehime University, Japan

P423 IN VIVO ASSESSMENT OF AN ABSORBABLE AND NON-ABSORBABLE KNOTLESS BARBED SUTURE FOR LAPAROSCOPIC SINGLE-LAYER ENTEROTOMY CLOSURE: A CLINICAL AND BIOMECHANICAL COMPARISON AGAINST NON-BARBED SUTURE Philip Omotosho, MD, Basil Yurcisin, MD, Eugene Ceppa, MD, Jeffrey Miller, MS, David Kirsch, MS, Dana Portenier, MD, Duke University Medical Center

P424 A RANDOMIZED COMPARISON OF LAPAROSCOPIC, MAGNETICALLY ANCHORED, AND FLEXIBLE ENDOSCOPIC CAMERAS ON EX-VIVO AND IN-VIVO PERFORMANCE AND LOAD FOR LAPAROSCOPIC AND SINGLE INCISION SURGERY Nabeel A Arain, MD MBA, Erin M Webb, BS, Jeffrey Cadeddu, MD, Sara Best, MD, Richard Bergs, MS, Deborah Hogg, BS, Raul Fernandez, PhD, Thomas Rosnek, MD, Victoria Chang, BBA, Daniel J Scott, MD, University of Texas Southwestern Medical Center, Southwestcenter for Minimally Invasive Surgery, Dallas, Texas

P425 IMPLEMENTATION OF A PREOPERATIVE CHECKLIST IN LAPAROSCOPIC SURGERY REDUCES ERRORS AND IMPROVES EFFICIENCY Cas Van ’t Hul, MD, Alfonso Pomp, MD Professor, Esther Consten, MD PhD, Gregory Dokin, MD PhD, Inne Borel Rinkes, MD PhD Professor, Ivo Broeders, MD PhD Professor, New York Presbyterian Hospital, Meander Medical Center Amersfoort, University Medical Center Utrecht

P426 SINGLE INCISION LAPAROSCOPIC SURGERY-INNOVATIVE TRACTION/RETRACTION TECHNIQUES Gadiyaram Srikanth, MCh, Deepak Dubey, Neel Shetty, Manipal Institute of Liver and Digestive Diseases

P427 OPTICAL TROCAR PERITONEAL ENTRY IS SAFE AND COMPARES FAVORABLY TO THE OPEN TECHNIQUE Vedra A Augenstein, MD, Ryan C Phillips, Thomas C Yonce, Dimitrios Stefanidis, MD PhD FACS, Carolinas Medical Center

P428 SINGLE SITE LAPAROSCOPIC CHOLECYSTECTOMY WITH TRANSENTERIX SPIDER: A NOVEL DEVICE AND SURGICAL TECHNIQUE. Chan W Park, MD, Aurora D Pryor, MD, Duke Endosurgery, Department of Surgery, Duke University

P429 USE OF THE ENDOFLIP CATHETER TO SIZE SLEEVE GASTRECTOMIES AND GASTRIC IMPRICATIONS Daniel Cottam, MD, Sunil Sharma, MD, Christine Richards, MD, Mahendra Narwaria, MBBS, Surgical Weight Loss Center of Utah

P430 SINGLE INCISION LAPAROSCOPIC APPENDECTOMY USING ONLY ONE TROCAR WITH A NOVEL SOLUTION FOR LAPAROSCOPE DEFOGGING. Jonathan D Swayne, MD FACS, Matthew R Dixon, MD, Kaiser Permanente East Bay

P431 CONVERTING TO HIGH DEFINITION MAY IMPROVE OPERATIVE STRESS BUT DOES NOT IMPROVE OUTCOMES A Gridley, MD, T Kang, MD, J M Bouqui, RN, W S Richardson, MD, Ochsner Clinic Foundation

P432 SINGLE INCISION LAPAROSCOPIC SURGERY: WHAT DO PATIENTS REALLY WANT? Kalman Bencsath, MD, Gavin Falk, MD, Matthew Kroh, MD, R. Matthew Walsh, MD, Sricharan Chalikonda, MD, The Cleveland Clinic

P433 ARE MINILAPAROSCOPIC (NEEDLESCOPE) TROCARS OF
2011 Poster Listing

SAGES 2011 Scientific Session & Postgraduate Course

2MM AND 3 MM WITHOUT VALVE AND SEALING MEMBRANE A VAILABLE OPTION? GUSTAVO L CARVALHO, MD PhD, ADRIANO C SALES, STUDENT, JOSÉ SÉRGIO S SILVA, STUDENT, REBECA G ROCHA, STUDENT, DIEGO L LIMA, STUDENT, FLÁVIO A JÚNIOR, MD, UNIPÉCLIN, Faculty of Medical Sciences, University of Pernambuco; Recife; Brazil

P434 SINGLE INCISION LAPAROSCOPIC CHOLECYSTECTOMY VERSUS STANDARD LAPAROSCOPIC CHOLECYSTECTOMY IN CHILDREN. Khtianan H Naagareth, MD, Sagar S Gandhi, MD, Brent Roaten, MD PhD, Matthew Mancini, MD, Alfred P Kennedy, MD FACS, University of Tennessee Medical Center

P435 – Withdrawn

P436 PERITONEAL DIALYSIS CATHETER INSERTION: IS LAPAROSCOPY BENEFICIAL? Saad I Almulhim, MD FRCSC, Firas Shalak, MD, Salam Yazbeck, Ahmed AlKhuanaizi, MD, Saud Aramco Dhahran health center

P437 LAPAROSCOPIC RESECTION OF A LARGE LEFT PHEOCHROMOCYTOMA Samuel Wong, Anand Patel, MD, Kiran Amin, MD, Illinois Masonic Medical Center, Chicago, IL, Midwestern University Chicago College of Osteopathic Medicine, Downers Grove, IL

P438 STAGING LAPAROSCOPY FOR PATIENTS WITH ADVANCED GASTRIC CANCER Junya Kondo, MD, Masanori Tokunaga, MD, Yutaka Tanizawa, MD, Etsuro Bando, MD PhD, Taichi Kawamura, MD PhD, Yusuke Kinugasa, MD PhD, Hideyuki Kanemoto, MD, Katsuhiko Uesaka, MD PhD, Masanori Terashima, MD PhD, Shizuoka Cancer Center

P439 THE ROLE OF INCIDENTAL APPENDECTOMY IN THE SETTING OF CHOLECYSTECTOMY FOR SYMPTOMATIC CHOLELITHIASIS IN YOUNG WOMEN: A PROSPECTIVE COMPARATIVE STUDY Roy G Romero, MD, Jeffrey L Glass, MD, Karla C Russek, MD, Morris E Franklin Jr, MD, Texas Endosurgery Institute, Programa Multicéntrico ITESM/SSNL

P440 EFFECTIVENESS OF TELEMEDICINE IN A FORWARD COMBAT ENVIRONMENT Robert B Lim, MD LTC, Alberto H Abadia, MD MAJ, Juan L Martin, MD MAJ, Antonio D Colomo, MD CPT, Spanish Role IIe Hospital in Herat

P441 INCIDENCE AND ECONOMIC IMPACT OF AND RISK FACTORS FOR RESPIRATORY FAILURE AFTER ABDOMINAL SURGERY Jonathan D Bloom, MD, Santosh J Agarwal, BPharm MS, Mary G Erslon, RN MS MBA, Michael L Mestek, PhD, Douglas M Hansell, MD MPH, Ross D Segan, MD, Covidien

P442 LAPAROSCOPIC SURGICAL TREATMENT FOR ARTERIO-PORTAL FISTULA IN THE MESORECTUM WITH MARKED ASCITES Kazuo Tanoue, MD PhD FACS, Hidenobu Okino, MD PhD, Tomohiko Akahoshi, MD PhD, Yasuhiko Nozoe, MD PhD, Masamitsu kanazawa, MD PhD, IIshihiro Ueno, MD PhD, Ueno Hospital for surgery and gastrointestinal disease

P443 IMPROVED RESULTS WITH LAPAROSCOPIC APPENDECTOMY FOR PERFORATED APPENDICITIS Richard C Frazee, MD, Cassandra Cash, MD, Randall Smith, MD, Scott & White Clinic

P444 IS SINGLE INCISION LAPAROSCOPIC APPENDECTOMY FEASIBLE IN A DEVELOPING COUNTRY? A COMPARATIVE STUDY Haris R Shaikh, MBBS FRCS, Mufaddal Mahesri, MBBS, Asad Abbas, MBBS, Hisham R Salahuddin, MBBS, Ziauddin University Hospital, Karachi, Pakistan

P445 MEASURING SURGICAL RECOVERY IN THE ELDERLY USING PATIENT-CENTERED OUTCOMES: A SYSTEMATIC REVIEW Daniel Newman, BSc, Isabelle Vedel, MD PhD, Liane S Feldman, MD FACS FRCS, Simon Bergman, MD MSc FRCS, Lady Davis Institute for Medical Research, Jewish General Hospital Department of Surgery, McGill University/ Health Centre, Solidage-Universite de Montreal Research Group on Frailty and Aging, Steinberg-Bernstein Centre for Minimally Invasive Surgery

P446 ATTRIBUTABLE INCIDENCE AND COSTS OF POSOPERATIVE PULMONARY COMPLICATIONS FOLLOWING COMMON ABDOMINAL SURGICAL PROCEDURES Jonathan D Bloom, MD, Santosh J Agarwal, BPharm MS, Mary G Erslon, RN MS MBA, Douglas M Hansell, MD MPH, Ross D Segan, MD FCAS, Covidien

P447 RETROPERITONEOSCOPIC EVACUATION OF AN ENORMOUS RETROPERITONEAL HEMATOMA IN A TRAUMA PATIENT Konstantinos G Tsalis, PhD, George X Vrakas, MD, Zambia Kourkouritaki,, MD, Abraham Dimoulas, MD, George Roidos, MD, Dimitrios Raptis, MD, Charalampos N Lazaridis, PhD, D’ Surgical Department Aristotle University of Thessaloniki, Greece

P448 D-LOOP: A NEW INTRACORPOREAL KNOT TYING TECHNIQUE IN SINGLE-PORT LAPAROSCOPIC SURGERY Masahiro Ikeda, MD, Tanatueru Takahashi, MD, Seiji Sadamoto, MD, Kauuiinho Toyota, MD, Satoshi Shibata, MD, Tamaki Nakatani, MD, Manabu Kurayoshi, MD, Koichi Akayama, MD, Nobuki ishida, MD, Ryousuke Nakano, MD, Yusuke Sumi, MD, Kazunori Uchida, Higashiyohiroshima Medical Center

P449 USEFULNESS OF THE CURVED HANDLE INSTRUMENT IN SINGLE PORT SURGERY Hisea Aoki, MD, Toshiyuki Mori, MD PhD, Nobutsugu Abe, MD PhD, Osamu Yanagida, MD PhD, Tadahiko Masaki, MD PhD, Masanori Sugiyama, MD PhD, Department of Surgery, Koryin University, School of Medicine

P450 SUCCESSFUL LAPAROSCOPIC MANAGEMENT OF A PATIENT WITH MEDIASTINITIS SECONDARY TO ESOPHAGEAL PERFORATION Jose Luis Ibarrola-Calleja, MD, Mauricio Rodriguez-Gonzalez, MD, Miguel Eljore-Eljure, MD, Jaime Ordone, MD, hospital Angeles del pedregal in Mexico City

P451 INTENTIONAL PNEUMOPERITONEUM FOR SURGERY ON THE HOSTILE ABDOMEN stephen r rakower, MD FACS, Orange Coast Medical Center, Fountain Valley Medical Center

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P503 VIDEO-ASSISTED THYROIDECTOMY(MIVAT):REPORT ON THE EXPERIENCE OF THE LAST ONE HUNDRED CASES Istvan Gali, MD PhD, Miklos Czobel, MD, Zoltan Szabo, PhD, Gyorgy Weber, MD PhD, Telki Private Hospital, Budapest-Telki,
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Hungary, Department of Surgery, University Medical School of Szeged, Hungary, M.O.E.T. Institute San Francisco, CA, USA, Department of Surgical Research and Techniue University Medical School of Pécs, Hungary

P504 AN INSERTION METHOD OF PORTS TOWARD THE TARGET ORGAN WITH BEING CONSCIOUS OF COAXIAL SET-UP USING SINGLE PORT LAPAROSCOPIC SURGERY

Hidenori Fujii, MD, Yoshikuni Kawakami, MD, Toshiharu Aotake, MD, Naoki Nagayoshi, MD, Hitoshi Shirai, MD, Atsushi Ikeda, MD, Kei Hirose, MD, Makoto Yoshida, MD, Koji Doi, MD, Fumie Tanaka, MD, Yuki Hirose, MD, Department of Surgery, Fukui Red Cross Hospital, Japan

