

Gastrointestinal Stromal Tumor as Cause of Obscure Gastrointestinal Bleeding: A Case Report

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Abstract— We present a case a 74-year-old female patient with gastrointestinal bleeding of obscure origin. Even after complex complementary exams, no definitive diagnosis was possible. Surgical cavity inventory found a pedunculated mass of approximately 10.0 centimeters on its largest axis on the antimesenteric border of the distal ileum. The segment with the lesion was resected, and end-to-end enteroanastomosis was performed in a single plane. Pathologic examination of the mass demonstrated a gastrointestinal stromal tumor. The patient evolved satisfactorily, without evidence of new episodes of gastrointestinal bleeding, and was referred to the clinical oncology service.

Index Terms— Hematochezia, abdominal pain, intestinal neoplasia, case report.

I. INTRODUCTION

Gastrointestinal stromal tumors (GISTs) are the most common mesenchymal tumors of the gastrointestinal tract, accounting for 1% of all tumors (1). They originate from mutations in the interstitial cells of Cajal in the myenteric plexus and intestinal submucosa, which function as the intestinal motility pacemaker (2,3). It is estimated that the clinical incidence of GISTs is 1 in 100,000 people a year (3). The highest incidence occurs in individuals over 50 years of age, mean age ranging between 60 and 65 years. Their incidence in children is very low (2), and they tend to affect men more often than women (4).

The most common sites for the occurrence of GISTs are the stomach (60-70%), small intestine (20-30%), colon and rectum (5%), and esophagus (<5%). They are rarely found in epiploon, omentum and retroperitoneum (1,2,3).

GISTs presentation and clinical manifestation vary widely, regardless of their size. Generally, symptomatic patients may present with various complaints and signs, such as abdominal pain, fatigue, dyspepsia, nausea, anorexia, weight loss, fever and bowel obstruction. Some patients may have palpable abdominal masses, and tumor size is one of the factors influencing symptoms (1). Gastrointestinal tract bleeding (acute or chronic) is the most common clinical presentation of

GISTs (5). Bleeding occurs due to mucosal involvement or rupture of the tumor itself (1), with perforation being the rarest complication (6). It is estimated that 10% of GISTs are detected in more advanced stages with the tumor already disseminated (4).

Although surgery is the primary curative treatment of primary tumors, up to 40% of patients may present recurrence of the disease (3).

In the present case, we report on a patient with a history of gastrointestinal bleeding of obscure origin.

II. CLINICAL CASE

A 74-year-old female patient sought the emergency service of the Regional University Hospital of Maringá, Brazil with a history of intermittent and progressive lower gastrointestinal bleeding, characteristic of hematochezia, associated with weakness and pallor. Symptoms had started 6 months before, and in one episode 3 months before treatment, blood transfusion was required due to important blood loss. The patient did not present abdominal pain, fever, vomiting or weight loss. As for comorbidities, the patient presented systemic arterial hypertension and congestive heart failure, under regular treatment. The patient was referred by her gynecologist after ultrasound follow-up diagnosis demonstrated a pelvic mass, which was considered to be a uterine fibroid by the specialist. Laboratory tests and upper gastrointestinal endoscopy were initially requested, which demonstrated enanthematous gastritis of moderate-intensity with no signs of active or recent bleeding. Colonoscopy examination revealed blood clots in the cecum and ascending colon without obvious lesions or signs of recent bleeding that justified the bleeding. The topographic hypothesis for the cause of the hemorrhage was the terminal ileum. Computed tomography examination of the abdomen with double contrast showed an expansive lesion of heterogeneous aspect in the pelvis, measuring 9.0 x 8.0 cm, as well as absence of lymph node enlargement, and gastrointestinal segments without other alterations or lesions (*Figure 1*).

Clinically, the patient evolved with a significant drop in her hematocrit values, requiring four packed red cells blood transfusions during hospitalization. Moreover, the patient presented bronchopneumonia, which was treated with antibiotic therapy for ten days. She remained hospitalized without a definitive diagnosis. An abdominal scintigraphy was performed, which showed signs suggestive of bleeding in the ascending colon region. Capsule endoscopy demonstrated neither the origin nor the etiology of the bleeding.

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Figure 1. Pelvic mass of heterogeneous content found on computed tomography of the abdomen pelvis

After 3 days without further bleeding episodes, the patient was discharged from the hospital, being instructed to return on an outpatient basis to follow up on the ongoing investigation. However, twenty days after hospital discharge, the patient returned to the emergency service with recurrence of the symptoms resulting from bleeding, and was submitted to a new hemotransfusion of two packed red blood cells with indication for exploratory laparotomy with the possibility of intraoperative endoscopy.

During surgical cavity inventory, conducted with a transverse laparotomic incision, a pedunculated mass of approximately 10.0 centimeters on its largest axis was found on the antimesenteric border of the distal ileum, fifty centimeters from the ileocecal valve, proximally (Figure 2). A segmental enterectomy was performed and the lesion was resected, followed by end-to-end enteroanastomosis in a single plane.

The patient presented a very satisfactory postoperative evolution without evidence of new episodes of digestive bleeding, no further complications, being discharged five days postoperatively. Pathologic examination revealed a predominant fusocellular neoplasia, with epithelioid areas of low mitotic degree, free margins, and a high risk of progression due to the size of the lesion. The patient was referred to the clinical oncology service to initiate the use of adjunctive imatinib.



