

TREATMENT OF POSTERIOR GASTRIC WALL GASTROINTESTINAL STROMAL TUMOR WITH GASTRIC SLEEVE: A CASE REPORT

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ABSTRACT

Gastrointestinal stromal tumors (GISTs) are the most common non-epithelial tumors of the gastrointestinal tract. The most usual location is the stomach, followed by the small intestine, where it may cause digestive bleeding and anemia. Surgical resection of the tumor is the gold standard treatment, and definitive diagnosis is based on immunohistochemical analysis of the surgical specimen. We report the case of a 53-year-old man with gastric GIST presenting with endophytic and exophytic growth, located at the posterior wall of the stomach, in the antrum-body transitional zone, treated with gastric sleeve.

Keywords: *Gastrointestinal stromal tumors; gastrointestinal neoplasms; gastric sleeve; diagnosis; prognosis; treatment*

Gastrointestinal stromal tumors (GISTs) are the most common non-epithelial tumors of the gastrointestinal tract (GIT)¹ and account for approximately 0.1-3% of all gastrointestinal tumors². Its histological origin is related to the interstitial cells of Cajal, which act on the physiological control of peristaltic activity as an electric smooth muscle pacemaker. GISTs may affect any segment of the GIT, from the esophagus to the anus, where they have worse prognosis³. The sites of higher incidence are stomach (50-60%) and small intestine (25%), followed by colon and rectum (10%) and esophagus (< 5%)^{1,4}. GISTs may also occur in the peritoneum, omentum and mesentery^{1,5}. Most tumors are asymptomatic or present inconsequential symptoms such as abdominal pain (43%), upper gastrointestinal bleeding (15%) and palpable abdominal mass (17%), in addition to chronic anemia^{5,6}. They occur most commonly in men and after 50 years of age⁵. Definitive diagnosis is based on immunohistochemical analysis of the surgical specimen, with search for the presence of CD117 receptors (c-kit)⁷. The gold standard treatment is surgical resection of the tumor with negative margins (R0), with no need for lymphadenectomy as lymph node involvement is very rare¹. In cases of malignant GIST, recurrence or when there is no possibility of resection, imatinib mesylate, a tyrosine kinase inhibitor, can be used as a treatment option⁸.

CASE REPORT

A 53-year-old Caucasian man, ex-smoker, presented with history of gout and complained of melena and anemia, requiring blood transfusion. Hemoglobin level was 8.7 mg/dL. Physical examination was normal. Upper digestive endoscopy demonstrated a lesion in the posterior gastric wall, in the antrum-body transitional zone, with a nodular formation of 5 cm adhered to deep structures, ulcerated and with recent signs of bleeding. An abdominal computed tomography (CT) scan identified a solid lesion in the gastric body compromising all the layers, measuring 6.4 × 4.2 × 4.1 cm (Figure 1). Based

Clin Biomed Res. 2018;38(3):297-300

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on endoscopic and CT findings, the diagnostic suspicion was gastric GIST. The patient underwent videolaparoscopy, which detected a tumor in the posterior wall of the gastric antrum, next to the greater curvature, with endophytic and exophytic growth. The chosen approach was gastric sleeve surgery. Calibration of the gastric tube was maintained with Fouchet probe, and the lesion was treated with full resection with negative margins, which was confirmed by intraoperative frozen section examination. The resected surgical specimen (Figure 2) was removed from the abdominal cavity through a small magnification of the right hypochondrium, using a specimen retrieval bag. Pathology examination revealed an oval cell tumor measuring 6.3×4.5 cm and presence of three

mitoses per 50 high-power field (HPF). No tumor necrosis or angiolymphatic and perineural invasion was identified, and the surgical limits were free of neoplasm. Metastasis was absent in seven resected perigastric lymph nodes. Tumor-free surgical margin measured 0.8 cm. Immunohistochemical study was performed using the indirect immunoperoxidase method with diaminobenzidine. Microscopically, neoplastic cells exhibited positive antibodies for DOG1, c-kit (CD117) and Ki-67 (5%). There were no positive antibodies for actina, desmina, CD34 and S100. Therefore, the diagnosis of GIST with fusocellular and epithelioid pattern was reached, with proliferative index of 5%.