P505 TRANSUMBILICAL SINGLE-INCISION LAPAROSCOPIC SPLENECTOMY USING CONVENTIONAL INSTRUMENTS: A SINGLE SURGEON’S EXPERIENCE

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P506 METHOD OF EXPANDING APPLICATIONS IN SINGLE INCISIONAL LAPAROSCOPIC HEPATECTOMY: THE UTILITY OF RADIO WAVE PRE-COAGULATION AND SOFT COAGULATION

Mitsuo Miyazawa, MD PhD FACS, Masayasu Aikawa, MD PhD, Katsuya Okada, MD PhD, Yasuko Toshimitsu, MD PhD, Kojun Okamoto, MD PhD, Kenichirou Takase, MD, Shigeki Yamaguchi, MD PhD, Isamu Koyama, MD PhD, Saitama Medical University International Medical Center

P507 A BLEEDING CONTROL METHOD FOR THE STANDARDIZATION OF LAPAROSCOPIC HEPATECTOMY: COMPLETE LAPAROSCOPIC LATERAL SEGMENTECTOMY OF THE LIVER USING LAPAROSCOPIC BIPOLAR SOFT COAGULATION (BICLAMP)

Mitsuo Miyazawa, MD PhD FACS, Masayasu Aikawa, MD PhD, Yasuko Toshimitsu, MD PhD, Kojun Okamoto, MD PhD, Kenichirou Takase, MD, Katsuya Okada, MD, Shigeki Yamaguchi, MD PhD, Isamu Koyama, MD PhD, Saitama Medical University International Medical Center

P508 IDENTIFICATION OF ACCESSORY SPLEENS DURING LAPAROSCOPIC SPLENECTOMY IS SUPERIOR TO PREOPERATIVE COMPUTED TOMOGRAPHY

Vadim P Koshenkov, MD, Anil Pahuja, Zoltan H Nemeth, MD PhD, Jain Joseph, MD, Mitchell S Carter, MD, Alexander Abkin, MD, Morristown Memorial Hospital, Atlantic Health

P509 CLINICAL APPLIED STUDY OF ENDOSCOPIC THYROIDECTOMY

Ke Gong, MD, Qiuqiang Zhang, MD, Nengwei Zhang, MD, Yiping Lu, MD, Dexiao Du, MD, Xia Zhao, MD, Department of General Surgery, Beijing Shijitang Hospital, Beijing, China

P510 BILATERAL LAPAROENDOSCOPIC SINGLE SITE NEPHRECTOMY: A PEDIATRIC PRETRANSPLANT POSSIBILITY

Sara Marietti, MD, Nicholas Holmes, MD, Mavryln Decambre, MD, MPH, George Chiang, MD, Rady Children’s Hospital San Diego

P511 SPLENIC HYLUM HEMOSTATIC CONTROL DURING LAPAROSCOPIC SPLENECTOMY

Rosario Vecchio, MD, Emma Cacciola, MD, Eva Intagliata, MD, Salvatore Marchese, MD, Antonio Biondi, MD, Francesco Basile, MD, Dept of Surg University of Catania Italy

P512 PORTAL VEIN THROMBOSIS AFTER LAPAROSCOPIC SPLENECTOMY

Rosario Vecchio, MD, Emma Cacciola, MD, Eva Intagliata, MD, Salvatore Marchese, MD, Rossella Cacciola, MD, Guido Zanghi, MD, Francesco Basile, MD, Dept of Surg University of Catania Italy

P513 AGE DOES NOT PREDICT HIGHER MORBIDITY IN LAPAROSCOPIC ADRENALECTOMY

Horatiu C Dancea, MD, Vladan Obradovic, MD, Nicole Woll, PhD, Jennifer Sartorius, MS, Joseph Blansfield, MD, Geisinger Medical Center, Danville, PA

P514 THE INFLUENCE OF STAGING LAPAROSCOPY ON THE MANAGEMENT OF OESOPHAGO-GASTRIC JUNCTIONAL CANCER

Ali A Warsi, Mr Mr, Alex Wilkins, Dr, Richard Berrisford, Mr, Grant Sanders, Mr, Jo Rahamim, Mr, Tim Wheatley, Mr, Derriford Hospital, Plymouth, Devon, U.K.

P515 THE EFFECTIVENESS OF WARD BASED HIGH DEPENDENCY BAY (HDB) IN THE EARLY POST-OPERATIVE MANAGEMENT OF OESOPHAGECTOMIES AND GASTRECTOMIES

Ali A Warsi, Mr Mr, Alex Wilkins, Dr, Richard Berrisford, Mr, Grant Sanders, Mr, Jo Rahamim, Mr, Tim Wheatley, Derriford Hospital, Plymouth, Devon, U.K.

P516 ABDOMINAL WALL RECONSTRUCTION WITH RAMIREZ COMPONENT SEPARATION FOR A RECURRENT INCISIONAL HERNIA: LUCKY ON THIRTEENTH ATTEMPT!

Ali A Warsi, Mr Mr, Andrew N Kingsnorth, Professor, Department of General Surgery, Derriford Hospital, Plymouth, U.K.
Emerging Technology Oral Abstracts

ET001
A NEW MAGNETIC CAMERA-ROBOT ENABLING A MULTI-INSTRUMENT PROCEDURE IN SINGLE INCISION LAPAROSCOPIC SURGERY: PRELIMINARY EXPERIENCE
Giancarlo Basili (1), MD, Pietro Valdastri (2), PhD MScEE, Dario Pietrasanta (1), MD, Irene Mosca (1), MD, Massimiliano Simi (2), MScBE, Arianna Menciassi (2), Prof, Paolo Dario (2), Prof, Orlando Goletti (1), Prof General Surgery Unit, Pontedera Hospital, Health Unit 5 Pisa (1) - CRIM Lab, Research Center of Industrial BioEngineering, Scuola Superiore Sant’Anna, Pisa (2), ITALY

Background: Laparoscopic techniques have allowed surgeons to perform complicated intra-abdominal surgery with minimal trauma. Despite such a wide momentum currently surrounding “single access” procedures, this approach is considered to be a more complex procedure because it involves manipulating three articulating instruments through one access port. Concerning the vision system, a very promising approach to allow triangulation and to minimize both internal and external instrument collisions is represented by softly-tethered intra-abdominal cameras. Building on this background, we developed a softly-tethered miniaturized magnetic camera robot with an internal magnetic mechanism allowing for highly precise tilt control. Thanks to its reduced dimensions (12.7 mm diameter, 48 mm length), the proposed system can be introduced through a channel of a standard LESS multiport, thus maximizing the number of surgical tools that can be used at the same time. The main goal of ex vivo tests was to demonstrate the feasibility of performing a complex abdominal procedure by using the proposed magnetic camera robot through a standard SILS port.

Methods: A camera tilting module was developed, hosting a laparoscopic 500x582 CCD imager, LED-based illumination, two donut-shaped magnets, and a robotic mechanism to precisely adjust the tilt angle. This module is connected to a second one (12.7 mm diameter, 12 mm length), hosting a magnet to enable panning, by a 2 mm cable. Manual translation and panning are obtained by moving an external handle, while precise robotic tilting (0°-60° range, resolution<1°) is obtained by operating a pushbutton interface. A small bowel resection with intracorporeal anastomosis was performed by using a SILS port, introducing the camera robot through a 12 mm standard trocar. The experiments were carried out in an authorized laboratory, in accordance with all ethical considerations and the regulations related to animal experiments.

Results: The camera insertion procedure was simple and reliable thanks to the clearance between the robot and the internal lumen of the trocar. Magnetic link was established as soon as the camera robot was inserted inside the abdomen. The insertion of three different articulated instruments was effective and did not conflict with the camera robot and its cable. Bowel manipulation was carried out without too much difficulty as the camera allowed a complete exploration through different points of view. Thanks to fine robotic tilting, the specific site of operation was always centered during bowel resection and anastomosis, minimizing manual movements of the camera, thus enhancing image stability.

Conclusions: Single Incision Laparoscopic Surgery, also known as LESS surgery, represents a good compromise between standard laparoscopy and a totally scarless procedure. The proximity of the ports and the restricted degrees of freedom of movements often requires the crossing of the hands, and can lead to a frequent clashing of the laparoscopic instruments. Improved triangulation, instrument collision prevention, organ inspection from multiple sides, image stability during operation were some features confirmed by this preliminary experience. Applying the proposed device to standard multiport laparoscopic procedures would also reduce surgical invasiveness by eliminating the need for an endoscope-dedicated trocar.

ET002
ENDOSCOPIC INFRARED COAGULATION: BROAD RANGE OF NOVEL AND PRACTICAL UTILITY RANGING FROM INTERNAL HEMORRHOIDS TO NOTES
Elisabeth C McLemore, MD, Sonia Ramamooorthy, MD, Rudy Rai, MD, Junaid Siddiqui, MD, P Patrick Basu, MD, Mousab Tabbaa, MD, Michael S Epstein, MD University of California, San Diego

Objective: A novel endoscopic delivery system for infrared coagulation therapy has recently been designed and approved by the Food and Drug Administration for use in human subjects. The Precision Endoscopic Infrared CoagulatorTM has a broad range of therapeutic applications ranging from the endoscopic treatment of internal hemorrhoids, angiodysplasia, and hemostasis to a wide variety of applications in natural orifice transluminal endoscopic surgery (NOTES).

Infrared coagulation (IRC) is a well established treatment option for symptomatic internal hemorrhoids. Endoscopic infrared coagulation of internal hemorrhoids is an attractive alternative to the standard infrared coagulator as it can be performed at the same time as a colonoscopy or flexible sigmoidoscopy. Patients with symptomatic hemorrhoids are frequently encouraged to undergo endoscopic evaluation prior to treatment of hemorrhoid disease in order to eliminate other sources of bleeding from the colon and rectum. Currently, the non-surgical treatment options of internal hemorrhoid disease cannot be done without the use of an anal retractor, adequate lighting, and specialized instruments. The non-surgical treatment options are then generally performed at a different time and in a separate location than the endoscopic procedure. This leads to inefficiency in time and expense for the endoscopist, ancillary staff, and the patient.

Technique: The endoscopic infrared coagulator utilizes infrared radiation generated by a portable control box which is applied to the tissue through a flexible, fiber optic light guide (Precision Endoscopic Infrared CoagulatorTM, MAX Endoscopy Inc, Macedonia, OH). The light guide is placed through the colonoscope in the same chamber as other endoscopic instruments (biopsy forceps, snare cautery, etc.). The symptomatic internal submucosal hemorrhoidal vessels are treated in an overlapping, zig zag fashion of three to five 2 – 5 second pulse infrared radiation applications.

Methods: A retrospective review was performed from a prospectively collected database utilizing a standardized protocol in all patients documenting history and physical exam findings. A severity scoring system (range 0 – 4) for bleeding, prolapse, pain, itching, burning, and soiling was documented prior to and 6 weeks after endoscopic IRC.

Preliminary Results: Twenty six patients have undergone endoscopic IRC for predominately Grade II (68%) and Grade III (32%) symptomatic internal hemorrhoids. There were 10 female patients. The mean pre-treatment severity of symptoms from internal hemorrhoids score was 2.45 ± 1.7 and the mean 6 week post-treatment score was 0.40 ± 0.6 (p < 0.0001, Table 1). There have been no adverse events reported to date.

Table 1: Average Pre and Post-Treatment Symptom Scores

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Pre-Treatment Average Score</th>
<th>Post-Treatment Average Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burning</td>
<td>2.8</td>
<td>0.3</td>
</tr>
<tr>
<td>Prolapse</td>
<td>1.6</td>
<td>0.5</td>
</tr>
<tr>
<td>Pain</td>
<td>2.7</td>
<td>0.3</td>
</tr>
<tr>
<td>Itching</td>
<td>2.6</td>
<td>0.3</td>
</tr>
<tr>
<td>Bleeding</td>
<td>3.7</td>
<td>0.7</td>
</tr>
<tr>
<td>Soiling</td>
<td>1.3</td>
<td>0.4</td>
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</tbody>
</table>

Conclusions: The Precision Endoscopic Infrared CoagulatorTM provides the endoscopist with unparalleled visibility and efficiency allowing simultaneous treatment of symptomatic internal hemorrhoids at the time of diagnostic or therapeutic
endoscopy. After a single session of endoscopic IRC, patients have experienced a statistically significant improvement in their symptoms related to internal hemorrhoids. Endoscopic IRC has additional therapeutic utility in the endoscopic management of angiodysplasia, inflammation, hemostasis, and a variety of applications in NOTES.

