Wedge resection for duodenal stromal tumor

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ABSTRACT

A discrete bleeding tumor of the external aspect of the descending duodenum revealed to be a gastrointestinal stromal tumor (GIST) in a 60-year-old man. Authors discuss the adequacy of the free-margin local resection they opted for thanks to the favorable tumor localization. They conclude that, in spite of the increasing knowledge about GISTs, it still remains an open issue whether performing possible limited resections, looking at the patient's quality of life or extensive resections, looking at a potentially curative approach.

Key words: Duodenum, gastrointestinal stromal tumor, surgical treatment

INTRODUCTION

Gastrointestinal stromal tumors (GISTs) are now regarded as the most frequent stromal neoplasms of the alimentary tract, more commonly found in the stomach (39-70%) and small intestine (20-32%).[6,31] GISTs showing varying degrees of neural or smooth muscle differentiation are found less frequently in a subset of patients with von Recklinghausen's disease and in extraintestinal sites.[4,5]

Only in the late 1990s, it was reported that the neoplastic transformation of the interstitial cells of Cajal or their precursors, would cause GISTs.[6] In more recent years, the discovery of mutations in KIT proto-oncogene by Hirota and coll.[7] led to a deeper knowledge of these tumors and allowed recognize them as a distinct pathologic entity among all stromal tumors.[8] In addition, the development of a rational molecularly targeted therapy with a KIT receptor tyrosine-kinase inhibitor, imatinib mesylate, has opened interesting perspectives of cure for GIST patients.[9]

The aim of the present work was to report a case of bleeding duodenal GIST, favorably located on the external aspect of the descending duodenum, along with an appraisal of the limited surgical approach we opted for.

CASE REPORT

A 60-year-old man, with no previous relevant disease, sought urgent medical care for the occurrence of two-day recurring melaena preceded by one-week intense, inexplicable tiredness. No other symptoms or physical signs were reported or evidenced, apart from a marked cutaneous and mucosal paleness. Blood examination evidenced high-grade anaemia (red blood cell count=1.59 x 10⁶ g/dL, Haemoglobin=4.8 g/dL, Hematocrit=14%), which urged us to do blood transfusion and endoscopy of the upper digestive tract.

At endoscopy, a tumor of about 3 cm in diameter was found in the external aspect of the descending duodenum [Figure 1]. Multiple endoscopic biopsies were taken. On hematoxylin/eosin staining only an epithelioid growth of cells with nuclear atypia was evidenced. Ultrasonography and computerized tomography were able to locate the tumor and to exclude liver metastases, but no other information could be drawn, apart from an unexpected cholelithiasis.
After blood transfusions and routine preoperative investigations, the patient underwent right subcostal laparotomy. On descending duodenum, 3 cm distance from the pylorus, 3 cm well-circumscribed and spherical mass was found, confirming the presence of a transmural, dumbbell-shaped tumor. Because of its favorable localization, a wedge resection with an adjacent margin of apparently normal tissue of about 1 cm was chosen. Frozen sections of the tumor led to the diagnosis of malignant stromal tumor, excluding adenocarcinoma or lymphoma. Nonetheless, a gastroduodenal and hepatic lymphnode sampling was performed anyway. Sub-hepatic drainage placement preceded abdominal closure.

Patient was discharged uneventfully on 10th postoperative day.

A definitive pathologic examination of the specimen reported that resection margins and lymph nodes were disease-free while at immunohistochemistry tumor cells showed positivity for CD117, CD34 and vimentin and negativity for S-100, NSE and actin. These findings, together with the gross and ultra structural features, confirmed the diagnosis of GIST still confined to duodenum [Figure 2].

No postoperative chemotherapy was scheduled. A three-month postoperative endoscopy showed a normal duodenal wound closure. At 6 months after surgery when he reported lastly for follow-up there were neither signs of local recurrence nor any distant metastasis.

Presently, patient is hold on a three-month follow-up regimen.

**DISCUSSION**

Recently, it has been suggested that GISTs should be studied on a site-specific basis, because of differences in behaviour in different sites and that their malignancy should be best described in terms of risk factors. As a matter of fact, uncertainties about their potential malignant spread and the best treatment to be adopted in each case still trouble surgical teams dealing with GISTS. This is all the more true for critical sites, as duodenum, where choosing a conservative surgical approach and a watchful waiting, when technically possible, instead of more extensive operations, translates into weighing the patients’ quality of life against a potentially definitive cure.

In a recent report on 167 cases of duodenal stromal tumors, 15 enucleations, 48 segmental resections (including the whole circumference of a segment of duodenum), 21 wedge resections, 21 Whipple procedures were accomplished. The exact type of surgery was unknown in 51 cases. Apart from tumor localization along the duodenum as well as its local extension, clearly conditioning type and extension of the surgical removal because of technical reasons, it is undeniable that the reported differences in surgical approach make for a wide field of uncertainty and ongoing research and that all the available studies could not provide surgeons with more than mere suggestions for the management of GISTS.

The most surgically relevant questions regard mainly the extent of the resection that could be considered as potentially curative and the need of removing lymph nodes and distant metastasis.

In some studies, GIST patients who had extensive resections reached a better overall survival than those who did not. However, the best width of the tumor-free margins has never been stated.

A regional lymphnode resection is of unproven value and extensive lymphadenectomy is not recommended.
However, if a sampling lymphadenectomy can be easily performed, it could add a further useful information in the event of uncertain pathologic diagnosis and tumor staging.

In the last, there is some evidence that liver or peritoneal metastasectomy can improve survival in selected patients but it could be replaced effectively by chemotherapy with imatinib mesylate which has led to a positive response in more than 50% of the cases.

From a surgical point of view, a free-margin wedge resection of discrete GISTs with a favorable position on the external aspect of the duodenum seems the best option when taking primarily into account the risks of compromising postoperative patients' quality of life by performing more extensive operations which might result unnecessary. So doing, some concerns are unavoidable because coming from uncertainties as to the resection extent that can be deemed potentially curative and as to what the best postoperative management of the patients could be.

REFERENCES


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