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Esophagogastric Leiomyoma: Therapeutic Approach - A Case Report and Literature Review

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ABSTRACT

Gastric leiomyomas are uncommon benign tumors that occur in only 2.5% of all gastric neoplasms. Although often asymptomatic, larger or strategically located tumors can cause symptoms such as gastrointestinal bleeding or postprandial discomfort. Diagnosis requires a combination of imaging, endoscopic evaluation

and histopathology analysis. Treatment is primarily surgical, with laparoscopic approaches being preferred due to their minimally invasive nature and reduced risk of postoperative complications.

Keywords: Oeso-gastric leiomyoma, benign gastric tumor, laparoscopy, wedge resection.

INTRODUCTION

Leiomyoma are benign, slow-growing submucosal tumors originating from smooth muscle cells that rarely are located on the gastric wall and occur in only 2.5% of all gastric neoplasms 1. They consist of a pseudocapsule and tumor mass that is made up of areolar tissue and extracellular matrix that includes collagen, elastin, reticular fibers, and spindle cells, which typically exhibit a low mitotic index and if mitotic activity is present on the histological examination, malignancy should be considered 2. The standard treatment for these lesions is Gastric leiomyomectomy and laparoscopic abord had made many benefic for patients in many aspects 3. We present the case of a posterior oeso-gastric leiomyoma in a 48 years old female and discuss its epidemiological features, diagnostic approch and therapeutic management in the light of the existing literature.

PATIENT AND OBSERVATION

A 48-year-old female patient, with no significant medical history, presented with a 4-year history of chronic epigastric pain associated with vomiting, without external gastrointestinal bleeding or other associated symptoms, evolving in the context of preserved general health.

Clinical examination revealed a patient in good general condition, with a Performance Status of 1. Abdominal examination showed mild epigastric tenderness without any palpable mass. Pelvic examinations showed no abnormalities. Esophagogastroduodenoscopy demonstrated a normal-looking esophageal mucosa and micro-erosive and atrophic antral-fundic gastritis.

Histopathology results from the gastric biopsy indicated moderate antral-fundic gastritis, moderately active, without metaplasia or dysplasia. Helicobacter pylori was detected (+), and no malignancy was observed.

Abdominal CT scan revealed a tissue process involving the posterior wall of the stomach with exophytic growth in contact with the external arm of the adrenal gland, suggestive of a stromal tumor measuring 38 mm.

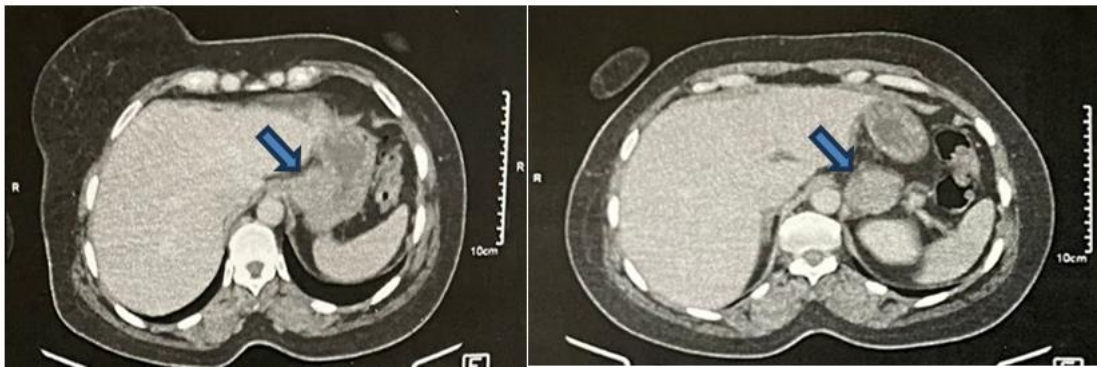

Figure 1: Axial slide of abdominal CT scan showing the process

The hemogram was normal, with hemoglobin at 12.5 g/dl and white blood cell count of 7,700/mm^3. Tumor markers were negative, with CEA <1 U/mL and CA19.9 at 2.3 U/mL.

The approach was laparoscopic, with the placement of a 10-mm trocar for the optical port at the umbilicus, a 12-mm trocar in the right flank, and two 5-mm trocars, one in the left flank and another in the epigastric region.

During exploration, a pedunculated retro-gastric mass was found, originating from the lesser curvature of the stomach, specifically at the gastroesophageal junction. The mass measured 4 cm in its largest axis, with no invasion of neighboring structures. No peritoneal effusion, carcinomatosis nodules, or liver metastases were observed.

The intervention consisted of an atypical gastrectomy removing the mass via laparoscopy, with drainage of the omental bursa using a Salem tube.

Postoperative recovery was uneventful, with good clinical progression.