ET003
LASER GUIDED LAPAROSCOPIC VENTRAL HERNIORRHAPHY
Danny A Sherwinter, MD, Matthew Dixon, MD Maimonides Medical Center Department of Minimally Invasive Surgery

Introduction: Excellence in laparoscopic ventral herniorrhaphy (LVH) requires precise mesh placement and meticulous trans fascial suture placement. Yet despite these demanding requirements, LVH is routinely performed using nothing more than visual estimations, leading to inadequate mesh coverage, inaccurate suture placement and may play an important role in the high recurrence rate seen with this technique. We describe our initial experience with a novel transabdominal laser projector which provides a virtual roadmap for mesh and suture placement in LVH.

Description of Technology: A laser projector designed to create a 2 dimensional “roadmap” indicating mesh and suture position is directed down a cannula and into the abdomen. By then bouncing the laser off a spherical convex mirror built onto the end of the cannula, the image is reflected back onto the peritoneal surface. The laser image is viewed intra-abdominally through the laparoscope and indicates: dead center, correct mesh overlap and trans fascial suture position. The intra-peritoneal laser map corresponds to printed markers on the mesh and allows for a high degree of mesh and suture placement accuracy.

Conclusions: This study introduces a laser guidance system designed to improve the accuracy of mesh positioning and suture placement in LVH. This device may be especially useful for novices and for training surgeons in LVH.

ET004
RECONSTRUCTION OF HUMAN ANATOMY USING 3-DIMENSIONAL PRINTING: AORTA AND LIVER MODELS
Rahul Gupta, MBBS MS DNB, Robert A Andrews, MD, Theodore Korelitz, Crispin Weinberg, PHD, Kung Justin, MD, Scott Johnson, MD, Daniel B Jones, MD MS FACS Beth Israel Deaconess Medical Center

Objective: To create clinically relevant 3 dimensional models from CT Scans.

Methods: With IRB exemption, our group acquired various de-identified images of interesting anatomic pathology in CT format. The images were electronically converted using BioCAD software to create usable 3 dimensional representations. Subsequently synthetic models were generated using different colored and textured resins to emphasize tissues/lesions.

Results: 3 –D model of Aortic Aneurysm.

Proposed Application of 3 D Modeling and Limitations

1 Surgical Planning and Preparation:
A: Aortic Aneurysm:
• Pre selection and sizing of graft material for endovascular aortic aneurysm repair
• Sizing of access sheaths for endovascular interventions
• Understanding the patient specific tortuosity of certain vessels in preparation for an endovascular intervention.
B: Hepatic resections and live donor Liver Transplantation.
• Anatomic-functional classification may provide valuable insight into hepatic vein dominance patterns.
• Creation of graft and remnant graft volume/body weight ratios using volumetric assessments and virtual resections.
• Assessment of congestion volumes.
• Planning of bilio-enteric anastomosis after klatskin resection.

2 Communication:
• Enhance the ability of the physician to communicate effectively with patients regarding their personal pathology.

3 Education and Testing:
• The use of high resolution models in preoperative discussion with residents resulting in enhanced operative experience and improved co-ordination during surgery.
• Acquisition of anatomical knowledge in a real time environment simulated preoperatively by 3-D models. This can be used as a testing tool or adjunct to contemporary methods.

4 Limitations: Color texture contrast and fine structures are more difficult to replicate secondary to limitations of the printing technology and resins. For example, current printing technology allows for only two resins to be utilized during one printing session. So models that require a greater level of detail often require the model to be “printed” in two or more sessions, and then assembled to make the final product. Multiple tissue depictions therefore increase potential rendering inaccuracies.

Conclusions
• 3-D printing can be used to create personalized patient specific
Emerging Technology Oral Abstracts

ET005

NEW DEVICE FOR FLEXIBLE LAPAROSCOPY WITH STRENGTH AND STABILITY: SPIDER® VERTEBRAL ENDOMECHANICAL SYSTEM

Juan-Carlos Verdeja, MD South Miami Hospital

Objective of the device: Initial technologies for single incision laparoscopy have primarily been access devices with multiple instrument ports crowded together for “inline” operation without the triangulation usually achieved via multiple trocars at the abdominal wall. The initial version of the SPIDER® surgical system (TranEnterix, Durham, NC) approved in 2008 represented a promising new development with intra-abdominal triangulation with flexible, steerable instrument channels. However, the goal of providing flexibility with significant force strength remains elusive. The newly designed technology of the SPIDER Vertebral Endomechanical device was designed with the objective of providing significant force strength while maintaining the unique capabilities of flexible instrumentation.

Description of technology and method of use/application: The fundamental technologies employed are two, endomechanical arms controlled via wires, and a novel, vertebral channel to steer flexible instrumentation.

3. Preliminary Results

The new vertebral technology was evaluated in a porcine model via a cholecystectomy and a nephrectomy. Both procedures were successfully completed in the porcine model, and several device capabilities were observed in terms of strength (lifting of porcine kidney and significant traction force on tissue).

Current accepted technique of conventional 4-port laparoscopic cholecystectomy requires simultaneous cephalad traction of the fundus and lateral traction of the infundibulum of the gallbladder, in order to satisfactorily expose the critical structures. The device was able to perform these functions as well as allow for the “peeling” motion needed to expose the cystic duct and artery. Similarly, dissection of the kidney during laparoscopic nephrectomy requires strength and precision while dissecting the major structures (ureter and vessels). The vertebral endomechanical arms permitted both the elevation and “rolling” motion necessary to achieve this. The design of the device allows flexibility while maintaining strength and precision.

4. Conclusions and Future Directions

The novel design of vertebral segments appeared to provide strength in utilizing flexible, catheter-like, instruments in manipulating tissue to perform surgical tasks in a porcine model. The capabilities to blunt dissect, provide significant traction for tissue dissection, and lift large specimens were all observed in lab usage. The concept of providing truly flexible yet strong instrumentation in laparoscopy is a meaningful advance with potential to merge the tools and unlimited angles of flexible endoscopy with the technique and surgical work needs of laparoscopy. Certainly, further study is needed to evaluate the intriguing potential presented by this novel flexible laparoscopic system.

ET006

ENDOSCOPIC SUBMUCOSAL DISSECTION OF GASTRIC LESION BY USING A MASTER AND SLAVE TRANSLUMINAL ENDOSCOPIC ROBOT (MASTER): A SURVIVAL STUDY.

DAVIDE LOMANTO, MD PhD FAMS Surg, SOO JAY PHEE, PhD, RAJAT GOEL, MBBS MDS, ANDY PRIMA KENCANA, B Eng, SOON CHIANG LOW, PhD, KHEK YU-HO, MD Dep.of Surgery and Dept. Of Medicine, Y L L School of Medicine, National University of Singapore; School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore

Endoscopic Submucosal Dissection (ESD) was first performed in Japan for en bloc curative resection of early gastric cancers. Currently, ESDs are mostly performed by using a standard endoscope with endoscopically developed knives. There are limited degrees of freedom for endoluminal maneuvers of instruments deployed through accessory channels of the
endoscope. Performing ESD thus requires a tremendous amount of skill on the part of endoscopist and makes it prone to procedural complications. More dexterous endoscopic equipment is needed to make the performance of ESD easier and safer. This study explored the feasibility of using a highly dexterous Master and Slave Transluminal Endoscopic Robot (MASTER) to mitigate the technical challenges of the performance of ESD in a survival study. Five female pigs (32.4-36.8 kg) underwent ESD using the MASTER. All the animals survived for 2 weeks and were then euthanized and necropsy was performed. Main Outcomes measured were completeness of resection, time for resection, procedure related complications, survival at 2 weeks, secondary outcomes measured were peritoneal contamination, intra-abdominal abscess. Operative technique: Gastric lavage was done first through the normal gastroscope introduced through the overtube. The lesion was then marked with IT diathermic knife, and was elevated with submucosal injection of a mixture of 40 ml normal saline with 0.5 ml Methylen blue. The conventional endoscope was then removed and a dual-channel therapeutic endoscope with the MASTER mounted was introduced into the stomach. By using the robotic grasper to hold the elevated lesion, a peripheral mucosal incision was made by using the monopolar electrocautery hook at a circumferential margin of 1cm from the demarcated area. Once completed, the mucosal flap was lifted with the grasper. Dissection was executed in a single lateral direction until completion, and the entire lesion was excised en bloc, the stomach was inspected for any perforation and bleeding. The procedure was successfully completed in a mean time of 21.8 min (range 6-39 min) the mean dimensions of the lesions was 77.14mm (range 25-104.6). 1pig had intra-operative small perforation that was identified and successfully clipped. After 2 weeks survival, the animals underwent gastroscopy and subsequently euthanasia. All lesions were healed at gastroscopy and at necropsy, there was no peritoneal contamination or abscess and the stomach was completely healed which was confirmed microbiologically and pathologically. In conclusion the MASTER exhibited good grasping and cutting efficiency throughout. Surgical maneuvers were achieved with ease and precision. There was no incidence of excessive bleeding or stomach wall perforation. The study demonstrated for the first time that the MASTER could effectively improve the performance of ESD shortening time and complications.

**ET007**

LETO MEDICAL’S™ CONTINENT OSTOMY SYSTEM - A PRECLINICAL UPDATE OF A NOVEL ELECTRICAL STIMULATION DEVICE TO RESTORE CONTINENCE CONTROL TO INDIVIDUALS WITH COLOSTOMY

Jaime Cavallo, MD, John Minasi, MD, James Schneider, MBA, Seung Hyuk Baik, MD, Alyssa Fajardo, MD, Jaime Cavallo, MD, John Minasi, MD, James Schneider, MBA, Seung Hyuk Baik, MD, Alyssa Fajardo, MD, Logan McKenna, BS, Michael Talcott, DVM, James Fleshman, MD Leto Medical, LLC (Fernandina Beach, FL) and Washington University School of Medicine in St. Louis, Division of General Surgery - Colon & Rectal and Division of Comparative Medicine (St. Louis, MO)

1. Objective: Leto Medical’s™ Continent Ostomy System (COS) is a system of products based on an innovative electrical stimulation device that will restore continence control to individuals with a colostomy.

2. Description of the technology: The COS electrical stimulation device will actively control the terminal segment of the colon and prevent the elimination of feces caused by normal colonic motility. In addition to the stimulation device, the COS will have a disposable ostomy sealing device that will capture and deodorize any “passive” drainage (typically, small amounts of feces and mucus) that may occur not as a result of colonic activity but as a result of passive drainage from effects like gravity and changes in intra-abdominal pressure.

The product iteration of the electrical stimulation device currently being tested in preclinical studies includes:

- 2 pairs of leads implanted in the colon wall from the serosal side; a proximal sensing lead pair and 2 pairs of more distally positioned stimulating leads
- A smart phone-sized external pulse generator (EPG) connected to the leads and carried in the pocket of a protective vest
- A programmer that allows for wireless programming of and data collection from the EPG

When active, the EPG delivers electrical stimuli to the distal two pairs of electrodes in a sequentially retrograde fashion. Stimuli can be delivered per a programmable schedule, as a response to intrinsic triggers, or as a combination of the two. Fecal evacuation occurs naturally when the system is inactive.

3. Preliminary results: Multiple rounds of acute animal experiments have been completed. The data from these experiments has been used to develop the animal model for a survival study, to refine the design of the leads and EPG specific to this model, and to identify the initial sensing and stimulation parameters to be tested in a survival animal study.

The survival animal study is currently in progress at the time of this submission.

4. Future directions: The means of managing a colostomy has remained virtually the same for decades. The aim of the COS is to restore continence control to individuals with a colostomy. Continued progress and validation will lead to clinical trials.

**ET008**

INTRAOPERATIVE REAL-TIME ULTRASOUND-ELASTOGRAPHY OF THE PANCREAS: A METHOD FOR “VISUAL PALPATION”

Paolo Abitabile, MD, Christoph A Maurer, Prof Department of Surgery, Kantonsspital Liestal, CH-4410 Liestal, Switzerland

Objective: First experience with intraoperative real time ultrasound-elastography (USEG) in pancreatic surgery is reported.

Methods: Real-time elastography is based on standard diagnostic ultrasound equipment. Backscattered signals along the longitudinal axis of the ultrasound transducer are analysed. The time-delay at compression and decompression (expansion) of tissues is measured and color coded. A stiffer and harder tissue element generally experiences less elasticity than a softer one. Elastic tissue (green) can be visually distinguished from non-elastic (blue) tissue. The elasticity index (EI) determines the relative elasticity of the area of interest compared to the elasticity of the surrounding tissue area.

