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The clinicopathologic features and optimal surgical treatment of duodenal gastrointestinal tumor

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Session abstract will be presented in: **Foregut/Gastric Session**

Number of Reviewers: **4**
Total Score: **21**
Mean Score: **5.25**

Score	Reviewer	Reject Comment	Overall Comment
5	Jon Gould		
5	David Scheeres		Large series of duodenal GISTs, compares different surgical treatment, including limited resection and Whipple. These two groups in the 2nd and 3rd portion of the duodenum had different anatomic characteristics, so this is more a description of their expe
5	Ali Tavakkoli		
6	Steven Bowers		Consider for HPB Plenary

Background: Because of unclear clinicopathologic features, the optimal surgical procedure for duodenal gastrointestinal stromal tumor (GIST) remains poorly defined. We aimed to analyze clinicopathological features and recommend optimal surgical treatment of duodenal GIST, especially 2nd and 3rd portion.

Method: From July, 2000 to April 2017, 118 patients who had localized duodenal GIST were treated by curative surgical resection at a single institution. We retrospectively reviewed the clinicopathological characteristics and survival outcomes.

Result: In survival analysis of all patients, 5-year overall survival (OS) and disease-free survival (DFS) rate were 94.9 and 79.2%, respectively. 19 patients developed recurrent disease at a median of 26.1 months from surgery and most common recurrence site was liver (63.2%). In multivariate analysis, mitotic count was the statistically significant prognostic factors of DFS. Our 20 cases of duodenal GIST in 1st or 4th portion were completely resected by limited resection(LR), regardless of tumor size. 98 patients with GISTs in 2nd or 3rd portion of duodenum underwent LR (n=53) or pancreaticoduodenectomy (PD) (n=45). Patients in the LR group had a smaller median tumor size (4.0 vs 5.3 cm, p = 0.026), more antimesenteric-sided location (41 vs 7cases, p<0.001), less late complications (1 vs 7 cases, p=0.014) and no postoperative newly developed diabetes mellitus (0 vs 4 cases, p=0.027) than those in the PD group. The 5-year OS and DFS rate were no statistical significance between the LR and PD groups. (OS: 91.9 vs. 96.2%, p=0.616 / DFS: 84.0 vs 72.6%, p=0.071). When 53 patients in LR group further divided into minimal invasive LR (MILR) (n=12) and open-LR (n=41), MILR group had shorter operation time (155.0 vs 218.8 minutes, p=0.013) and postoperative hospital stay (12.0 vs 19.4 days, p=0.036). The 5-year OS and DFS rate were also no statistical significance between the MILR and Open-LR groups. (OS: 100 vs 90.8%, p=0.490 / DFS: 100 vs 81.7%, p=0.310)

Conclusion: Patients with duodenal GIST who underwent complete surgical resection have favorable survival outcomes. Predictor of disease recurrence at multivariate analysis was mitotic count. LR is feasible and effective surgical treatment for the patients with small-sized, and anti-mesenteric sided duodenal GIST in terms of long-term oncologic outcomes and quality of life. MILR has better perioperative outcomes (shorter operative time and postoperative hospital stay) than open LR. Therefore, we should consider MILR as optimal surgical treatment for the selected patients with duodenal GIST.