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Laparoscopic resection of a gastric schwannoma: A case report

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ABSTRACT

INTRODUCTION: Mesenchymal tumors of the gastrointestinal tract are a group spindle cell tumors which include gastrointestinal stromal tumors, leiomyomas, leiomyosarcomas and schwannomas (Nishida and Hirota, 2000). Schwannomas generally present as a slow and asymptomatic growing mass in the gastrointestinal tract typically arising in the gastric submucosa accounting for up to 0.2% of gastric tumors (Melvin and Wilkinson, 1993; Sarlomo-Rikala M, Miettinen, 1995).
TREATMENT: with negative surgical margin resection (as approached in this case) is considered the standard treatment.
PRESENTATION OF CASE: A 60-year-old woman was referred to our general surgery service for dyspepsia. During her evaluation a gastric mass was incidentally found on upper GI endoscopy which showed a submucosal exophytic neoplasm at the gastric antrum. The patient was discharged following an uneventful recovery from a successful surgical laparoscopic tumor resection.
DISCUSSION: Schwannomas are benign neurogenic tumors that originate from Schwann cells. They commonly occur in the head and neck but are rare in the GI tract (Menno et al., 2010). The differential diagnosis between gastric schwannomas and GISTs can be difficult in the preoperative assessment. With the advent of immunohistochemical staining techniques it is now possible to make a differential diagnosis based on their distinctive immunophenotypes. Gastric schwannomas are consistently positive for S-100 protein and negative for c-kit; conversely, 95% of GISTs are positive for c-kit and negative for S-100 protein in up to 98 to 99% of the cases.
CONCLUSION: Gastric schwannomas should be included in the differential diagnosis of any gastric submucosal mass. Negative margin resection as seen with this patient is the standard surgical treatment as there is low malignant transformation potential.

1. Introduction

Mesenchymal tumors of the gastrointestinal tract are formed by a group of tumors of spindle cells which include gastrointestinal stromal tumors, leiomyomas, leiomyosarcomas and schwannomas [1]. Among these neoplasms GISTs are the most common, (up to 60–70%) most of them arising in the stomach [2,3]. Schwannomas generally present as a slow and asymptomatic growing mass and they rarely appear in the gastrointestinal tract and when they do, they commonly arise in the gastric submucosa and account for up to 0.2% of gastric tumors [4,5]. Owing their typical presentation as submucosal neoplasms with spindle cell histology, gastric schwannomas and GISTs are macroscopically alike [2,6]. Both gastric schwannomas and GISTs occur predominantly in middle-aged patients [1,5] and are clinically similar presenting no relevant features [1,4,7]. Gastric schwannomas are benign tumors with an excellent prognosis [5,6,8], whereas 10–30% of GISTs have malignant behavior [1,2,9]. Conventional diagnostic imaging methods will not differentiate between these two common mesenchymal tumors. Indeed, imaging and endoscopic modalities do not provide distinctive hallmarks to make a precise diagnosis [8,10]. There is not enough evidence that imaging features alone can disclose a gastric schwannoma, therefore an immunohystochemical stain should aid the final diagnosis. In this paper, we present a 60-year-old woman with a gastric mass who underwent laparoscopic wedge gastric tumor resection under the suspicion of a GIST preoperatively but confirmed to have a gastric schwannoma postoperatively.

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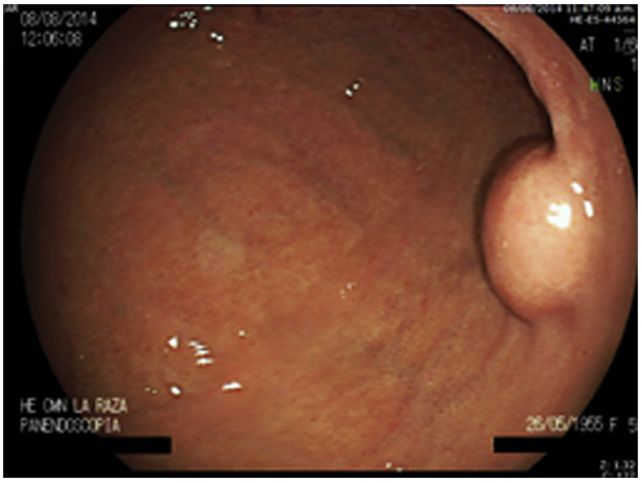

Fig. 1. Upper endoscopy showing a gastric submucosal mass in the antrum.

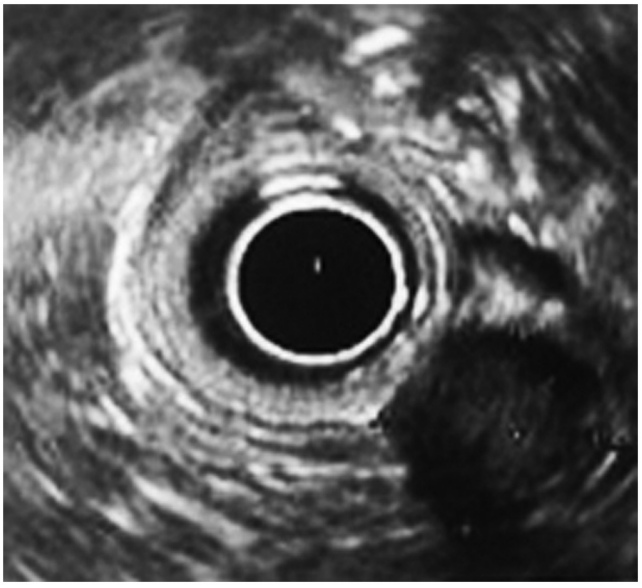

Fig. 2. Endoscopic ultrasound showing a hypo echogenic lesion at the gastric antrum. Features suggestive of GIST.