Results: In two patients with painless jaundice and pancreatic double duct sign at ERCP, but without cholelithiasis, the presence of a periampullary cancer was for debate. Even though all additional investigations (CT, MRI, endoscopy, brush cytology, CA 19.9) were not suspicious for malignancy, we preferred to force diagnosis by exploratory laparotomy, intraoperative ultrasound and elastography.

In patient 1, USEG revealed homogeneous, soft, mainly green colored (EI=0.38) pancreatic tissue with exception of the periampullary area: a well-demarcated, elastographically blue area (EI=0.09) of 1.2cm in diameter was identified, that was 4.2 times harder than the other pancreatic tissue and corresponding to a palpable small intrapancreatic node. This area was not clearly depicted by B-mode sonography due the biliary drain, but was also identified by the lack of contrast enhancing.

In patient 2, diffuse induration of pancreatic head was found. USEG showed a homogeneously blue pancreatic head that was 4 times harder (EI=0.07) compared to a homogeneously green pancreatic body and tail (EI=0.28).

In both cases, USEG findings were easily and repeatedly reproducible.

Pancreatic head specimens revealed a small periampullary ductal adenocarcinoma (patient 1) and a diffuse ductal adenocarcinoma of pancreatic head (patient 2), respectively.
Conclusions: USEG is a promising new technology that permits to visualize tissue elasticity and to quantify relative tissue consistency. USEG seems to be easy, safe and reliable. Intraoperative USEG might help to detect solid tumors of the pancreas and to make appropriate intraoperative decisions in pancreatic surgery.

ET009
A NOVEL SNAKE ROBOT FOR NOTES Michael M Awad, MD PhD, Shyam Thakkar, MD, Howie Choset, PhD Washington University in St. Louis, Drexel University, Carnegie Mellon University

OBJECTIVE: The emergence of laparoendoscopic technology has revolutionized the practice of surgery over the last 20 years. However, many complex procedures are still performed in an open fashion because of limitations of this technology. Furthermore, natural orifice transluminal endoscopic surgery (NOTES) remains out of reach of most clinicians because of a lack of facilitative tools. Robotics promises to usher in a new era of advanced minimally invasive techniques. An ideal robotic system is one that would allow for multi-quadrant access, a stable platform, small profile, while all along providing optimal visualization and appropriate dexterity. Here we describe the development of a novel snake-like robot that meets all of these criteria. First developed for minimally invasive cardiac surgery, the MICS robot was used in this pilot study to successfully perform a NOTES transrectal distal pancreatectomy in a porcine model.

TECHNOLOGY DESCRIPTION: We have developed several versions of snake robots - highly articulated devices that can use their many internal degrees of freedom to navigate tightly packed spaces. Initially designed for search and rescue operations in collapsed buildings, we recently developed a snake robot for minimally invasive cardiac surgery (MICS). The MICS robots can be viewed as a teleoperated probe consisting of a series of links that can both drive in intercavitary spaces and assume the shape of its surroundings. A key feature of the probe, unlike all other comparable robots, is that it uses conventional actuuation technology which ensures its reliability and robustness. Furthermore, the links of the probe can be made out of almost any material, including plastic, allowing it to be "disposable". There are three working channels allowing for passage of two working instruments and an endoscope through the probe.

PRELIMINARY RESULTS: To date, the MICS robot has been tested in 30 pigs, two cadavers and three cardiac ablation patients. In the current study, we used the MICS robot to perform a NOTES transrectal distal pancreatectomy. With the animal in prone position, a rectotomy was performed through which an overtube was inserted. A retroperitoneal dissection was performed to gain access to the distal pancreas with the robotic probe. Two 5mm abdominal ports were also used – one for laparoscopic monitoring and another for retraction when necessary. The distal pancreatectomy was performed using endoscopic biopsy forceps and needle knife cautery. The specimen was retrieved transrectally through the use of an endoscopic snare. The total procedure time was 118 minutes.

CONCLUSIONS/FUTURE DIRECTIONS: The MICS robot was able to perform a successful complex NOTES procedure with only minimal laparoscopic retraction assistance. The right upper, left upper and left lower quadrants were all easily visualized and accessible throughout the procedure. The benefits of the current platform over other laparoscopic and robotic systems include the stability of the system, its low profile, multi-quadrant accessibility, and the need for only a 12mm enterotomy or incision. Enhancements to optics and instrumentation will help to further increase the usability of the platform. Future indications may include transgastric NOTES approaches, endoluminal procedures and single port applications.

ET010
A NOVEL ENDOSCOPIC ESOPHAGEAL RECONSTRUCTION TECHNIQUE Silvana Perretta, MD, James Wall, MD, Bernard Dallemagne, MD, Jacques Marescaux, MD FRCS FACS IRCAD Department of Digestive and Endocrine Surgery, University of Strasbourg

Objective: Esophageal reconstruction presents a significant clinical challenge in patients ranging form neonates with long-gap esophageal atresia to adults after esophageal resection. Both gastric and colonic replacement conduits carry significant morbidity. As emerging organ sparring techniques are established for early stage esophageal tumors, less morbid reconstruction techniques are warranted. Having developed expertise in esophageal mural tunneling for the purposes of endoscopic Heller’s myotomy, here we show a novel endoscopic approach for esophageal lengthening and reconstruction in a porcine model. Methods: A model of esophageal defect was created in a pig (30-35Kg) under general anesthesia by thorascopically transsecting the esophagus above the gastro-oesophageal junction. The reconstruction technique involved bilateral submucosal endoscopic lengthening myotomies (BSELM) with a magnetic compression anastomosis (MAGNAMOSIS™) using endoscopically delivered magnetic rings. The first ring is delivered transorally to the proximal esophageal segment. The second ring is placed through a minimal invasive gastrotomy and delivered retrograde with endoscopic assistance. The MAGNAMOSIS™ rings automatically align and join when placed within a few centimeters of one another. The gradual necrosis between the rings forms a compression anastomosis over a period of days. Results: The technique was feasible in the pig model. The BSELM approach lengthened the esophagus 1cm for every 2cm length of myotomy. The myotomy targeted only the inner circular fibers of the esophagus with preservation of the longitudinal layer to protect against long-term dilation and pouching. Conclusions: Emerging endoscopic capabilities are enabling complex endoluminal esophageal procedures. BSELM is a novel and technically feasible approach to esophageal lengthening and reconstruction. Further survival studies are needed to establish the safety and efficacy of this technique.

ET011
INTRAOPERATIVE DISTENSIBILITY AS MEASURED USING A NOVEL FUNCTIONAL LUMINAL IMAGING PROBE: ENDOFLIP Andrei Ilcyszyn, MBBS BS Honors MRCSIEng, Abrie Botha, MD FRCS Department of Upper GI Surgery, St Thomas’ Hospital, London, UK

Objective of the Device: Several mechanisms have been proposed to explain the effectiveness of laparoscopic anti-reflux surgery (LARS), including esophageal lengthening, changing intra-esophageal pressure, hiatal repair and addition of an extra-anatomical wrap. Although LARS is associated with good long-term outcomes there is still a significant number of patients with post-operative dysphagia. Various intraoperative measures have been proposed to alleviate this but none has been widely accepted.

Recent technological advances (EndoFLIP system, Crospon Ltd., Galway, Ireland) allow real-time measurement of the diameter, cross-sectional area and distensibility, giving the potential to analyze the anatomic and physiological properties of the gastroesophageal junction (GEJ) intraoperatively. We used this novel physiological device to measure distensibility of the GEJ during LARS to determine the critical components of the operation.

Description of the Device: The EndoFlip system comprises a balloon-tipped catheter connected to a display and recording unit. The system is designed so that the sensing assembly...
straddles the GEJ. The balloon contains 16 impedance sensors spaced 5mm apart and a single solid state pressure sensor in a 0.2% saline solution. A weak alternating current is passed within the balloon and measurement of the impedance between the electrodes allows calculation of the cross sectional area at that electrode. Further calculation using intra-balloon pressure allows calculation of the distensibility and compliance.

**Preliminary Results: Methods:** Laparoscopic Nissan fundoplication (LNF) was undertaken in a standard manner. Measurements were taken at 30ml and 40ml balloon distensions after induction of anesthesia and pneumoperitoneum, dissection of the crura, after crural repair and after formation of the wrap. Data was analyzed sequentially using a paired t test, P<0.05 was regarded as significant.

**Results:** 9 patients were studied (6 male). Average age was 44.6 (32-67). 7 patients underwent primary LNF, 2 patients underwent revision for recurrent reflux symptoms.

LNF reduced the average distensibility of the GEJ at 30ml balloon distension from 2.01mm2/mmHg to 0.916mm2/mmHg (p=0.045) and at 40ml from 2.91mm2/mmHg to 1.10mm2/mmHg (p=0.007).

**Conclusion:** The EndoFLIP system appears to be safe and effective for intraoperative usage. It gives a new insight into the physiological mechanisms underlying LARS. Using the EndoFLIP system we have demonstrated that LNF results in an immediate reduction in OGJ distensibility, with reduction of hiatus hernia and repair of the crura being the main mechanism whereby this is achieved. Further investigation will be undertaken assess the clinical implications of this finding and also to evaluate the usage of EndoFLIP in other disorders of the GEJ.

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**ET013**

**A NOVEL ENDOSCOPIC SURGICAL DEVICE FOR REAL-TIME MEASUREMENT OF HERNIA DEFECTS AND OTHER ANATOMIC GEOMETRIES**

Gyusung Lee, PhD, Ivan M George, Adrian Park, MD University of Maryland

**Objective of the technology or device.** At the University of Maryland we are developing a novel device (US patent pending) that will allow surgeons to measure the size and shape of a hernia defect so that mesh size and potentially shape can be more accurately estimated than currently possible. This device acquires a probe’s tip location as it makes contact with points of interest. This instrument is designed as well to provide measurement and visualization of two-dimensional or three-dimensional geometries. The device also is designed to perform various calculations applicable in other clinical applications, such as moving beyond the methodology of location to the outcome of determining points of fixation.

**Description of the technology and method of its use or application.** This system consists of four essential components: probe, tracking sensor unit, control unit, and measurement and post-processing unit. The probe—a long, rigid object to which the tracking sensor is attached—is partially introduced into the human body for measurement and visualization. As the probe’s distal tip gently touches specific anatomical landmarks of interest, our system permits identification of the tip’s location in space. The user holds the probe by a proximally located handle. The tracking sensor unit may be composed of a single sensor or array of markers. A variety of existing motion tracking systems can be used to calculate the location information of the tip. The control unit is an actuation device that regulates power to the tracking sensor and/or the measurement and post-processing unit. The measurement and post-processing unit is composed of an array of devices such as computers, monitors, data delivery and processing hardware and software. This unit measures the tracking sensor location, calculates the probe tip location in addition to various kinds of distance and geometries from the probe tip’s movement trajectories, visualizes the probe tip movement trajectories, and performs post processing of probe tip movement data, providing additional information including the circumference area of an anatomical object and the size of the hernia defect.

**Preliminary results available.** The feasibility of this device has been initially confirmed. Using an optical motion tracking system as well as an active miniature magnetic tracking system, we measured and visualized several geometries placed within a laparoscopic trainer box. We introduced the tracking probe...
ET014

NOVEL TECHNIQUE FOR SIGNIFICANT COST REDUCTION IN LAPAROSCOPIC INGUINAL HERNIA REPAIR

dmitry nepomnyashy, MD, anton galitsky, MD, desmond birkett, MD lahey clinic

OBJECTIVES: Growth in healthcare costs is a significant concern for sustainable healthcare delivery around the world. In our institution, we have seen a 50% -100% rise in the costs of operating room supplies over the last decade. For the first time, we were made aware of the actual costs of surgical supplies for all our procedures. In an effort to reduce costs, we have developed a novel technique in laparoscopic inguinal hernia repair. We have no conflicts of interest with any of the supplying vendors in this report.

METHODS: The video shows the following technique. Total extra-peritoneal repair (TEPP) with 3D BardTM mesh using a Gelport Balloon 12mm Trocar and two 5mmx55 trocars from AppliedTM. Camera dissection is used to create the pre-peritoneal working space. We apply a long suture to the mesh prior to insertion. The mesh is positioned appropriately and a transfacial suture passer is used to attach the mesh in position. Local anesthetic is instilled into the working space and it is allowed to collapse under direct vision. We have eliminated the use of Triangular Balloon, Oval Dissection Balloon and Protack - CovidienTM.

RESULTS: The average total supply cost per laparoscopic inguinal hernia was $1,358.77. By following the new technique, we were able to reduce our total cost to $542.49 per case.

CONCLUSIONS: As part of an effort to contain growing supply costs, we have been able to reduce the cost associated with laparoscopic inguinal hernia repair by 60% with the technique described. It is likely that many other opportunities for cost containment remain as total supply costs in the O.R. at Lahey Clinic have not decreased but at least have stabilized. (Figure 1).