Figure 2. Mass found in distal ileum in the transoperative

III. DISCUSSION

The clinical case presented here is in agreement with previous literature findings. Most GIST cases tend to evolve asymptotically, remaining silent until they reach large sizes (1).

Due to the rapid expansion of pathological and molecular knowledge of stromal tumors of the gastrointestinal tract, GISTs have received much attention, with new possibilities of treatments and therapeutic strategies. However, the causes of this type of tumor are yet to be established, and prevention still far from adequate.

After the recommended upper and lower gastrointestinal bleeding investigation, midgut bleeding investigation should also be performed, including upper and lower digestive endoscopy (5). Capsule endoscopy should be performed whenever available, but the literature recommends that the initial evaluation should include complementary exams such as computed tomography of the abdomen and pelvis, including enterotomography, which may exhibit an exophytic primary tumor of heterogeneous content (2). Additionally, angiotomography may play an important role during the investigation of cases of gastrointestinal bleeding of obscure origin, as it is possible to use contrast in arterial and venous phases for better accuracy of the anatomical region involved, as well as the possibility of identifying intraluminal extravasation.

When the identification of a tumor is possible, the biopsy, if accessible, should be performed endoscopically with a fine needle guided by endoscopic ultrasound or by tomography. However, obtaining a biopsy prior to the surgical approach is not mandatory, which can be performed either laparoscopically or more conventionally. The anatomopathological investigation of the lesion is essential to establish the histological diagnosis and plan the adjuvant or neoadjuvant chemotherapy treatment in cases with metastasis (2).

The recommended method to define the prognosis of the lesion and to determine the risk of malignization involves tumor size and mitotic rate (4). Approximately 25% of

tumors located in the stomach and 50% of tumors located in the small intestine are considered malignant, with metastases occurring in the intra-abdominal area, particularly the liver, and to a lesser extent, soft tissues, bones and skin. Metastases can occur many years after surgical treatment of primary tumors (up to more than 15 years). Hence, although the literature makes no reference to specific recommendations on the best strategy, long-term follow-up is required (5,6).

Regarding the treatment of primary GISTs, surgery is still the curative standard therapy. Approximately 60% of the patients diagnosed with GISTs will be cured only by surgery, while the remaining 40% may develop recurrence of the disease.

The gold standard for GIST surgery continues to be laparotomy, following the same principles defined for sarcomas surgeries. However, recent retrospective studies have demonstrated success with the use of laparoscopy with GISTs <5 cm. Laparoscopy is less invasive, presents better esthetic results in the short term, and similar oncologic outcomes to those of laparotomy in the long term. However, studies on small intestine and colorectal GISTs are still limited. Staplers and collection bags are used in laparoscopy to prevent capsular disruption and tumor implants. Some associated techniques during the same surgical time, such as endoscopic and laparoscopic resection, have already been used in gastrointestinal GISTs, but still require further studies (3).

As prophylactic lymphadenectomy is not required in most GISTs, minor surgeries such as wedge resections can be considered if it is interesting to preserve the function of the organ in question, but always maintaining the oncological safety margin. Pathologic analysis of the mass is essential for diagnosis, risk assessment, while genotyping may be complementary for those patients with high risk of recurrence.

When unresectable, metastatic or recurrent, treatment with modified/molecularly-oriented agents such as imatinib, sunitinib and regorafenib is indicated (1).

IV. CONCLUSION

While there are still a large number of GISTs of subclinical manifestation that do not need to be removed (micro and mini GISTs). most GISTs diagnosed in clinical practice are considered potentially malignant. Even though many GISTs can not yet be identified as malignant or benign by endoscopic or radiological methods, endoscopic ultrasonography with fine needle biopsy should be employed, whenever feasible, for an initial evaluation of the malignant potential of these tumors. Surgical procedure or endoscopic resections should not be indicated on clinically benign tumors unless they become symptomatic (3,5).

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REFERENCES

- [1] Zhao X, Yue C. Gastrointestinal stromal tumor. *J Gastrointest Oncol*. 2012;3(3):189-208. doi:10.3978/j.issn.2078-6891.2012.031.
- [2] Beham AW, Schaefer IM, Schüler P, Cameron S, Michael Ghadimi B. Gastrointestinal stromal tumors. *Int J Colorectal Dis*. 2012;27(6):689-700. doi:10.1007/s00384-011-1353-y.
- [3] Nishida T, Goto O, Raut CP, Yahagi N. Diagnostic and treatment strategy for small gastrointestinal stromal tumors. *Cancer* 2016;122(20):3110-3118. doi: 10.1002/cncr.30239.
- [4] Miettinen M, Lasota J. Gastrointestinal stromal tumors. *Gastroenterol Clin North Am*. 2013;42(2):399-415. doi:10.1016/j.gtc.2013.01.001.
- [5] Reuter S, Bettenworth D, Mees ST, Neumann J, Beyna T, Domschke W, Wessling J, Ullerich H. A typical presentation of a rare cause of obscure gastrointestinal bleeding. *World J Gastrointest Endosc* 2011; 3(2): 40-45. doi: 10.4253/wjge.v3.i2.40.
- [6] Barbosa JAL, Aguiar N, Osório FMC, Gouveia A, Pimenta A. Tumor estromal gástrico: A propósito de uma complicação rara e grave. 2008;6(II):46-48.

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