The histopathological examination of the surgical specimen revealed morphological and immunohistochemical features consistent with a completely excised esophagogastric leiomyoma.

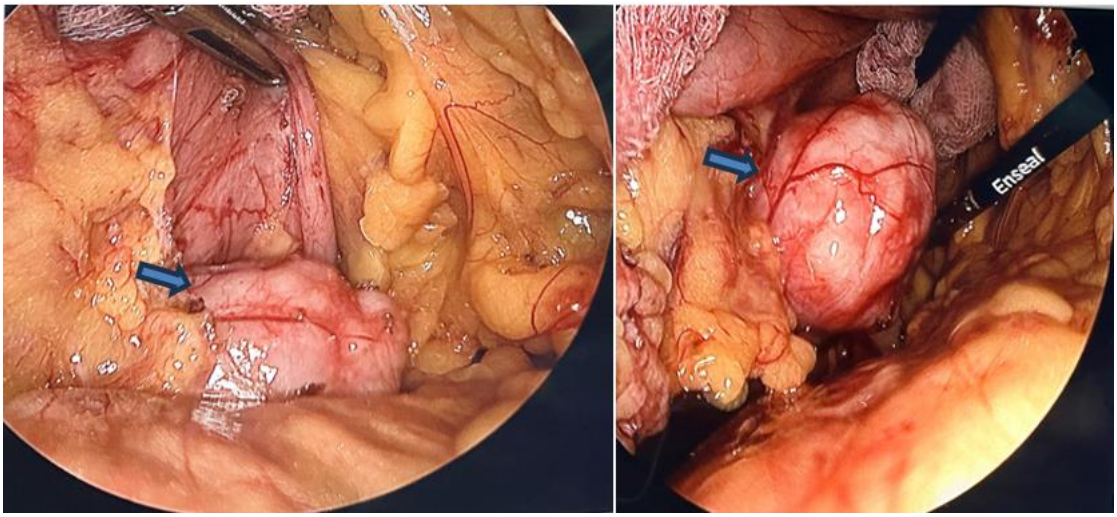

Figure 2: per operative image showing a a pedunculated retro-gastric mass

DISCUSSION

Leiomyomas are a rare type of gastric tumor, most commonly observed in individuals aged 50 to 70 years, though they can occur across a wide age range, from 2 to 75 years old, without any gender predilection 4. Clinical manifestations vary based on the tumor's size, location, and development type 5. While most leiomyomas are asymptomatic, some patients may experience postprandial fullness, gastrointestinal bleeding, heartburn, nausea, or vomiting 6.

Endoscopic gastroduodenoscopy typically reveals a smooth, well-defined mass with mucosal folds overlying the lesion, known as Schindler's sign 1. However, standard endoscopy often struggles to biopsy these tumors due to their submucosal location. Endoscopic ultrasound

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which combines endoscopy and ultrasound, is usefull in better defining the tumor's characteristics and allows for fine-needle aspiration, enabling histological diagnosis 7, 8. Immunohistochemical analysis of leiomyomas shows positivity for desmin, muscle actin, beta-catenin, and vimentin, with negativity for CD1 (c-kit), DOG1, S100, CD117, and Ki-67 9.

A critical differential diagnosis includes gastric adenocarcinoma, which may arise from heterotrophic gastric glands or gastrointestinal stromal tumors (GISTs). Unlike leiomyomas, GISTs are malignant mesenchymal tumors that stain positive for CD34. Gastric schwannomas are another differential diagnosis, distinguishable by their homogeneous attenuation and strong S100 positivity, coupled with DOG1 negativity 10, 11, 12. Additionally, gastric lipomas, though rare benign stomach tumor, may be considered, particularly in patients without gastrointestinal bleeding histories 13, 14.

Intervention becomes necessary when gastric leiomyomas cause symptoms 7. Complications may include intraperitoneal discharge due to mucosal ulceration, gastric volvulus, tumor torsion, and hemorrhage 15.

The primary treatment for gastric leiomyomas is surgical resection, either open or laparoscopic. The choice of surgical approach depends on the tumor's size and location. Laparoscopic wedge resection with endo-stapling guns is the standard treatment, optionally performed with ultrasound or endoscopic guidance. This minimally invasive method is preferred for reducing postoperative complications like atelectasis and pneumonia. Alternative techniques include laparoscopic intragastric resection for tumors unsuitable for wedge resection and laparoscopic gastrostomy and resection 16, 17, 18.

CONCLUSION

Leiomyomas are rare, benign smooth muscle tumors of the stomach that can affect individuals across a wide age range, with no gender predilection. While often asymptomatic, they may present with gastrointestinal symptoms such as postprandial fullness, bleeding. Diagnosis typically involves endoscopic and histopathological evaluation, with endoscopic ultrasound playing a key role in identifying tumor characteristics and enabling fine-needle aspiration for definitive diagnosis. Differential diagnoses include malignant conditions such as GISTs and gastric adenocarcinomas, which can be distinguished by their unique immunohistochemical and imaging features. Surgical resection remains the mainstay of treatment for symptomatic leiomyomas, with laparoscopic techniques offering significant advantages, including reduced postoperative complications and quicker recovery.