ET015

USE OF A NOVEL ENDOSCOPIC SUTURING DEVICE TO OVERSEW A LARGE MARGINAL ULCERATION

Pichamol Jirapinyo, Christopher C Thompson, MD Brigham and Women's Hospital, Boston, MA, USA

Objective: Severe marginal ulceration is traditionally treated surgically. Here we describe the use of a novel endoscopic suturing device to oversew a large stomal ulcer and avert a complicated surgical revision.

Technology Description: Ulcer oversewing was performed using a novel endoscopic suturing system (Figure 1). The system attaches to a double-channel endoscope and utilizes a curved needle that allows the placement of a variety of stitch patterns, including running or interrupted, with a single insertion of the endoscope.

Methods: This is the case of a 71-year-old male with recurrent GI bleeding, starting one week following Roux-en-Y gastric bypass (RYGB). A large marginal ulceration, roughly 1/3 the stomal circumference, was found on upper endoscopy (Figure 2A). He was subsequently admitted five times for GI bleeding and required over 20 blood transfusions. He again presented with melena and was transferred to our center for further management. At presentation, he appeared nontoxic with stable vital signs. Abdominal exam was benign. He was a poor surgical candidate due to a complicated medical history that included coronary artery disease with multiple stents, peripheral vascular disease with aorto-bifemoral bypass, DM, COPD, and OSA. A decision was made to treat his ulcer using a novel endoscopic suturing system. Video records were maintained.

Results: Two interrupted stitches were successfully placed into the tissue surrounding the ulcer bed using 2-0 polypropylene monofilament sutures. Complete ulcer closure was achieved (Figure 2B). Tisseel fibrin glue was applied to the sutured area. The procedure was performed under general anesthesia and took less than 25 minutes. It was well tolerated and there were no complications. At 6 weeks post procedure, the patient reported complete resolution of his symptoms and repeat upper endoscopy demonstrated complete ulcer resolution (Figure 2C).

Conclusion: This case demonstrates the technical feasibility of stomal ulceration oversewing using a novel endoscopic suturing device. This technique may provide an effective, minimally-invasive treatment alternative to operative intervention. Further studies with this system are currently underway.

Figure 1. A novel endoscopic suturing system.

Figure 2. Endoscopic views showing stomal ulceration. A. Before endoscopic oversewing. B. At completion of procedure. C. At 6-week repeat upper endoscopy.
ETP001 NEW TECHNOLOGY FOR COLORECTAL SURVEYS Nathalie Mantilla, MD, Ariane Abcarian, MD, Jose Cintron, MD, Marc Singer, MD, Herand Abcarian, MD, University of Illinois at Chicago, Chicago, IL. Northshore Medical Group, Highland Park, IL.

ETP002 AN INNOVATIVE 3D TEACHING MODEL DESIGNED TO HELP PATIENTS BETTER UNDERSTAND THE ANATOMY OF THE PELVIC FLOOR Nathalie Mantilla, MD, Ariane Abcarian, MD, Aracely Zavala, RN, Russell Pearl, MD, Cybil Corned, MD, Herand Abcarian, MD, University of Illinois at Chicago, Chicago, IL. Northshore Medical Group, Highland Park, IL.

ETP003 LAPAROSCOPIC ASSESSMENT AND HISTOLOGY OF HUMAN ACELLULAR DERMIS (STRATTEX®) IN PD PATIENTS WITH ABDOMINAL WALL HERNIAIS Brian P Rose, ScB, Florias A Morfesis, MD, Owen Drive Surgical Clinic ofayetteville

ETP004 LAPAROSCOPIC COLECTOMY FOR SINGLE PORT SURGERY IN COLORECTAL CANCER. INITIAL EXPERIENCIA IN TWO INSTITUCION IN COLOMBIA Rafael garcia duperly, md, Fernando Arias amezquita, md, evelyn dorado, md, eduardo londoño, md, fundacion santa fe bogota, clinica reina sofia

ETP005 A COMPARATIVE STUDY OF ROBOTIC VERSUS CONVENTIONAL OPEN MODIFIED RADICAL NECK DISSECTION FOR THE PAIN SYMPTOMS WITH LAPAROSCOPIC NECK NODE METASTASIS Sang-Wook Kang, MD, So Hee Lee, MD, Haeng Rang Ryu, MD, Woong Youn Chung, MD, Department of Surgery, Yonsei University College of Medicine

ETP006 INITIAL EXPERIENCES OF ROBOT-ASSISTED POSTERIOR RETROPERITONEOSCOPIC ADRENALECTOMY (PRA); SINGLE PORT ACCESS Sang-Wook Kang, MD, Jae Hyun Park, MD, Kyu Hyung Kim, MD, Woong Youn Chung, MD, Department of Surgery, Yonsei University College of Medicine

ETP007 A COMPARATIVE STUDY FOR THE SURGICAL OUTCOMES OF LAPAROSCOPIC ADRENALECTOMIES (TRANSVERSEL APPROACH VS. POSTERIOR RETROPERITONEAL APPROACH) FOR SMALL ADRENAL TUMORS Sang-Wook Kang, MD, Jong Ju Jeong, MD, Woong Youn Chung, MD, Department of Surgery, Yonsei University College of Medicine

ETP008 DEVELOPMENT OF ROBOT-ASSISTED LAPAROSCOPIC ULTRASONOGRAPHY Peter D Peng, MD, Caitlin M Schneider, BS, Russell H Taylor, PhD, Christopher J Hassier, PhD, Simon P DiMaio, PhD, Michael R Marohn, MD, Michael A Choti, MD, Department of Surgery, Johns Hopkins Hospital; Department of Computer Science, Johns Hopkins University; Intuitive Surgical Inc.

ETP009 ESTABLISHMENT OF LOCAL IMMUNOTHERAPY AND STEM CELL REGENERATION THERAPY FOR INTRA ABDOMINAL SOLID TUMOR BY MULTI PIERCING SURGERY (NEEDLESCOPIC SURGERY WITH NOTES); POSSIBILITY OF ULTRA-MINIMALLY INVASIVE SURGERY BY NEEDLE-TYPE ROBOTS Takeshi Ohdaira, MD, Norifumi Tsutsumi, MD, Megumu Mori, MD, Kyo Jo, MD, Makoto Hashizume, MD, Department of Advanced Medicine and Innovative Technology, Kyushu University Hospital

ETP010 ESTABLISHMENT OF GASTRECTOMY AND HEPATECTOMY BY MULTI PIERCING SURGERY (NEEDLE SURGERY WITH NOTES) USING 3-MM DIAMETER DEVICES: ULTRA MINIMALLY INVASIVE SURGERY ALLOWING THE TRIANGULAR FORMATION THAT REPLACES SINGLE PORT SURGERY Takeshi Ohdaira, MD, Norifumi Tsutsumi, MD, Megumu Mori, MD, Kyo Jo, MD, Makoto Hashizume, MD, Department of Advanced Medicine and Innovative Technology, Kyushu University Hospital

ETP011 A NEWLY DEVELOPED, INTRALUMINAL, SAFELY-SEALED, AIR SUPPLY UNIT-DETACHABLE BALLOON UNIT TO RAPIDLY WASH THE TRANSCOLORECTAL ROUTE FOR NOTES HAO XU, MD, Takeshi Ohdaira, MD, Norifumi Tsutsumi, MD, Megumu Mori, MD, Munenori Uemura, Ph D, Makoto Hashizume, MD, Department of Advanced Medicine and Innovative Technology, Kyushu University Hospital.

ETP012 A NOVEL WIDE-RANGE OBSERVATION METHOD OF THE BRAIN SURFACEUSING ASMALL DIAMETER (1.0 MM) RIGID NEUROENDOSCOPE ACCORDING TO THE ELECTROMAGNETIC NAVIGATION SYSTEM FOR GASTROINTESTINAL ENDOSCOPES: POSSIBILITY OF PERFORMING NEUROENDOSCOPIC BIOPSY Megumu Mori, MD, Takeshi Ohdaira, MD, Kyo Jo, MD, Daitsuke Inoue, MD, Munenori Uemura, PhD, Morimasa Tomikawa, MD, Tomio Sasaki, MD, Makoto Hashizume, MD, Department of Advanced Medicine and Innovative Technology / Department of Neurosurgery

ETP013 THE EARLY FINDINGS OF THE USE OF THROMBOELASTOMETRY IN THE ASSESSMENT OF COAGULATION IN ACUTE PANCREATITIS S A Welchman, MBBS Bsc. MRCS, A Wilkins, MBBS MRCS, J M Wilson, MBBS, J George, A J Copplestone, MBBS MRCP MD, M J Midwinter, MBBS MD, Derriford Hospital, Plymouth

ETP014 AN EVALUATION OF BI-POLAR VESSEL SEALING OF HIGH GRADE ATHEROSCLEROTIC VASCULATURE IN A YUCATAN SWINE MODEL Kimberly E Martin, Kimberly Krugman, MS, Ned Cosgriff, MD, Coviend Energy Based Devices

ETP015 A TWO-STEP TECHNIQUE TO MANAGE THE SECONDARY SPLENIC PEDICLES USING LIGASURE IN LAPAROSCOPIC SPLENECTOMY: A SINGLE INSTITUTION EXPERIENCE OF 105 CASES Guanq Y Wang, PhD, Bai Ji, MD, the First Hospital of Norman Bethune Medical College, Jinli University

ETP016 NATURAL ORIFICE SURGERY: ENDOLUMINAL POUCH REDUCTION FOLLOWING FAILED VERTICAL BANDED GASTROPLASTY Namdar Manouchehri, Daniel W Birch, Carlos Menezes, Xinzhe Shi, Shahzeer Karmali, University of Alberta, Centre for the Advancement of Minimally Invasive Surgery, Royal Alexandra Hospital, Edmonton, Alberta, Canada

ETP017 LAPAROSCOPIC SYSTEMATIC LIVER RESECTIONS: FROM HYBRID TO PURE Go Wakabayashi, MD PhD, Hirokyuki Nitta, MD PhD, Akira Sasaki, MD PhD, Department of Surgery, Iwate Medical University School of Medicine

ETP018 ARTIFICIAL PNEUMOTHORAX DURING MINIMALLY INVASIVE ESOPHAGECTOMY, Yosuke Izumi, MD PhD, Tairo Ryoatokuji, MD, Akinori Miu, MD, Tsuyoshi Kato, Hiroshi Sato, MD, Kohei Kimura, MD, Tokyo Metropolitan Cancer and Infectious Diseases Center, Komagome Hospital

ETP019 COLLAGEN TO ELASTIN RATIO IN FUNCTIONALLY DISCREET HUMAN CADAVER VASCULATURE PREDICTS BURST PRESSURE OF ARTERIES SEALED WITH A BI-POLAR SEALING DEVICE Kimberly Martin, BS, Cassandra Latimer, MS, Jaime Kean, Phd, Coviend Energy Based Devices

ETP020 DUNDEE PULSATILE FLOW SYSTEM – PROGRESS TOWARDS A GOLD-STANDARD CADAVER MODEL FOR RESEARCH AND TRAINING Rachel J Toomey Phd, Erwin Immel MSc, Mariana Gueorguieva PhD, Graeme A McLeod MD, Graeme Houston MD, Roos Eisma PhD, Amir Szold MD, Andreas Melzer MD, DDS, Institute for Medical Science and Technology, University of Dundee, UK; Ninewells Hospital, Dundee, UK; Centre for Anatomy and Human Identification, University of Dundee, Dundee, UK; University of Tel Aviv

ETP021 TOWARDS AN INTEGRATED INTERVENTIONAL IMAGING AND OPERATING SUITE Rachel J Toomey Phd, Amir Szold MD, Andreas Melzer MD, DDS, Institute for Medical Science and Technology, University of Dundee, Dundee, UK; University of Tel Aviv

ETP022 USE OF KNOTLESS BARBED SUTURES FOR SINGLE LAYER CLOSURE OF GASTROINTESTINAL TISSUES: AN IN VIVO BIOMECHANICAL COMPARISON OF TWO DEVICES. Jeffrey Zarub, DVM DACVS, Kristina Kaminska, MS, Jeffrey Miller, MS, Jennifer Linsdowne, DVM MSC DACVS, Covidiem, North Haven, CT
ETP036 IS MORBID OBESITY SURGERY SAFE IN CIRRHOTICS? Roger D. Wu, MD, Stalin Campos, MD, Eyob Feyissa, MD, Jorge Ortiz, MD, Radi Zaki, MD, Kamran Khanmoradi, MD, Victor Araya, MD, Nikroo Hashemi, MD, Albert Trang, MD, Ramsey Dallas, MD, Albert Einstein Medical Center