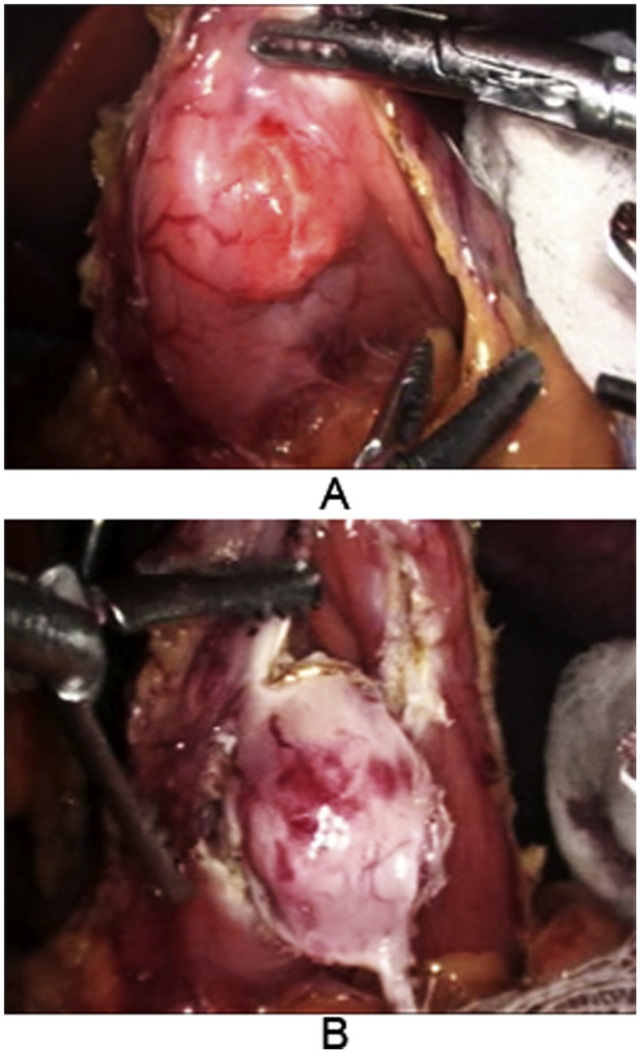

Fig. 3. A. A 2 × 2 cm gastric tumor seen after dissection of gastrocolic ligament in posterior surface of gastric antrum. B. resection of gastric tumor with harmonic scalpel.

2. Presentation of case

A 60 year old woman was referred to our general surgery service. The reason for her initial visit was dyspepsia as her only complain was intermittent gastric discomfort in response to solid foods. Her medical history was significant for depression successfully treated with paroxetin with no abnormalities found on physical exam. During her evaluation, a gastric mass was incidentally found on upper GI endoscopy (Fig. 1) which showed a submucosal exophytic mass in the gastric antrum with normal overlying gastric mucosa. Biopsy specimens obtained at the endoscopy yielded only unspecific signs of mild inactive chronic inflammation without evidence of malignancy, no neoplastic or cytological alterations were found. A subsequent endoscopic ultrasound showed an exophytic mass measuring 1.6 × 1.3 cm arising from the gastric antrum showing low echogenicity (Fig. 2), EUS-guided fine needle aspiration (FNA) was performed. Aspirate smears showed spindle cell tissue fragments consistent with the diagnosis of GIST. An abdominal CT scan was obtained rendering no important diagnostic information. After presenting the case at our gastrointestinal surgical expert team, a consensus was reached to proceed with resection. The patient was counseled about the surgical options and offered an elective laparoscopic surgical tumor resection. After informed consent was obtained, the patient was taken to the operating room where she was placed in supine position under general endotracheal anesthesia. The abdomen was prepped and draped in a sterile fashion. Pneumoperitoneum was achieved at 12 mm of mercury, and four additional trocars were placed under direct vision. The stomach was mobilized by opening the gastrocolic ligament. Following mobilization of the greater curvature, a large exophytic mass along in the gastric antrum close to the pylorus was clearly identified. We isolated the mass from the stomach and suspended it with laparoscopic intestinal non traumatic graspers (Fig. 3). Harmonic scalpel was used for dissection; we then retrieved the specimen (the mass with a portion of the gastric wall) through an endocatch bag through the supraumbilical port and was sent to pathology for analysis. Closure of the surgical defect was promptly accomplished in two planes with a deep plane of non absorbable (polypropylene) suture with simple interrupted stitches and a superficial plane with Lembert invaginating stitches, the rest of the abdominal cavity was visualized without any additional abnormalities. The patient had a brief in hospital uneventful recovery. The final pathologic study revealed a neoplastic mass comprised of spindle cells of varying cellularity with a submucosal nature (Fig. 4). There was lympho-