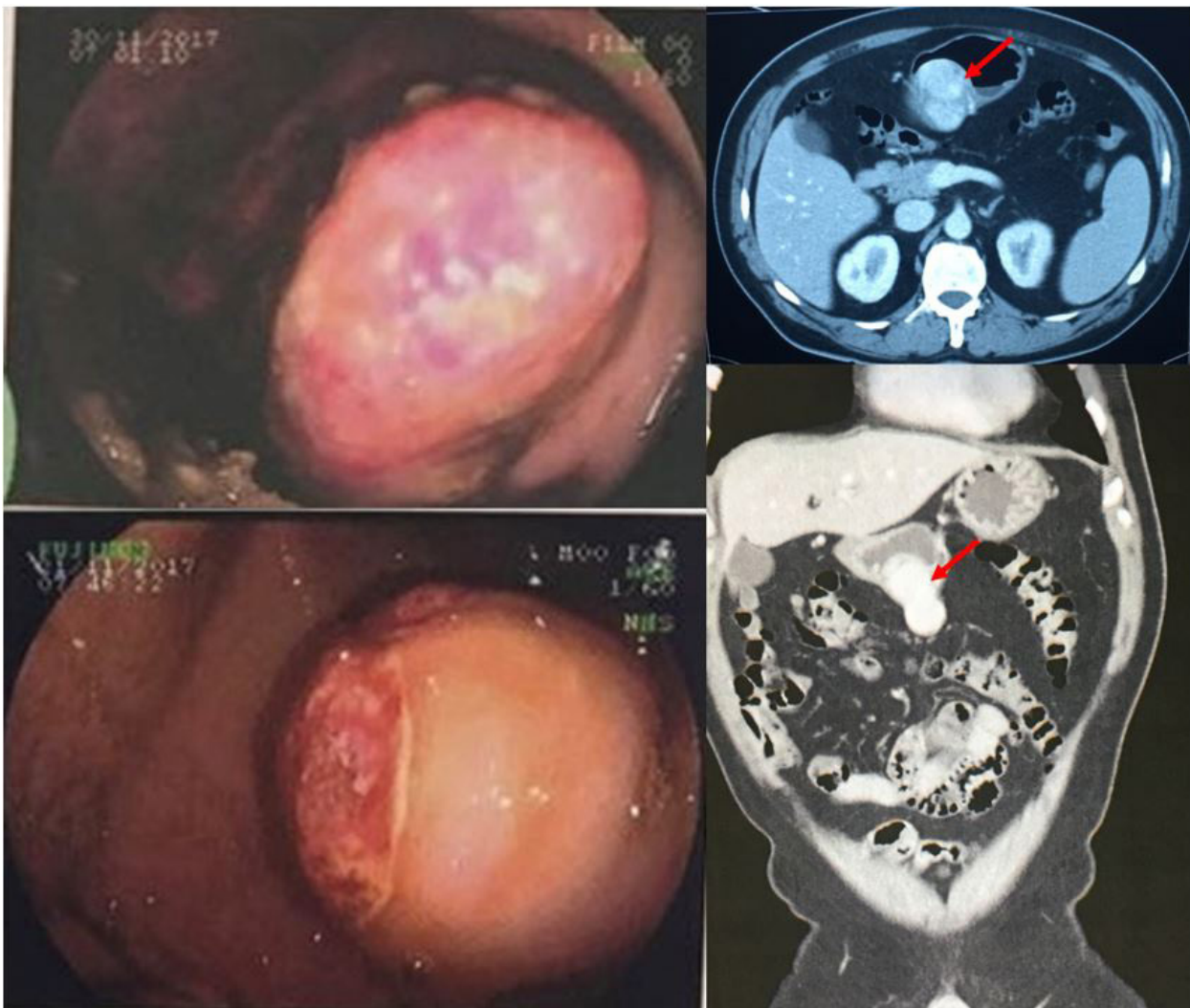


Figure 1: Upper digestive endoscopy and computed tomography scan showing a protruding, ulcerated lesion of the posterior wall of the gastric antrum.

