



LETTER TO
THE EDITOR
EDİTÖRE
MEKTUP

Wedge Resection of Duodenal Gastrointestinal Stromal Tumor

Duedonal Gastrointestinal Stromal Tümörün Kama Rezeksiyonu

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Dear editor,

Gastrointestinal stromal tumors (GISTs) are the most common mesenchymal tumors of the gastrointestinal tract (1). GISTs can be localized throughout the gastrointestinal tract, the stomach and small intestine being the most common locations (2). Duodenal GISTs are very rare and constitute only 4.5% of all GISTs (3). The optimal surgical procedure for duodenal I GIST remains unclear because of the complex anatomy of the duodenum (4). Here we report a duodenum located GIST case who was treated with a simple surgical procedure such as wedge resection that offers equal oncological results to pancreatoduodenectomy. A 75-year-old man was admitted with acute upper gastrointestinal bleeding to a state hospital. His medical history revealed that the patient was hospitalized twice with a provisional diagnosis of massive upper gastrointestinal bleeding. Gastroduodenal endoscopy revealed a submucosal tumor located in the anterolateral wall of the third part of the duodenum. The mucosa showed ulceration, this being the origin of the massive bleeding. Because of the persistent bleeding that could not be controlled by endoscopic interventional treatment, an emergency laparotomy was performed. At laparotomy, a mass originating from the antimesenteric site of the duodenal wall in the third portion of the duodenum was identified. Ligation of the tumor feeding vessel originating from the pancreaticoduodenal artery was successfully performed to control the bleeding and then the tumor was removed by wedge resection and primary anastomosis was performed. The postoperative course was uneventful and the patient was discharged on postoperative day 7. In the resected specimen, the tumor diameter was 4 cm. Surgical limits were clear. The main tumor mass was located subserosally. The tumor had a thin fibrous capsule. Histology revealed a GIST with a typical spindle cell pattern. Immunohistochemistry showed a diffuse strong staining membranose and perinuclear positivity for C-KIT (CD117). Mitotic activity was < 5/50 high power fields. Based on these findings, the tumor was diagnosed as a GIST of low-grade malignancy, there was no indication for an adjuvant therapy with Imatinib, a tyrosine kinase inhibitor.

GISTs are believed to originate from the interstitial cells of Cajal, which are intestinal pacemaker cells. A typical feature of all GISTs is a positivity at immunohistochemistry for the C-KIT protein (CD117) (1-5). Fletcher has established the risk stratification based upon tumor diameter and mitotic activity (6). Accordingly, the tumor presented in this case belongs to the category determined by size between 2-5 cm and a mitotic count <5/50 high power fields, which is classified as "low risk". The mean age at the time of diagnosis is 53 years (2). Interestingly, the age of our patient is elderly for the diagnosis of GIST. The majority of the small intestinal GISTs arise from the jejunum and ileum while the duodenum is the least common site (2). Duodenal GISTs are mainly located in the second portion of the duodenum (2, 3). In contrast, in our case the tumour is located in the antimesenteric site of the duodenal wall of the third portion of the duodenum. Most duodenal GISTs present with gastrointestinal bleeding usually associated with melena, occasionally with acute upper gastrointestinal bleeding as in our patient. Various surgical procedures for duodenal GIST, pancreatoduodenectomy, pancreas-sparing duodenectomy, segmental duodenectomy, or local resection, have been described depending on the size and exact site of the lesion (5). Only little evidence is available on the choice of surgical procedures for duodenal GIST. Some argue that a duodenopancreatectomy provides better oncological control, while others support the selective use of a limited resection of the duodenum in order to minimize operative morbidity and mortality (7). Conversely, the pancreatoduodenectomy, which has been used to treat about 40% of the reported duodenal GISTs, may be an excessive means of treating the small GISTs, particularly in bleeding cases. Therefore, small tumors may be treated by local excision and primary closure of the duodenal wall (8). Taken together, existing data suggest that segmental duodenal resection offers equal oncological results to duodenopancreatectomy (9). Cavallini reported the case of a periampullary GIST with a diameter of 3.5 cm that was treated by local excision and duo-

