Case Report

Megastomach caused by a pyloric schwannoma in a young woman

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ABSTRACT

Schwannomas are mesenchymal tumors that are characteristically benign and slow growing, which originate from any nerve with schwann cell sheath. Here, we report the case of a 28-year-old woman patient who was diagnosed with stomach obstructive lesions causing severe gastric dilatation. She underwent distal gastrectomy and the histopathological examination of the tumor revealed one obstructive gastric schwannoma.

Key words: Gastrointestinal schwannoma, Intestinal obstruction, Schwannoma, Stomach schwannoma

Gastric outlet obstruction is a mechanical obstruction caused by various benign and malignant conditions. Malignancies, such as pancreatic head cancer, advanced gastric cancer, and duodenal cancer, are the most common etiologies. Benign conditions include post-ulcer stenosis and pancreatic fluid collections [1].

Schwannoma, a benign peripheral nerve sheath tumor originating from schwann cells, is difficult to diagnose solely based on imaging, such as computed tomography (CT) or endoscopic ultrasonography. For this reason, the final diagnosis is usually made by surgical resection [2]. Schwannomas of the gastrointestinal (GI) tract originate from the schwann cells of the Auerbach plexus and their most frequent location is the stomach. The definitive diagnosis is made by immunohistochemical analysis of the surgical specimen and its resection is curative [3].

We report a case of a gastric subepithelial lesion with a post-operative surgical and histopathological diagnosis of schwannoma. Due to its prepyloric location, a voluminous gastric distention with significant nutritional impairment was associated with the condition.

CASE REPORT

A 28-year-old woman was admitted to the digestive surgery outpatient clinic with a clinical history of epigastric abdominal pain associated with reduced food intake, early satiety, post-feeding vomiting, and weight loss of 24 kg in 3 months.

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She was emaciated, with a body mass index of 18.3 kg/m^2. The physical examination highlighted the patient's weight loss and the presence of a flat abdomen, with little excavation, associated with epigastric and mesogastric distention, with moderate bloat on percussion, and with evident liquid/gas content repressed in the stomach.

The laboratory tests showed chronic anemia, associated with hypocalcemia, hypoproteinemia with hypoalbuminemia, hypoglycemia, and coagulation disorder with a wide international normalized ratio. In view of the clinical picture presented by the patient, she was hospitalized and underwent a diagnostic investigation. Upper digestive endoscopy was performed, which showed a large gastric chamber associated with concentric stenosis of the pre-pyloric region, which prevented the progression of the apparatus, but no changes were observed in the local mucosa (Fig. 1).

The endoscopic biopsy was inconclusive, demonstrating mild chronic gastritis, with a biopsy for the search for negative *Helicobacter pylori* bacteria. Due to the exuberant dilatation of the gastric chamber observed during the upper digestive endoscopy, contrast-enhanced stomach radiography was requested and performed, which showed the presence of a megastomach associated with stenosis of the pyloric region (Fig. 2).

DISCUSSION

The conduct considered fundamental for the beginning of the treatment was nutritional support, which was performed by the passage of a nasoenteric tube, given the debilitated nutritional status presented by the patient. A multidisciplinary treatment approach is a

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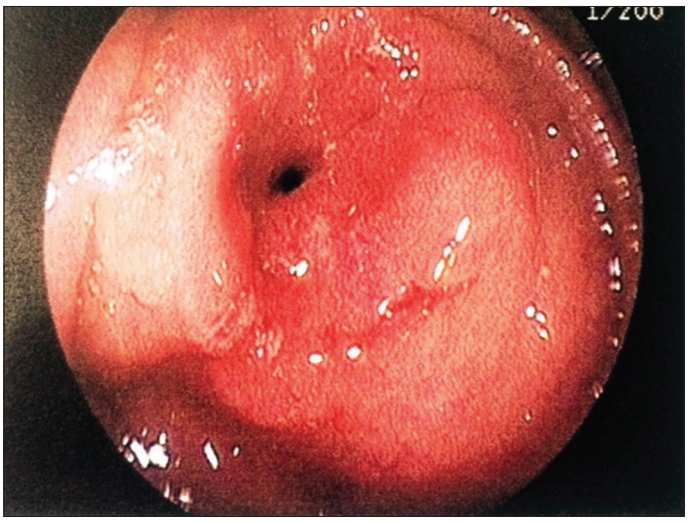