Conflicts of interest: The authors declare no conflict of interest.
Consent for publication: All patients consented to the publication of the presented results.
Author contributions: All authors have contributed to the conduct of this work. All authors also declare that they have read and approved the final version of the manuscript.

References

1. Ramai D, Tan QT, Nigar S, Ofori E, Etienne D, Reddy M: Ulcerated gastric leiomyoma causing massive upper gastrointestinal bleeding: a case report. Mol Clin Oncol. 2018, 8:671-4. 10.3892/mco.2018.1597

2. Florence AM, Fatehi M: Leiomyoma. StatPearls Publishing, Treasure Island, FL; 2023.

3. Matsuda T, Nunobe S, Kosuga T, Kawahira H, Inaki N, et al. (2017) Laparoscopic and luminal endoscopic cooperative surgery can be a standard treatment for submucosal tumors of the stomach: A retrospective multicenter study. Endoscopy, 49: 476-483.

4. Hilal L, Barada K, Mukherji D, Temraz S, Shamseddine A (2016) Gastrointestinal (GI) leiomyo-sarcoma (LMS) case series and review on diagnosis, management and prognosis. Medical Oncology, 33: 20.

5. Nonaka S, Oda I, Saito Y (2019) Diagnosis and treatment of superficial gastric neoplasms. In Clinical Gastrointestinal Endoscopy pp: 349-366.

6. Tarcoveanu E, Bradea C, Dimofte G, Ferariu D, Vasilescu A (2006) Laparoscopic wedge resection of gastric leiomyoma. JSLS, 10: 368-374.

7. Naz S, Afzal M, Sarwar H, et al. Gastric leiomyoma and its management: a rare occurrence. Oncol Cancer Case Rep 2019;5(2):154.

8. Val-Bernal JF, Martino M, Terán A, et al. Endoscopic ultrasound-guided fine-needle aspiration cytology in the diagnosis of leiomyomas of the gastrointestinal tract. Rev Esp Patol 2019;52(3):154-62. DOI: 10.1016/j.patol.2018.09.003

9. Jones et al. Open Gastrostomy of a Gastric Leiomyoma Proximal to the Gastroesophageal Junction: A Case Report. Cureus 16(5): e59810. DOI 10.7759/cureus.59810

10. Wada K, Tazawa H, Komo T, et al.: Gastric adenocarcinoma appearance in leiomyoma: a case report . Int J Surg Case Rep. 2020, 71:327-30. 10.1016/j.ijscr.2020.05.050

11. Nishida T, Yoshinaga S, Takahashi T, Naito Y: Recent progress and challenges in the diagnosis and treatment of gastrointestinal stromal tumors. Cancers (Basel). 2021, 13:3158. 10.3390/cancers13133158

12. Lyros O, Schickel S, Schierle K, Hoffmeister A, Gockel I: [Gastric schwannoma: rare differenzial diagnosis of acute upper gastrointestinal (GI) bleeding]. Z Gastroenterol. 2017, 55:761-5. 10.1055/s-0042-114576

13. Georgiev A, Tsvetkova S, Aleksova L, Ali M: Gastric lipoma of the pylorus - case report of an incidental finding. Radiol Case Rep. 2021, 16:1882-4. 10.1016/j.radcr.2021.04.054

14. Sabbah M, Nakhli A, Helal I, Bellil N, Ouakaa A, Gargouri D: Gastrointestinal bleeding as an initial manifestation of gastric lipoma: case report and review of the literature. Clin Case Rep. 2020, 8:1988-92.10.1002/ccr3.3050

15. Nonaka S, Oda I, Saito Y (2019) Diagnosis and treatment of superficial gastric neoplasms. In Clinical Gastrointestinal Endoscopy pp: 349-366.

16. Berr F, Hochberger, J, Oyama T (2019) Sub-epithelial gastro-intestinal tumors diagnosis and indications for resection in atlas of early neoplasias of the gastrointestinal tract. Springer. pp: 63-78.

17. Lee MJ, Lim JS, Kwon JE, et al.: Gastric true leiomyoma: computed tomographic findings and pathological correlation. J Comput Assist Tomogr. 2007, 31:204-8. 10.1097/01.rct.0000237812.95875.bd

18. Cho JW: Current guidelines in the management of upper gastrointestinal subepithelial tumors . Clin Endosc. 2016, 49:235-40. 10.5946/ce.2015.096

URL: http://dx.doi.org/10.14738/bjhr.1201.18312.