ETP037 A NEW MESH FOR LAPAROSCOPIC VENTRAL HERNIA REPAIR Ashraf A Bakr, Professor Dr, Dr Soliman Fakeeh Hospital

ETP038 DUNDEE ANCHORED & RETRACTION TETHER SYSTEM (DARTS) Paul S Maher, PhD, Stuart I Brown, PhD, Tim G Frank, PhD, Leslie B Kelly, Mr, Benjie Tang, MD, Alfred Cuschieri, MD, 1. Institute for Medical Science and Technology (IMSaT), University of Dundee, UK 2. Cuschieri Skills Centre, Level 5, Ninewells Hospital, Dundee DD1 9SY, Scotland

ETP039 A NEW STRATEGY OF LAPAROSCOPIC SPLENECTOMY FOR CIRRHIOTIC PATIENTS WITH HYPERSPLENISM Jota Watanabe, MD, Fumiki Kushihata, MD, Masahide Hatano, MD, Hitoshi Inoue, MD, Yoshikuni Yonenaga, MD, Akifumi Miyoshi, MD, Taiji Tohyama, MD, Kazuo Honda, MD, Yasutsugu Takada, MD, Department of Hepat-Biliary-Pancreatic Surgery and Transplantation, Ewha university college of Medicine

ETP040 DEVELOPMENT OF A ROTATABLE RECTOSCOPE WITH SIDEWALL OPENING AND EMBEDDED LED LIGHTS FOR TRANSANAL SURGERY KwangGil Kim, PhD, JunHwa Lee, PhD, SongBong Lee, MS, HeonSoo Shin, MS, Daekyung Sohn, MD, National Cancer Center in KOREA

ETP041 A NOVEL REUSABLE DEVICE TO CONTINUOUSLY CLEAN LAPAROSCOPIC OPTICS DURING SURGERY Konstantinos I Makris, MD, Andrew S Kastenmeier, MD, Christy M Dunst, MD, Mark H Whiteford, MD, The Oregon Clinic

ETP042 FIRST RIB RESECTION: A NOVEL VIDEO ASSISTED THORACOSCOPIC MINIMALLY INVASIVE APPROACH TO THE MANAGEMENT OF THORACIC OUTLET SYNDROME Harmik J Soukiasian, MD, Ankur Gupta, MD, George Berci, MD, Robert J McNenna, MD, Cedars – Sinai Medical Center, Division of Cardiothoracic Surgery

ETP043 A LOW-COST LAPAROSCOPIC SIMULATOR CAPABLE OF INSUFFLATION. Gregory Fu, Vishnu Ganesan, Brian Slakter, Jennifer Snow, MD, Enrico Danzer, MD, Gregg Lipschik, MD, Kristoffel Dumon, MD, Noel Williams, MD, Andrew Resnick, MD MBA FACS, University of Pennsylvania School of Engineering and Applied Science, University of Pennsylvania Department of Medicine,University of Pennsylvania Department of Surgery

ETP044 DEVELOPMENT OF AN ANTI-BENDING DEVICE FOR THE 2.4 MM MINISCOPIC USE IN PEDIATRIC MICROLAPAROSCOPY Salmari Turali, MD, Felix Schier, MD PhD, University Medical Center Mainz, Department of Pediatric Surgery

ETP045 THE ROUTINE USE OF NEWLY DEVELOPED MINISCOPE FOR THE PEDIATRIC MICROLAPAROSCOPY – SOLUTIONS FOR THE TECHNICAL AND MECHANICAL CHALLENGES Salmari Turali, MD, Felix Schier, MD PhD, University Medical Center Mainz, Department of Pediatric Surgery

ETP046 THE USE OF A DETACHABLE ANVIL IN STAPLED HEMORROIDECTOMY Rebekah Kim, MD, Ferrara Andrea, MD, Itriago Francisco, MD, Renee Mueller, MD, Joseph Gallagher, MD, Paul Williamson, MD, Samuel DeJesus, MD, Robert Stevens, MD, Heidi Bahna, MD, Mark Soliman, MD, Colon and Rectal Clinic of Orlando, Orlando Health

ETP047 MULTIPLE INSTRUMENT GUIDE AND 2.8 MM CHOLEDOCHOSCOPE FOR LCBE Donald E Wenner, MD, Roswell Regional Hospital

ETP048 LAPAROSCOPIC RIGHT HEMICOLECTOMY THROUGH MEDIAL ACCESS GUIDED BY THE LANDMARK OF THE SUPERIOR MESENTERIC VEIN(SMV): REPORT OF 105 CASES Shi Yi, Sun Yueming, Bai Jianfeng, department of minimally invasive surgery , first affiliated hospital of Nanjing medical university
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Henk ten Cate Hoedemakers, MD Surgeon, Jetse Goris, MSc Educational sciences, Mark Pieter Alsem, Student Business development, Ivar Bosma, Student Biomedical Engineering, Christiaan Hoffer, MD Surgeon, Tim Laning, Co Owner Grendel Games, Dept of Surgery University Groningen, Limis, Grendel Games

ETP050 SINGLE INCISION TOTAL EXTRA-PERITONEAL LAPAROSCOPIC INGUINAL HERNIA REPAIR USING A NEW DEVICE: A CASE REPORT David S Lee, MD, Tomasz Rogula, MD PhD, Cleveland Clinic Foundation, Bariatric Metabolic Institute

ETP051 IN VIVO ASSESSMENT OF KNOTLESS BARBED SUTURE FOR ENTEROTOMY CLOSURE Nicole P Ehrhart, VMD MS, Kristina Kaminskaya, MS, Jeffery Miller, MS, Jeff Zarubby, DVM, Colorado State University, Fort Collins, CO and Coviidien, North Haven CT

ETP052 CATHETER DESIGNED FOR AMBULATORY PNEUMOPERITONEUM AND ADHESIOLYSIS Stephen rakower, MD, Fountain Valley Regional Medical Center

ETP053 THE SUMMA SILS INANIMATE TRAINER BOX TOP PULLEYS DO PULL IN LAPAROSCOPIC SURGERY Konstantin Umanskiy, MD, Marie Ziesat, MD, William Hrdina, Saeed Richardson, Stephen Small, MD, University of Chicago Departments of Surgery and Anesthesia. University of Chicago Simulation Center

ETP054 AN INFORMATION-RICH TECHNOLOGY FOR COMPREHENSIVE EVALUATION OF THE HUMAN-MACHINE INTERACTION IN ROBOTIC SURGERY Konstantin Umanskiy, MD, Marie Ziesat, MD, William Hrdina, Saeed Richardson, Stephen Small, MD, University of Chicago Departments of Surgery and Anesthesia. University of Chicago Simulation Center

ETP055 SUCTION ON THE WRONG END OF THE INSTRUMENT? IT DOES WORK! Pradeep Subramanian, MS, Christian Medical College Vellore, Tamil Nadu, India

ETP056 PULLEYS DO PULL IN LAPAROSCOPIC SURGERY Pradeep Subramanian, MS, Christian Medical College Vellore, Tamil Nadu, India

ETP057 LAPAROSCOPIC ADJUSTABLE GASTRIC BAND WITH A PLICATED SLEEVE GASTROPLASTY James A Dickerson, MD, Chan W Park, MD, Dana D Portenier, MD, Duke University Medical Center

ETP058 INITIAL EXPERIENCE WITH THE VIKING 3D/HD LAPAROSCOPIC SYSTEM Esteban Varela, MD, Gerald Andriole, MD, Department of Surgery Washington University School of Medicine

ETP059 PURE NOTES: TRANSVAGINAL TUBAL STERILIZATION WITH A FLEXIBLE ENDOCOSCOPE Jose G Mejias, MD, Pierina B Rosales, MD, Hector Almua, MD, Rafael De La Fuente, MD, Naydili Garcia, MD, Carlos Bravo, MD, Clinica Briceno Rossi

ETP060 A SMALL CAMERA GUIDANCE SYSTEM FOR OBSERVING THE ABDOMINAL CAVITY FILLED WITH ISOTONIC WATER Rodivian G Sentanu, Kohei Horiuchi, Takuro Ishii, Masaki Sekine, Wen-wei Yu, PhD, Tatsuo Igarashi, MD, Faculty of Engineering, Chiba University

ETP061 LAPAROSCOPIC ABDOMINALPERINEAL RESECTION WITHOUT A PERINEAL INCISION Sonia T Orcutt, MD, Christy L Marshall, MD, Courtney J Balentine, MD, Celia N Robinson, MD, Daniel Albo, MD PhD, Department of Surgery, Baylor College of Medicine, Houston, TX

ETP062 DEVELOPMENT OF A SHAPE TRACKER FOR COLONOSCOPY NAVIGATION Caroline G Cao, PhD, Peter Y Wong, PhD, Jessica Eisenstein, MS, Tufts University, Medford MA

ETP063 THE USE OF A SURGERY TRAINING INTERFACE (STI) TO GUIDE OPTIMAL GAZ CONTROL STRATEGIES DURING THE ACQUISITION OF A LAPAROSCOPIC SKILL. S J Vine, PhD, C Lin, PhD, J McGrath, FRCS MD, E Bright, MD, R Masters, DPhil, M R Wilson, PhD, The University of Exeter and The Royal Devon and Exeter Hospital, UK.

ETP064 ASSESSMENT OF LAPAROSCOPIC SURGERY TRAINING BASED ON A MODEL OF DIGESTIVE SYSTEM ANATOMOSIS USING CHICKEN HEARTS IN AN ENDO-TRAINING BOX Shin-ichiro Mori, MD, Kuniaiki Aridome, MD, Tsutomu Kozono, MD, Kenji Baba, MD, Hironori Sakita, MD, Saburou Nakashima, MD, Toyokuni Suenaga, MD, Shouji Natugoe, MD, Department of Surgery, Nanpah Hospital

ETP065 LATERAL DECUBITUS IMPROVES TRANSDUCISION ENDOSCOPIC ACCESS TO THE LATERAL AND POSTERIOR ASPECTS OF THE THRAX Yung-Hen Liu, MD, Po-Jen Ko, MD, Yi-Cheng Wu, MD, Tzu-Ping Chen, MD, Ming-Shian Lu, MD, Laboratory Animal Center, Department of Surgery, Chang Gung Memorial Hospital, Linko, Chang Gung University

ETP066 A TOOL INTERFACE WITH FORCE FEEDBACK FOR THE VIRTUAL BASIC LAPAROSCOPIC SKILLS TRAINER (VBLAST) Ganesh Sankaranarayanan, PhD, Zhonghua Lu, PhD, Saurabh Dargar, BS, Daniel B Jones, MD MS FACS, Suvarnu De, ScD, Rensselaer Polytechnic Institute and Beth Israel Deaconess Medical Center

ETP067 ANTIMICROBIAL EFFICACY OF A NOVEL MINOCYCLINE/ RIFAMPIN COMPOSITE MESH COATING IN A RABBIT MODEL OF OPEN VENTRAL HERNIA REPAIR Yori W Novitsky, MD, Jeffrey R Scott, PhD, Case Western Reserve University; C.R. Bard, Inc. (Davol)

ETP068 LAPAROSCOPIC COLON RESECTION IN BLUNT TRAUMA: A SAFE OPTION Ulises Torres, MD, Alfred Jaffe, BA, University of Massachusetts Medical School

ETP069 DIFFERENT THERAPEUTIC MODALITIES FOR COMMON BILE DUCT AND THE GALLBLADDER STONES (A PROSPECTIVE RANDOMISED STUDY) SERVET KARAHAN, PROF, GOKHAN TOLGA ADAS, MD, BORA KOC, MD, AYHAN OZSOY, MD, S.B.OKMEYDANI RESEARCH HOSPITAL

ETP070 INTEGRATION OF EMERGING TECHNOLOGIES IN MIS: ROBOTICS AND SINGLE-SITE SURGERY Renee N Carter, MD, Celine A Richardson, MD, David Zisow, MD, W Peter Geis, MD, Northwest Hospital

ETP071 LUMBAR SYMPATHECTOMY FOR PLANTAR HYPERDEIROSIS - 95 CASES Marcelo Loureiro, PhD, Alexandre Bley, MD, Jacques Perissat Institut

ETP072 EFFICACY OF FULL-THICKNESS GASTRIC PERFORATION CLOSURE WITH A NOVEL OVER-THE-SCOPE CLIP (OTSC) APPLICATION DEVICE Kai Matthes, MD PhD, Yunho Jung, MD, Masayuki Kato, MD, Mark A Gromski, BA, Ram Chuttani, MD, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA

ETP073 TEP WITH NO BALLOON, NO STAPLES AND WITH THINNER INSTRUMENTS. INITIAL 50 CASES EXPERIENCE Marcelo Loureiro, Eduardo Bonin, Claudia Christiano, Jacques Perissat Institut

