



GASTRIC SCHWANNOMA: THE GIST SIMULATOR

Schwannoma gástrico: o simulador de GIST

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INTRODUCTION

Schwannomas also known as neurilemoma, are rare tumors that emerge from peripheral nervous system, particularly Schwann cells. The gastrointestinal location is very rare being the stomach the most affected organ. However, gastric schwannoma represents only 0,2% of all gastric tumors. Usually they have benign prognosis, but malignant transformation has been described. Symptoms are usually vague and depend on the localization^{1,3,4,11}.

In this case report we present a patient with an antral submucosal gastric tumor that received totally laparoscopic resection.

CASE REPORT

A 56-year-old woman, with hypertension, hypothyroidism, clinical history of six months of epigastric pain, without vomits, dysphagia, jaundice, fever or weight loss, and no specific founding at physical examination, presented for consultation.

The upper endoscopy shown an anterior antral submucosal tumor of 5 cm, with no ulceration (Figure 1).

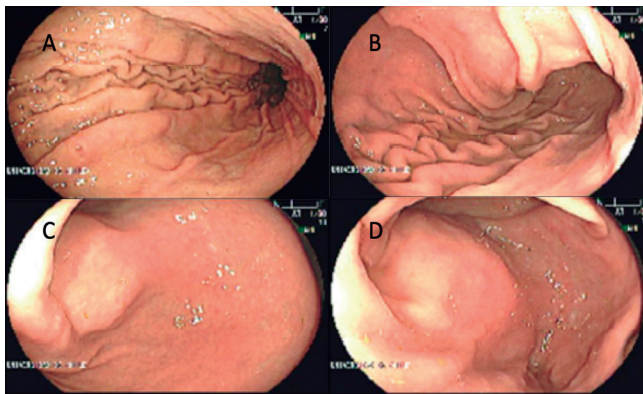


FIGURE 1 - Upper gastrointestinal endoscopy: A) gastric body; B) impression of submucosal tumor at the anterior surface of gastric angle; C and D) antral submucosal tumor without mucosal erosion.

The abdominopelvic CT scan showed an anterior antral submucosal exophytic solid tumor of 5.2x4.8 cm, without celomic, lymphatic or visceral metastasis (Figure 2).

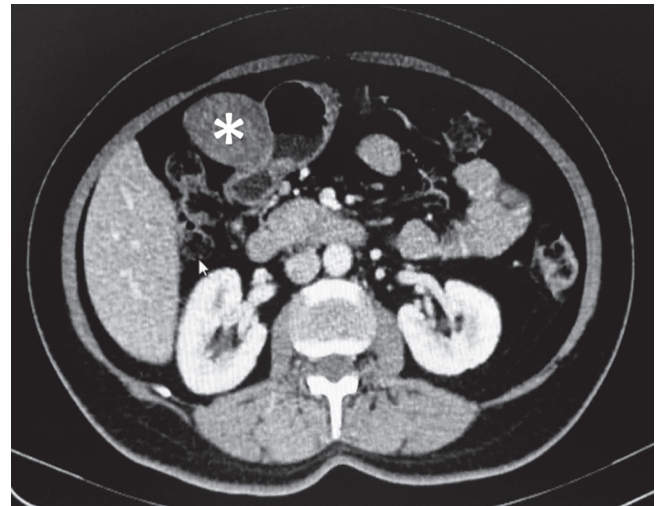


FIGURE 2 - Pre-operative axial image of abdominopelvic CT: *) anterior antral solid exophytic tumor of 5.2x4.8 cm

With the diagnosis of an antral GIST, the patient underwent laparoscopic exploration and resection of the lesion. A 15-mmHg pneumoperitoneum and four trocars (one of 5 mm and three of 12 mm) were used. A 6 cm exophytic gastric tumor was found in the same position described by the endoscopy and CT. Dissection of the greater curvature was performed to access the lesser omentum and posterior wall of the stomach. After passing a 36F bougie through the pylorus, a total resection of the tumor was performed with two staplers (Figure 3 and video 1).



<https://www.youtube.com/watch?v=2epiw-x9Mig>

VIDEO 1 - GASTRIC SCHWANNOMA: THE GIST SIMULATOR



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HEADINGS: Gastric tumor. Gastric schwannoma. Neurilemoma. Mesenchymal tumor. Laparoscopic surgery.

DESCRITORES: Tumor gástrico. Schwannoma gástrico. Neurilenoma. Tumor mesenquimal. Cirugía laparoscópica.