Figure 1: Upper digestive endoscopy showed a large gastric chamber associated with concentric stenosis of the pre-pyloric region, which prevented the progression of the apparatus

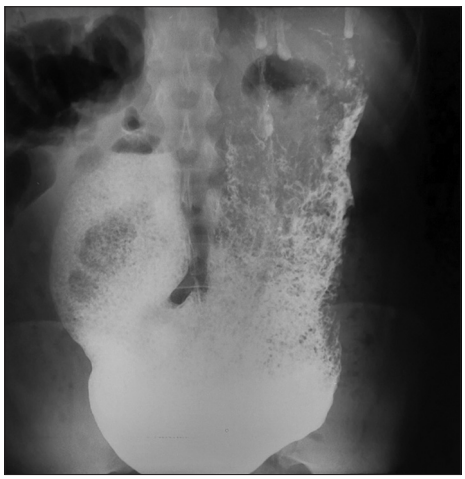

Figure 2: Contrast-enhanced stomach radiography showed the presence of a megastomach associated with stenosis of the pyloric region

standard in the management of the blockage of the distal stomach or duodenum. After 20 days of intensive nutritional support, the patient underwent partial gastrectomy with Roux-en-Y reconstruction. The post-operative pathological anatomical examination concluded that the obstructive lesion originated from a gastric schwannoma.

Patients with obstructive lesions often present with symptoms related to impaired gastric emptying due to the obstruction, including nausea, vomiting, inability to tolerate oral intake, and anorexia with a history of significant weight loss, malnutrition, dehydration, and electrolyte abnormalities, which make patients suboptimal candidates for a complex abdominal operation.

Possible management strategies for symptom relief in patients include endoscopic stent placement, surgical resection, surgical gastrojejunostomy bypass, decompressive gastrostomy, and feeding jejunostomy tube placement [4]. The previous research indicates that gastric schwannomas account for 0.2% of all gastric tumors, 4.0% of all benign gastric tumors, and 6.3% of all gastric mesenchymal tumors [5,6]. A marked female preponderance has been reported and the tumor is generally found in patients aged 40–60 years. Surgical *en bloc* resection or partial resection may be effective for gastric schwannomas, but the size, location, and surrounding structure of the tumor will lead to different surgical outcomes [5].

The diagnosis of a gastric schwannoma can occur from incidental findings of imaging tests, such as in the upper digestive endoscopy and CT [7]. On endoscopy, both schwannoma and GI stromal tumor (GIST) are visualized as an elevated submucosal mass, ulcerated, or not. This makes them indistinguishable at this level, requiring a biopsy for immunohistochemical analysis. CT is a complementary tool in the diagnosis, allowing to define the location and extent of the tumor. In it, the schwannoma is homogeneous, with an exophytic growth pattern and cystic changes are uncommon [6,7]. Although the aforementioned examinations help in the diagnostic investigation, only a pathological and immunohistochemical analysis of the surgical specimen after tumor removal can definitively confirm the diagnosis. Schwannomas have intense immunostaining for protein S100 and glial fibrillary acidic protein, and negative staining for CD117, desmin, and SMA. It is also important to note that the tumor does not present mutations in the c-KIT and PDGFRA genes, both involved in the pathophysiology of GIST [7-10].

However, because of its excellent follow-up outcome, endoscopic surgery is also an effective and safe therapy for gastric schwannomas. Such procedures include endoscopic submucosal dissection, endoscopic full-thickness resection, and ligation-assisted endoscopic enucleation. Lymph node dissection is not required because gastric schwannomas, which are usually benign, are unlikely to metastasize to the lymph nodes [5].

CONCLUSION

In the case report, the authors discuss a case of gastric obstruction that resulted in marked dilatation of the stomach anatomy, with repercussions on the patient's nutritional status. Pre-operative nutritional support was essential as an initial step in the treatment of the clinical condition presented.

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