ETP074 NOVEL MESH FOR LAPAROSCOPIC INGUINAL HERNIA REPAIRS -- SELF-GRIPPING, MINIMAL FIXATION Ernest D Gomez, Daniel A Hashimoto, Kenric M Murayama, MD, University of Pennsylvania Medical School - Dept. of Surgery

ETP075 LIVER REGENERATION AND INTRACELLULAR STRESS AFTER OPEN AND LAPAROSCOPIC LEFT PARTIAL HEPATECTOMY IN A PORCINE MODEL C.S. Mammas, MD PhD, G. Mammas, Associate Professor, Nikolaos Arkadopoulos, Assistant Professor, A. Papiti, Associate Professor, N. Kavantzas, Assistant Professor, Chr. Nikolaoou, Associate Professor, I. Dontas, Associate Professor, C. Tiniakou, Associate, Aretaieion University Hospital, Athens, Greece. University of Patras, School of Medicine

ETP076 NEW SIMPLIFIED TECHNIQUE FOR CLOSURE OF HIATAL HERNIAS USING QUILL™ SUTURE Angelica Garcia, Abraham Abdemur, Luciano Poggi, Samuel Szomstein, Raul J Rosenthal, Cleveland Clinic Florida
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ETP077 A NEW VERY LOW FRICTION TROCAR TO INCREASE SURGICAL PRECISION AND IMPROVE AESTHETICS IN MINILAPAROSCOPY. Gustavo L Carvalho, MD PhD, Diego L Lima, Student, Adrian C Sales, Student, Jose Sergio N Silva, Student, Flavio Augusto M Fernandes Junior, MD, University of Pernambuco, School of Medicine, Hospital Oswaldo Cruz, Recife - Brazil

ETP078 EFFECT OF NEGATIVE PRESSURE THERAPY (NPT) ON PORCINE INTESTINAL ANASTOMOSES. Kenneth C Norbury, PhD, Barbara A Collins, BS, Deepak V Kilpadi, PhD MBA, Kinetic Concepts, Inc.

ETP079 AN ANTHRO-CENTRIC MULTISENSORY INTERFACE FOR SENSORY AUGMENTATION OF TELE-SURGERY (ACMI-SATS). Anil K Raj, MD, Adrien Mouchobeouf, MS, Andrew Holmgren, BS, Timothy L Hutcheson, BS, Joshua D Cameron, BS, David V Lecoutre, MS, Thomas A Vassilades, MD MBA, Florida Institute for Human and Machine Cognition

ETP080 POSITIONING OF FOCUSED ULTRASOUND TRANSDUCER USING MR COMPATIBLE ROBOTIC ARM Xu Xiao, Mr, Mengnan Li, Mr, Andreas Melzer, Prof. Institute for Medical Science and Technology, University of Dundee, UK

ETP081 NEW GENERATION OF MICROLAPAROSCOPIC INSTRUMENTS: IMPROVED STRENGTH, INVISIBLE SCARS. Andrew S Kastenmeier, MD, Konstantinos I Makris, MD, Christy M Dunst, MD, Lee L Swanstrom, MD, The Oregon Clinic

ETP082 A NOVEL UTILITY OF A NEW 3-D HEPATECTOMY IMAGING SYSTEM FOR LAPAROSCOPIC LIVER RESSECTION. Fumiki Kushihiata, Masahide Hatano, Hitoshi Inoue, Yoshikuni Yonenaga, Akifumi Miyoshi, Taiji Toyama, Yasutsugu Takada, Nobuaki Kobayashi, Ehime University School of Medicine

ETP083 LAPARE-ENDOSCOPIC SINGLE SITE SURGERY USING A HEAD MOUNTED DISPLAY. F Arias, MD, MSAGES FACS, N Prada, L Cabrera, A Torres, A Montenegro, N Cortes, L Taboada, A Fuentes, J Dussan, Fundación Sanaté de Bogotá

ETP084 SINGLE-INCISION LAPAROSCOPIC CHOLECYSTECTOMY (SIL-C) USING A NOVEL TECHNIQUE FOR REtraction OF THE GALLBLADDER: EVALUATION OF THE INITIAL EXPERIENCE. Carlos A Galvani, MD, Rakesh Hegde, MD, Angela Echeverria, MD, Tim Rankin, MD, Behrooz Dehshahi, PhD, Section of Minimally Invasive Surgery, University of Arizona, Department of Surgery

ETP085 ELIMINATING COVERED SELF-EXPANDING STENT MIGRATION WITH A NOVEL FIXATION PROCEDURE. Calvin Lyons, MD, Shanda H Blackmon, Assistant Professor, The Methodist Hospital

ETP086 FLEXIBLE LAPAROSCOPY IN ADJUSTABLE GASTRIC BAND PLACEMENT. James A Dickerson, MD, Chan W Park, MD, Aurora D Pryor, MD, Duke University Medical Center

ETP087 A SURGICAL WOUND DRAIN CONTAINING AN ANTIMICROBIAL COATING. Todd Meyer, PhD, Melissa Kelsey, BS, Bacterin International, Inc.

ETP088 ULTRASONIC LIPOSUCTION FOR OMENTAL FAT REDUCTION AND SURGICAL DISSECTION: A PILOT STUDY. Eduardo Aimore Bonin, MD, Juliane Bingener, MD, Andrea Mariani, MD, James Swain, MD, Mary Knipschield, Kazuki Sumiyama, MD, Christopher Gostout, MD, Developmental Endoscopy Unit, Mayo Clinic, Rochester, MN, Eua

ETP089 A COLLABORATIVE MULTIDISCIPLINARY APPROACH TO ADDRESS SURGICAL INSTRUMENT FAILURE. Nicole A Kissane, MD, Gill A Pratt, PhD, Janey S Pratt, MD, Department of Surgery, Massachusetts General Hospital; Franklin W. Olin College of Engineering

ETP090 COMPILING PROVATION MD - A POWERFUL DATA MINING TOOL AMENABLE TO STATISTICAL ANALYSIS. Victor B Tsirline, MD, MS, Igor Belyansky, MD, David A Klima, MD, Cynthia M Hlavacek, Kristian T Dacey, Amy E Lincourt, PhD, Ronald F Sing, DO FACS, B. Todd Heniford, MD FACS, Carolinas Medical Center, Charlotte, NC 28204

ETP091 FROM SOCIAL NETWORKING TO SURGICAL EDUCATION: A NOVEL USE OF WEB BASED VIDEO CONFERENCING TECHNOLOGY FOR REMOTE LAPAROSCOPIC SKILLS TRAINING. Allan Okrainec, MD, Horacio Asbun, MD, Edgar Figueredo, MD, Oscar Henao, MD, Edmundo Dedios, MD, Jacqueline Narvaez, Ted Trus, MD, University of Toronto, ON, Canada; Mayo Clinic, Jacksonville, FL; University of Washington Medical Center, Seattle, WA; Universitario San Vicente de Paul, Colombia; Jorge Reategui Hospital, Peru; Dartmouth-Hitchcock Medical Center, Lebanon, NH

ETP092 LAPAROSCOPIC SPHINCTER-PRESERVING SURGERY FOR LOW RECTAL CANCER USING INTERSPHINCTERIC RESECTION TECHNIQUE AND A BULLDOG CLAMP. Bo Feng, MD, Minhua Zheng, MD, Department of Surgery, Ruijin Hospital, Shanghai Jiaotong University, School of Medicine, Shanghai Minimally Invasive Surgery Center, Shanghai 200025, China

ETP093 THE SEALED INCISION MULTIPORT (SIM) – A NOVEL ACCESS DEVICE FOR BOTH SINGLE AND MULTIPORT LAPAROSCOPIC SURGERY. Ronan A Cahill, Jr. European Institute of Surgical Research and Innovation (EISRI)

ETP094 ENDOSCOPIC SUBMUCOSAL DISSECTION FOR MALIGNANCIES OF THE FOREGUT: AN EARLY NORTH AMERICAN EXPERIENCE. Lorenzo E Ferri, MD PhD, Gerald Fried, MD, McGill University and The Steinberg-Bernstein Centre for Minimally Invasive Surgery

ETP095 INCIDENCE AND EXTENT OF ENLARGEMENT OF UMBILICAL INCISION IN STANDARD LAPAROSCOPIC CHOLECYSTECTOMY: BENCHMARKING FOR SINGLE INCISION LAPAROSCOPIC CHOLECYSTECTOMY. Christoph A Maurer, MD, Samuel A Käser, MD, Simeon Berov, Paolo Aabtibile, MD, Daniela Müller, PhD, Philippe M Glauser, MD, Department of Surgery, Hospital of Liestal, Liestal, Switzerland

ETP096 AUGMENTED REALITY IN LAPAROSCOPIC AND ROBOTIC SURGERY – NOT ONLY A MATTER OF FASHION. Francesco Volonte, MD, François Puglisi, MD, Nicolas Buchs, MD, Pascal Bucher, MD, Maki Sugimoto, MD, Osman Rattib, Prof, Philippe Morel, Prof, 1 Viseral and Transplantation Surgery, University Hospitals of Geneva, Switzerland 2 Department of Gastroenterology, Kobe University Graduate School of Medicine, Kobe, Japan 3 Department of Nuclear Medicine, University Hospitals of Geneva, Switzerland

ETP097 BALL/ GLOBE DIATHERMY INSTRUMENT AN ESSENTIAL INSTRUMENT IN LAPAROSCOPIC SURGICAL PROCEDURE. Md. Kamruzzaman Khan, FCPS, Md. Kamruzzaman Khan, FCPS, Md. Kamruzzaman Khan, FCPS, Bangabandhu Sheikh Mujib Medical University, Dhaka

ETP098 REDUCED PORT LAPAROSCOPIC NISSEN FUNDOPPLICATION VERSUS THE STANDARD LAPAROSCOPIC APPROACH: A PROSPECTIVE EVALUATION. Joshua Everhart, John G Linn, Kyle A Perry, W. S. Melvin, 1. Ohio State University College of Medicine, Columbus, OH, United States. 2. General Surgery, Ohio State University College of Medicine, Columbus, OH, United States.
ETP099 PERITONEAL CONTAMINATION UNCOMMON DURING TRANSVAGINAL CHOLECYSTECTOMY Pratibh Vemulapalli, MD, Harvey C Rainville, MD, Emanuel Agaba, MD, Diego Camacho, MD, Scott Chudnoff, MD, Montefiore Medical Center and Albert Einstein College of Medicine

ETP100 THE USE OF A NOVEL SELF EXPANDING NITINOL HERNIA SYSTEM FOR NATURAL ORIFICE (NOTES) INGUINAL HERNIORRHAPHY Danny A Sherwinter, MD, Matthew Dixon, MD, Maimonides Medical Center Department of Minimally Invasive Surgery

ETP101 LAPAROSCOPIC SIGMOID RESECTION WITH TRANSRECTAL SPECIMEN EXTRACTION FOR BOWEL ENDOMETRIOSIS HAS A BETTER OUTCOME COMPARED TO CONVENTIONAL LAPAROSCOPIC SIGMOID RESECTION. Albert M Wolthuis, MD, Christel Meuleman, MD, Carla Tomassetti, MD, Thomas D’Hooghe, MD PhD, Steffen Fieuws, PhD, Freddy Fieuws, MD PhD, André D’Hoore, MD PhD, Department of Abdominal Surgery, Leuven University Fertility Centre, Department of Obstetrics and Gynecology, Interuniversity Centre for Biostatistics and Statistical Bioinformatics

ETP102 OUTCOMES FOR CASE-MATCHED SINGLE PORT COLECTOMY ARE COMPARABLE WITH CONVENTIONAL LAPAROSCOPIC COLECTOMY Albert M Wolthuis, MD, Steffen Fieuws, PhD, Freddy Penninckx, MD PhD, André D’Hoore, MD PhD, Department of Abdominal Surgery, University Hospital Gasthuisberg, Leuven, Belgium

ETP103 ENDOSCOPIC TATTOOING TO MARK DISTAL MARGIN FOR LAPAROSCOPIC RECTAL RESECTION Daniel D Kirchoff, MD, Joon Ho Jang, MD, Vesna Cekic, RN, Kathy Baxter, RN, Pranat Kumar, MD, Koji Park, MD, Kevin Holzman, MD, Richard L Whelan, MD, St. Luke’s-Roosevelt Hospital Center

ETP104 THE NEW VIDEOSCOPIC METHODE OF PRESACRAL SPACE EXPLORATION ALLOWING REMOVAL OF THE MESORECTUM COMBINED WITH IDENTIFICATION OF THE INNERVATION USING CAVERMAP DEVICE. Piotr Walega, MD PhD, Jakob Kenig, MD, Piotr Richter, Prof, Wojciech Nowak, Prof, Jagiellonian University Collegium Medicum

ETP105 ANATOMICAL AND ATYPICAL LIVER RESECTIONS: BOTH FEASIBLE AND SAFE BY LESS SURGERY Dimitrios G Tzanis, MD, Giuseppe Di Giuro, MD, Guillaume Pourcher, MD, Niaz Devaquet, MD, Ibrahim Dagher, MD PhD, Department of Abdominal and minimal invasive Surgery; A. Bécére Hospital
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Website: www.allergan.com

Allergan has joined the effort to fight the growing obesity epidemic with the LAP-BAND® Adjustable Gastric Banding System, the first minimally invasive surgical approach approved in the United States by the FDA, to help patients achieve sustained weight loss, realize their goals for healthy living, and reduce obesity-related risks.