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denal wall defect repair, preferring this more conservative procedure to a duodenopancreatectomy (10). In a series of 14 patients with duodenal GIST, Goh showed that segmental duodenal resection and duodenopancreatectomy have similar results for disease free survival. No local recurrences were observed in both groups (11). In our patient presented here, the tumor was small and located far from the ampulla vateri. Therefore, the operating surgeon performed the wedge resection and then primary anastomosis. The patient is alive without recurrence or metastasis for 30 months. Wedge resection of the duodenum is an alternative treatment for duodenal GISTs that are located at a distance from the ampulla vateri and pancreas, particularly in the presence of acute bleeding.

Conflict of Interest

No conflict of interest was declared by the authors.

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Yazarlar herhangi bir çıkar çatışması bildirmemişlerdir.

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References

1. Miettinen M, Kopczynski J, Makhlof HR, Sarlomo-Rikala M, Gyorffy H, Burke A, et al. Gastrointestinal stromal tumors, intramural leiomyomas, and leiomyosarcomas in the duodenum: a clinicopathologic, immunohistochemical, and molecular genetic study of 167 cases. *Am J Surg Pathol* 2003; 27(5): 625-41. [\[CrossRef\]](#)
2. Joensuu H. Gastrointestinal stromal tumor (GIST). *Ann Oncol* 2006; 17(Suppl 10): 280-6. [\[CrossRef\]](#)
3. Pithorecky I, Cheney RT, Kraybill WG, Gibbs JF. Gastrointestinal stromal tumors: current diagnosis, biologic behavior, and management. *Ann Surg Oncol* 2000;7(9): 705-12. [\[CrossRef\]](#)
4. Lanuke K, Bathe OF, Mack LA. Local excision of duodenal gastrointestinal stromal tumor. *J Surg Oncol* 2007; 95(3): 267-9. [\[CrossRef\]](#)
5. Goh BK, Chow PK, Ong HS et al. Gastrointestinal stromal tumor involving the second and third portion of the duodenum: treatment by partial duodenectomy and Roux-en-Y duodenojejunostomy. *J Surg Oncol*, 2005;91:273-5. [\[CrossRef\]](#)
6. Fletcher CD, Berman JJ, Corless C, Gorstein F, Lasota J, Longley BJ, et al. Diagnosis of gastrointestinal stromal tumors: A consensus approach. *Hum Pathol* 2002; 33(5): 459-65. [\[CrossRef\]](#)
7. Liyanage CA, Abeygunawardhana S, Kumarage S, Deen KI. Duodenum-preserving local excision of a gastrointestinal stromal tumor. *Hepatobiliary Pancreat Dis Int* 2008; 7(2): 214-6.
8. Nagai H, Hyodo M, Kurihara K, Ohki J, Yasuda T, Kasahara K, et al. Pancreas-sparing duodenectomy: classification, indication and procedures. *Hepatogastroenterology* 1999; 46(27): 1953-8.
9. Mennigen R, Wolters HH, Schulte B, Pelster FW. Segmental resection of the duodenum for gastrointestinal stromal tumor (GIST). *World J Surg Oncol* 2008; 6(30): 105. [\[CrossRef\]](#)
10. Cavallini M, Cecera A, Ciardi A, Caterino S, Ziparo V. Small periampullary duodenal gastrointestinal stromal tumor treated by local excision: report of a case. *Tumori* 2005; 91(3): 264-6.
11. Goh BK, Chow PK, Kesavan S, Yap WM, Wong WK. Outcome after surgical treatment of suspected gastrointestinal stromal tumors involving the duodenum: is limited resection appropriate? *J Surg Oncol* 2008; 97(5): 388-91. [\[CrossRef\]](#)