How to cite this article: Figueroa-Giralt M, Orellana O, Herranz JM. Gastric schwannoma: the GIST simulator. ABCD Arq Bras Cir Dig. 2021;34(3): e1590. DOI: /10.1590/0102-672020190004e1590

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Financial source: none
Conflict of interest: none
Received for publication: 09/04/2020
Accepted for publication: 23/02/2021

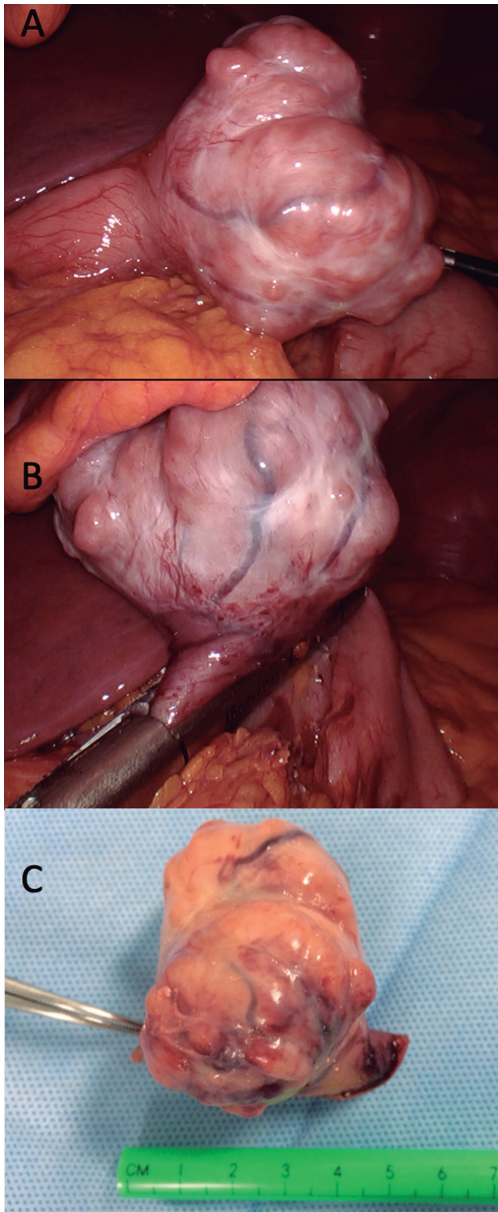


FIGURE 3 – Surgical aspects: A) anterior antral exophytic tumor with expansive growing; B) resection of the tumor with mechanical suture with laparoscopic stapler; C) tumor resected.

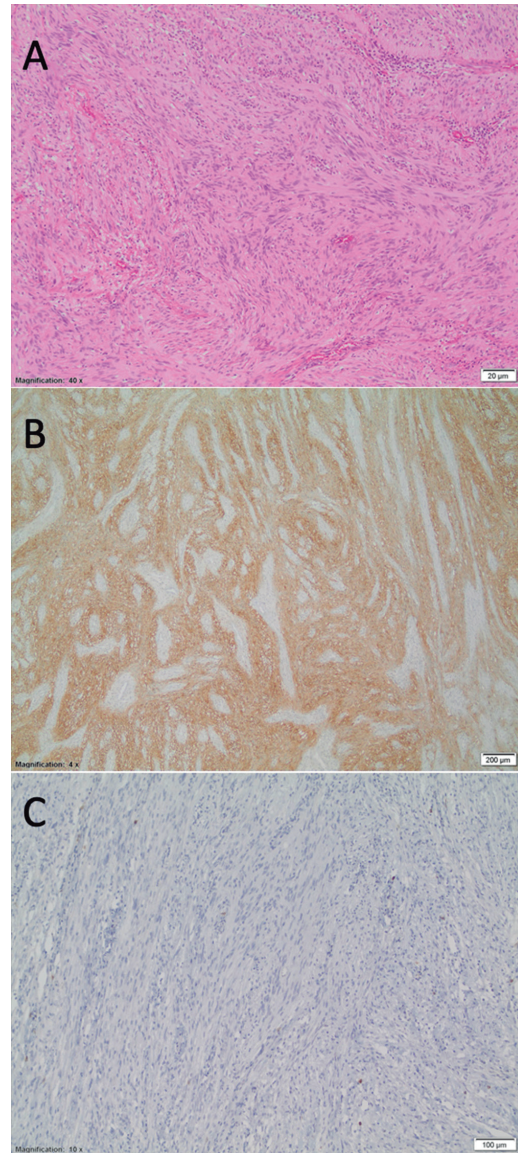


FIGURE 4 - Histologic examination: A) mesenchymal neoplasia composed of fused cells with elongated nuclei and sharp edges with little pleomorphism and mitotic count from 0 to 2/50 HPFs and cells in areas are arranged forming palisades (H&E 40x); B) intense and diffuse positive in cells under study (S100); C) negative in cells under study (CD117).