ALLERGAN MEDICAL #309 AFFAIRS
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Irvine, CA 92612
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We are a team of dedicated professionals committed to supporting scientific education, research and clinical practice related to Allergan products. Medical Affairs provides the highest quality information in the most respectful, ethical and unbiased fashion.

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Toll Free: (800) 872-5652
Website: www.aloka.com

Aloka’s commitment to ultrasound offers a range of consoles and transducers to meet surgeons needs. Recognized for our image quality, system reliability and intuitive use of cutting edge technology, Aloka remains the standard in the field of ultrasound for surgeons.

ASCENT: A Stryker #353 Sustainability Solution
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www.ascenths.com

Ascent is a medical device company leading the industry’s pursuit of more sustainable and responsible use of resources in healthcare through reprocessing and other programs.

ATRIUM MEDICAL #207 CORPORATION
5 Wentworth Drive
Hudson, NH 03051
Tel: 603-880-1433 Fax: 603-386-6266
Website: www.atriummedical.com

Atrium’s C-QUR™ Mesh family of hernia products combine our industry-leading ProLite™ polypropylene with a proprietary Omega 3 fatty acid absorbable coating. Pre-clinical studies demonstrate minimized tissue attachment and significant reduction in inflammation, resulting in a well healed, reinforced repair.

AUTOMATED MEDICAL #403 PRODUCTS CORPORATION
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Edison, NJ 08818
Tel: 732-602-7717 Fax: 732-602-7706
Website: www.ironintern.com

BARIATRIC TIMES #203
Matrix Medical Communications
1595 Paoli Pike, Suite 103
West Chester, PA 19380
Tel: 866-325-9907 Fax: 484-266-0726
Website: www.BariatricTimes.com

BÄRRX MEDICAL, INC. #758
540 Oakmead Parkway
Sunnyvale, CA 94085
Tel: 408-328-7300 Fax: 408-328-7395
Website: www.barrx.com
Developed by BÄRRX Medical, the HALO Ablation System provides a uniform and controlled radiofrequency energy delivery, removing the diseased tissue and allowing regrowth of normal cells for the treatment of Barrett’s esophagus, radiation proctitis and gastric antral vascular ectasia (GAVE).

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Website: www.blinemedical.com/
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Marlboro, MA 01752
Tel: 508 683 4000
Website: www.bostonscientific.com
Boston Scientific Endoscopy develops a broad spectrum of diagnostic and therapeutic devices for a variety of digestive diseases throughout the GI tract. We are committed to innovation, collaboration and the development of devices that support our customers’ goals for less invasive, more efficient procedures that contribute to better patient outcomes.

BRIDGE PTS INC. #644
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San Antonio, TX 78235
Tel: 210-532-7344 Fax: 210-532-7349
Website: www.BRIDGEPTS.com
Wound healing and infection research is our specialty at BRIDGE PTS. We offer expertise in evaluating drugs and medical devices for their wound healing, antimicrobial and anti-biofilm efficacy using in vitro and in vivo models that closely resemble human disease.

BUFFALO FILTER #504
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Tel: 716-835-7000 Fax: 716-835-3414
Website: www.buffalofilter.com
Buffalo Filter® is a medical device manufacturer with a primary focus on manufacturing and engineering products for the evacuation and filtration of hazardous smoke plume generated during laser/electrosurgical procedures. Products include: surgical smoke evacuators, ULPA/HEPA replacement filters.

CALMOSEPTINE, INC. #201
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Huntington Beach, CA 92647-4536
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Website: www.calmoseptine.com
Calmoseptine Ointment is a multi-purpose moisture barrier that protects and helps heal skin irritations from moisture, such as urinary and fecal incontinence. Calmoseptine Ointment temporarily relieves discomfort and itching. Free samples at our booth!

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CareFusion brings technology and intelligence together to help make the care process easier for caregivers and safer for patients. Our clinically proven products and services help reduce medication errors and healthcare-associated infections. Our portfolio encompasses some of the most trusted brands in healthcare, including Alaris®, Chloraprep®, Nicolet™, Pyxis® and V. Mueller®.

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Website: www.cine-med.com
Ciné-Med partners with SAGES to produce and distribute the SAGES video library, including SAGES Grand Rounds, Postgraduate Courses, SAGES Top 21, and the SAGES Pearls series. Stop by booth #746 for more information and to view samples of these videos and more.

CLEVELAND CLINIC – cSITE (center for Surgical Innovation, Technology & Education) #510
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Cleveland OH 44195
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216-445-5601 Nancy Farrow
Fax: 216-445-7887
Website: http://csite.clevelandclinic.org
Cleveland Clinic’s Center for Surgical Innovation Technology & Education, (cSite) is a great facility to conduct: 1) Large workshops; 2) Teleconferences; 3) CME courses; 4) Short labs and 5) Improve your skills with the latest Virtual Reality simulators. cSite exists to develop new or advance existing least invasive surgical techniques through innovation, research and education across all disciplines and specialties to the benefit of the patients we treat.
Imbrication procedures. During Sleeve Gastrectomy and Gastric surgery, and sleeve measurements creating consistent stoma size to be set imaging during Gastric Banding. The EndoFLIP system has FDA clearance for Fundoplication and Heller Myotomy. The in real time during Bariatric Surgery, the gastrointestinal tract to be measured imaging system and catheter. The system uses a disposable catheter which uniquely CROS Sparon manufacture of the EndoFLIP gelation system and catheter. The system uses a disposable catheter which uniquely allows lumen size and distensibility of the gastrointestinal tract to be measured in real time during Bariatric Surgery, Fundoplication and Heller Myotomy. The EndoFLIP system has FDA clearance for stoma size imaging during Gastric Banding creating consistent stoma size to be set during surgery, and sleeve measurements during Sleeve Gastrectomy and Gastric Imbrication procedures.
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GENERAL SURGERY NEWS #431
545 West 45 Street, Floor 8
New York, NY 10036
Tel: 212-957-5300 Fax: 212-957-7230
Website: www.Generalsurgerynews.com
General Surgery News is a monthly newspaper designed to keep general surgeons abreast of the latest developments in the field. The publication features extensive meeting coverage, analysis of journal articles, educational reviews, and information on new drugs and products.

GIVEN IMAGING #653
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Duluth, Georgia 30096
Tel: 770-662-0870 Fax: 678-291-0140
Website: www.givenimaging.com
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GORE & ASSOCIATES #608
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Flagstaff, AZ 86004
Tel: 928-771-2771 / 800-437-8188
Website: www.goremedical.com
Gore Medical Products Division has provided creative therapeutic solutions to complex medical problems for three decades. The extensive Gore Medical family of products includes vascular grafts, endovascular and interventional devices, surgical materials for hernia repair, soft tissue reconstruction, staple line reinforcement, and sutures for use in vascular, cardiac and general surgery.

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H+H Surgical Technologies is a leader in pre-owned medical equipment sales. We specialize in flexible endoscopy, laparoscopy and related instrumentation. We are dedicated to providing high quality and customer satisfaction. We feel that our prices are unbeatable and we stand behind every piece.

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Brentwood, TN 37027
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Website: www.practicewithus.com
HCA owns and operates 163 hospitals in 20 states with opportunities coast to coast. We are committed to the care and improvement of human life, striving to deliver quality healthcare meeting the needs of the communities we serve.

HRA RESEARCH #435
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Parisippany, NJ 07054
Tel: 973-240-1200 Fax: 973-463-1888
Website: www.hresearch.com
Our team of experienced interviewers will be distributing carefully developed questionnaires. We’ll be gathering the answers to vital marketing and clinical questions- answers that can affect the introduction of new products or the continuation of existing healthcare products and services.

INNOVIA LLC #433
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Website: www.innovia-llc.com
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Website: www.integraft.com
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Journal of Laparoendoscopic & Advanced Surgical Techniques (ULAST) (www.liebertpub.com/lap) launches Part B, VideoScopy, the groundbreaking new online videojournal complement to the international, peer-reviewed journal for practicing surgeons! Learn more about Part B, VideoScopy - Stop by Booth #244!

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Website: www.mederitherapeutics.com
Mederi Therapeutics manufactures and markets innovative medical devices that use radiofrequency energy to treat disease states affecting the human digestive system. Mederi’s first two products—Secca for treatment of bowel incontinence and Stretta, for treatment of gastric reflux—have demonstrated safety and efficacy in numerous clinical studies. All Mederi therapies are outpatient (same day), endoluminal (using existing orifices for access), and promote rapid recovery for patients. Mederi Therapeutics is located in Greenwich, CT.

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Microline Surgical develops and manufactures laparoscopic reposable instruments unsurpassed in precision, performance and reliability. Wholly-owned Starion Instruments employs the direct transfer of thermal energy and pressure to simultaneously seal and divide tissue. In partnership with Cambridge Endoscopic Devices: unique articulating instruments for single incision surgery and advanced laparoscopic procedures.

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Mimic has utilized technology licensed from Intuitive Surgical to create a simulation experience with unparalleled realism. The dV-Trainer™ is an independently validated simulator that provides skills training for robotic-assisted surgery and features a compact hardware platform that reproduces the feel and function of the *da Vinci®*

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Center Valley, PA 18034
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Website: www.olympusamerica.com

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Website: www.perkins-ht.com

Perkins has been designing, developing, manufacturing, and distributing medical video Products exclusively since the company's inception in 1986. Perkins continues this tradition today, providing medical grade solutions that improve workflow, seamlessly integrate into examination suites and provide connectivity to disparate imaging / video sources and the displays.

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Website: www.re-tecsurgical.com

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Fax: 847-913-6959
Website: www.richardwolfusa.com
Richard Wolf Medical Instruments (RWMIC) manufactures and distributes laparoscopic and thoracoscopic instruments. RWMIC also manufactures scopes, insufflators and a complete line of instruments and optics designed specifically for bariatric and colorectal surgery. RWMIC offers the only microscope on the market, designed specifically for Transanal Endoscopic Microsurgery. Recently introduced also, are our ergonomically designed set of laparoscopic forceps. They are autoclavable and come in the most popular jaw patterns.

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800-468-4556
Website: www.sandhillsci.com
Now in its 30th year, Sandhill Scientific is a recognized global leader in G.I. Diagnostics. Our ZepHR® Impedance/pH System has set the standard for Total Reflux Monitoring, providing the clinician state-of-the-art technology and the widest choice of catheter configurations available. When it comes to motility, the broad capabilities of our Ultimate Manometry Platform include High Resolution Impedance Manometry (HRiM®) and High Resolution Anorectal Manometry (HRaM). Through our industry leading Sandhill University, we provide the most comprehensive options for training and education available.

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Cleveland, OH 44105
Tel: 216-229-2040 Fax: 216-229-2090
Website: www.simbionix.com
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Website: www.surgicalproductsmag.com
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Surgical Endoscopy, the Official Journal of SAGES and EAES.

Surgical Products magazine is the leading source for cutting-edge surgical technology to 60,000 surgeons and medical/purchasing professionals across the country. Available in print and digital editions, it is complemented by a daily “First Cuts” e-newsletter, e-product showcase and e-marketing blasts.

Surgical Science, established in 1999, develops high quality tools for the Assessment, Training and Certification of medical professionals. Using Virtual Reality simulation technologies, users are able to build skills on Surgical Science simulators that demonstrate and transfer proficiency from virtual reality to the operating suites. Surgical Science is headquartered in Gothenburg (Sweden) with offices in Minneapolis, (USA) and Mexico City (Mexico).
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TransEnterix is advancing laparoscopy with its innovations in flexible and micro laparoscopy. The SPIDER® Surgical System provides surgeons enhanced capabilities to perform triangulation via single site access with flexible, articulating instruments. The TransEnterix Micro Lap instruments are uniquely small at 2.7 mm, yet uncompromising in strength.

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