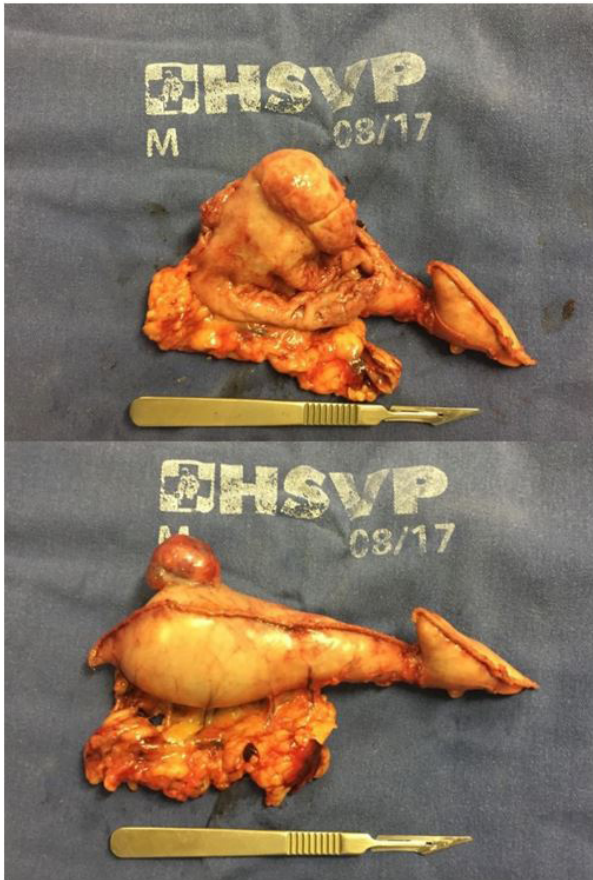


Figure 2: Resected lesion showing exophytic and endophytic growth.

DISCUSSION

GISTs may arise at any part of the GIT³ and at any age, with a higher incidence at 60 years. In addition, they affect men and women equally^{4,9}. The main morphological parameters of differentiation of biological behavior related to malignancy and benignity are based on the size of the lesion and the number of mitoses per HPF⁵. Regarding immunohistochemical characteristics, CD117 protein, which is expressed in about 95% of GISTs, is helpful to differentiate them from other sarcomatous tumors of the GIT.

On CD117-negative lesions, the marker DOG1 is useful for diagnosis as it is detected in approximately 97% of the cases. Other immunohistochemical markers such as SMA, S100 protein, PKC theta and desmin are also helpful⁵. The gold standard treatment is surgical resection of the tumor with negative margins (R0). Lymphadenectomy is not required because longitudinal submucosal spread with consequent lymph node involvement is very rare¹. In some restricted cases, neoadjuvant administration of imatinib mesylate can be used to induce downstaging and, consequently, to improve rates of R0 resections, disease-free survival and overall survival when compared to upfront surgery. Furthermore, adjuvant therapy with imatinib mesylate is indicated for specific cases, such as tumor measuring more than 5 cm, more than 5 mitoses per 50 HPF, malignancy behavior, recurrence or when there is no possibility of resection¹⁰. With regard to the surgical technique, resection with a margin of 1-2 cm is usually recommended, although microscopic margins that are negative for tumor cells are sufficient for complete and curative resection¹¹. During surgery, when removing the surgical specimen, caution should be taken in order not to cause tumor capsule rupture. In case of rupture, the disease progresses with peritoneal dissemination, given that there is a 100% chance of relapse, at least at the peritoneal level¹². The surgical removal of the specimen must be done using a specimen retrieval bag in cases of videolaparoscopic approach, to avoid tumor capsule rupture inside the abdominal cavity. The surgical approach for the resection will depend on the tumor site. Typically, resections are easier in the stomach than in the duodenum due to the anatomic relationships with important structures¹, for example. The prognosis of patients with GIST varies according to lesion location. Gastric lesions present the best prognosis, followed by small bowel, colorectal and extragastrointestinal GISTs¹³.

Conflicts of Interest

The authors declare no conflicts of interest.

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Received: Feb 8, 2018

Accepted: June 19, 2018