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ORIGINAL ARTICLE

GASTRIC SCHWANNOMA: A POSTOPERATIVE SURPRISE A CASE REPORT

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ABSTRACT
Gastric Schwannoma is a rare, slow-growing, and clinically non-specific submucosal tumor, originating from Schwann cells with excellent prognosis after surgical resection.
We report a clinical case of a patient presented with gastric schwannoma revealed by non-specific gastric signs and of which the definitive diagnosis is done through immunohistochemistry of the resected specimen, showing strong S100 protein positivity. The evolution is favorable after a partial gastrectomy with a decline of two years. Through this case, we are trying to trace the rarity, strong similarities with gastric stromal tumors and especially, the weak index of suspicion for this diagnosis.

KEY WORDS: Gastric schwannoma; Submucosal tumor; Partial gastrectomy; S-100 protein.

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INTRODUCTION:
Gastric Schwannoma (GS) is a rare tumor, included in the group of gastrointestinal mesenchymal tumors, next to Gastro-intestinal stromal tumors (GISTs), leiomyomas, and leiomyosarcomas. It constitutes only 0,2% of all gastric neoplasms [1]. It originates from Schwann cells responsible for myelin gain at the level of the peripheral nervous system [2]. In general, it is a benign tumor with an excellent prognosis after total resection [3]. However, uncommon cases of malignant transformation have been reported [4]. We report the case of a 43-year-old patient, who was presented with a submucosal gastric tumor, and of which the immunohistochemistry of the gastrectomy specimen established this rare postoperative diagnosis.

CASE REPORT:
A 43-year-old-patient, without any noticeable medical history, presented with torsional intermittent severe epigastric pain during one month, partly relieved by gastric acid antisecretories and antispasmodic prescribed as symptomatic treatment. Pain is associated with both anorexia and weight loss, without vomiting or externalized gastrointestinal bleeding. Physical examination revealed a right hypochondrium mass. Furthermore, it did not show ascites or Troisier's sign. Biological tests were normal. An injected abdominal TDM has showed a heterogenous parietal gastric mass, roughly rounded, moderately taking the contrast and developing in the gastric lumen within the gastric fundus, suggesting a GIST (Figure 1 and 2).

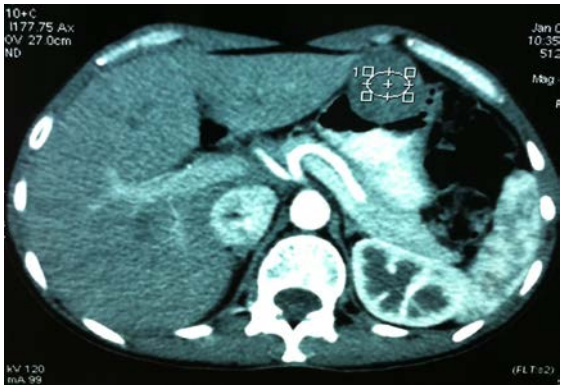

Figure 1 : Cross sectional abdominal CT showing a gastric parietal mass.

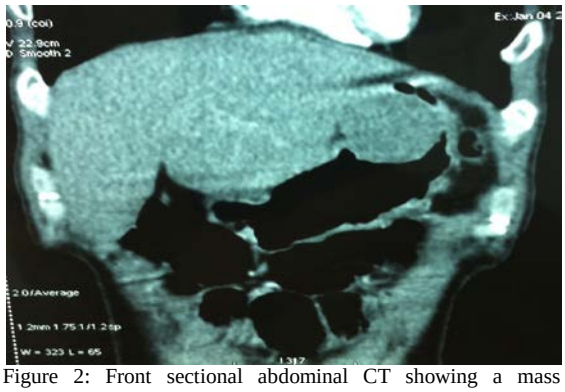

Figure 2: Front sectional abdominal CT showing a mass protruding into the gastric lumen.

The esophagogastroduodenoscopy objectified an exophytic process of the antro-fundic junction, which has an estimated diameter of 5cm, and covered with macroscopically normal mucosa. Several biopsies were performed. Echoendoscopy showed that this well circumscribed mass is developed at the expense of the muscularis mucosa, and that it presents a heterogeneous structure, both hypo- and hyperechoic. In addition, no invasion or satellite adenopathy were found (Figure 3).

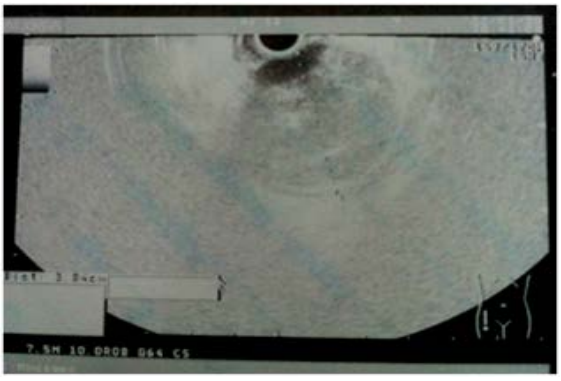

Figure 3: Endoscopic ultrasound (EUS) shows a 5 cm-sized heterogeneous structure, both hypo- and hyperechoic developed at the expense of the muscularis mucosa.