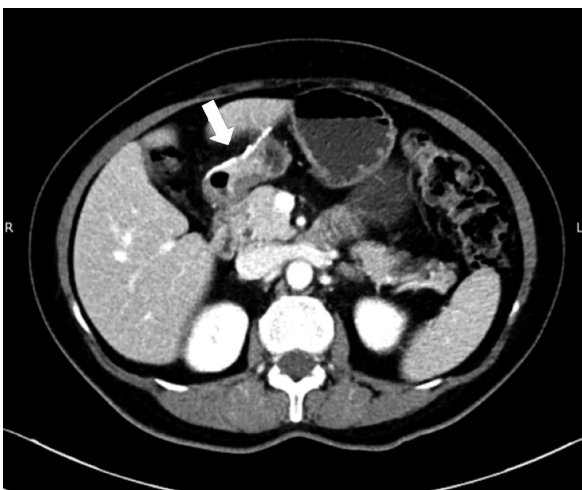


FIGURE 5 - Postoperative axial image of abdominopelvic CT (arrow=tumor resected)

The patient had a good recovery from surgery, initiating oral intake at 24 h after surgery and was dismissed at the 3th postoperative day with no postoperative complications.

The histopathologic examination showed a 6.2x5 cm gastric schwannoma, with 0-2/50 field mitotic count, non-necrosis, free margin, S100 highly positive, actine negative, desmin negative, CD34 negative, CD 117 negative, COG1 negative, KI67 nuclear positive in 5% of cells (Figure 4).

After discussion at the oncology committee, a surveillance conduct was decided. At eight months follow up the patient had no signs of surgical or oncologic complication (Figure 5).

DISCUSSION

Submucosal gastrointestinal tumors have three different histological groups: GIST, myogenic (leiomyomas or leiomyosarcomas), and neurogenic tumors (schwannomas, granular cell tumors and neurofibromas). In the neurogenic group 91% are schwannomas, and the most frequent locations are stomach (60-70%) and colorectal. Gastric schwannoma represents 5% of nonepithelial

gastric tumors^{8,9,11}.

As described by Bruneton¹ and Mekras⁸ the majority of the patients with gastric schwannoma are women, between the 6-7th decade of life. Usually they are asymptomatic, but when they require surgery, 42-88% have abdominal pain, 25-65% gastrointestinal bleeding and 10-25% weight loss. The localization is usually at the body (50%) or antrum (32%) and the size is less than 10 cm in 88% of cases, and less than 5 cm in 48% of them. In our case report, this demographic, clinical and anatomical characteristics are present.

Endoscopic and tomographic study are the first line approach, but they cannot differentiate accurately between GIST, myogenic and neurogenic tumors¹¹. A second line of study is the endoscopic ultrasound with guided biopsy, but the cost and availability should be considered, especially if the lesion is located at the gastric wall, which usually has in experience groups a comfortable surgical access and low morbidity in case of resection. In our case the preoperative diagnosis was a presumed GIST, principally because it is the most frequent gastric submucosal mesenchymal tumor. Considering the symptoms and little additional benefit of endoscopic ultrasound, we decided to perform a total resection of the tumor.

Surgical therapy is the cure in most cases without any other adjuvant therapy. The surgical approach depends on the tumor size, localization, surgeon experience and preference. The most important thing is to achieve negative margins, and to do so, resections could be from an economic enucleation and suture, to a partial or total gastrectomy. Because of the nature and frequency of this tumor, the literature available consist in case reports^{1,8}, case series^{3,14}, case-controls studies⁴ and reviews^{6,9,11,14}. Many of the reports doesn't declare the surgical approach, some of them specified a laparoscopic one^{8,13}. As we mentioned before, in trained groups a laparoscopic approach with hemostatic sealant technology and staplers, are comfortable, short and safety procedures, that also contribute with all the benefit of minimally invasive surgery².

The pathologic examination is the key to differentiate between all subtypes of submucosal gastric tumors. Before the advances in immunohistochemical stain, the majority of this tumors were diagnosed as leiomyoma and leiomyosarcoma, but now with the advent of c-Kit, DOG1 and CD34 which are usually positive in GIST, SMA and desmin positive in leiomyoma, S100 positive in schwannoma.

After free margin surgery the prognosis is excellent, some argue that the risk of malignant transformation is theoretical, and that histologic findings such as tumor size and mitotic rate have

no prognostic significance^{8,14}, but since malignant schwannoma have been described^{1,7,10,12} and the follow-up in tumors larger than 10 cm or with a mitotic rate >10/50 HPFs is limited, a clinical, endoscopic and tomographic surveillance should be considered according to each patient¹⁴.

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