Performed biopsies concluded an active and non-athrophic chronic fundic gastritis, without objectifying neoplasic cells or Helicobacter Pylori on performed samples. Considering the strong probability of the benignity of the tumor, we did not resort to percutaneous biopsy and the operative indication was established immediately.After obtaining consent from the patient, we performed a laparotomy, of which the exploratory part showed the gastric parietal mass of the greater curvature and no hepatic metastasis or deep adenopathies. We opted for a partial gastrectomy, removing the mass along with negative margins, and a gastrojejunal anastomosis at the end. The anatomophatology study showed a yellow-white, homogenous submucosal nodular tumor measuring approximately 5cm bulging on the serous part of the stomach. Histologically, it is considered a fusocellular proliferation consisting of elongated cells and epithelioid in each site. The immunohistological study of tumor cells revealed a CD117 and CD34 negativity, a strong S100 protein positivity, focally AML positive, and a Ki67 index of tumor cells inferior to 5%. This morphological and immunohistochemical profile was consistent with a gastric schwannoma (Figure 4).

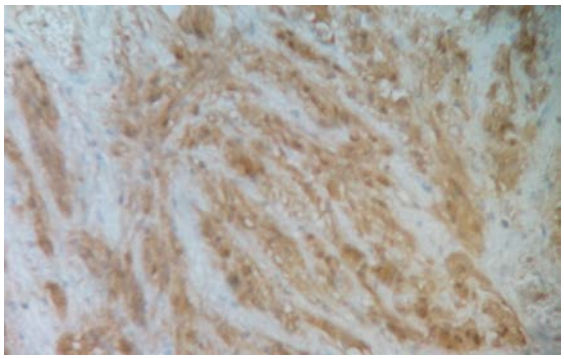

Figure 4: Immunohistochemistry (IHCS) findings: the tumor strongly stains for S-100

The patient postoperative period was uneventful, and she was regularly followed-up for two years without any clinical or radiological recurrences.

DISCUSSION:

Despite strong morphological similarities, gastrointestinal mesenchymal tumors constitute a group of heterogeneous of immunophenotypes. In the past, Gastric Schwannomas and GIST were usually classified as Leiomyomas and Leiomyosarcomas, or autonomic nerve tumors (1,2, 5, 6). In 1988, Daimaru identified Schwannoma due to S100 protein positivity in immunohistochemistry (3, 5, 6). It is an asymptomatic tumor in most cases, slow-growing and incidentally discovered, or with non-specific symptoms such as the case of our patient whose epigastric pain, anorexia, and weight loss prompted her consultation (7-9). Preoparatory diagnosis remains difficult even with modern means of imaging which cannot identify if this kind of neoplasm is benign or malign (10, 11).

Diagnostic approach in terms of GS usually opposes the incapacity to have a histological proof before we operate the patient, however, some imaging features orient more

towards a GS than a GIST, notably: homogeneous fixation of the iodic contrast product and the more slow development(12).

The contrast-enhanced CT performed on our patient was favoring a GIST of a grossly round shape and a moderate contrast enhancement, but the changing profile of the tumor was not studied. Concerning esophagogastroduodenoscopy, it lacks specificity for the GS, the biopsies do not give a diagnosis since the mucous anomalies are rarely observed in these submucosal tumors (7, 8). The biopsies performed on our patient revealed a concomitant fundic chronic gastritis. If schwannomas and GIST look like similar tumors due to their histological origin, their submucosal development and clinical manifestation, however, their prognosis is completely different.

Usually GS is considered as a benign tumor, but GISTs have malignant behavior in 10-30% of cases (6, 12). Consequently, the differential diagnosis of submucosal gastric mass should include GS in spite of its rarity.

S100 protein positivity, in the immunohistochemical study, constitutes the key of the histological diagnosis (3, 5, 12). The tumor cells of our patient are negative for CD117 and CD34, and have strong S100 protein positivity. AML focally positive and Ki67 index of tumor cells is inferior to 5%, which is an immunohistochemical profile consistent with GS.

For William Yoon, once GS is diagnosed or suspected, complete margin negative surgical resection warrants a curative treatment (6). We have opted for a 2/3 gastrectomy and a gastrointestinal anastomosis

CONCLUSION:

In this clinical case, we reported a rare stomach neoplasm found in a 43-year-old woman presented with epigastric pain, anorexia, and weight loss. Clinical and paraclinical investigations oriented towards a submucosal gastric tumor, and the patient benefited from a partial gastrectomy and a gastrojejunal anastomosis. The immunohistochemical profile was favoring a GS. It is rarely preoperatively suggested in front of a well limited submucosal tumor due to its rarity and especially to its strong clinical and morphological similarities with a stomach GIST. However a homogeneous contrast enhancement on CT and slow evolution are usually noted.

ABBREVIATION

CT: Computed Tomography
GIST: Gastro-intestinal stromal tumor
GS: Gastric Schwannoma
EUS: Endoscopic ultrasound

PATIENT CONSENT

Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

COMPETING INTERESTS

The authors declare no competing interests.

AUTHORS' CONTRIBUTIONS

The participation of each author corresponds to the criteria of authorship and contributorship emphasized in the Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly work in Medical Journals of the International Committee of Medical Journal Editors. Indeed, all the authors have actively participated in the redaction, the revision of the manuscript and provided approval for this final revised version.

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