

Incidentally detected gastrointestinal stromal tumor during sleeve gastrectomy: A case report

Faruk Yazıcı¹, Muhammed Salih Süer², Serkan Demir³, Mehmet Burkey Karakulak⁴, Aysun Gökçe⁴

¹University of Health Sciences Türkiye, Etimesgut Martyr Sait Ertürk State Hospital, Department of General Surgery, Ankara, Türkiye

²University of Health Sciences Türkiye, Ankara Etlik City Hospital, Department of General Surgery, Ankara, Türkiye

³Yerköy Martyr Lieutenant General Osman Erbaş State Hospital, Clinic of General Surgery, Yozgat, Türkiye

⁴University of Health Sciences Türkiye, Ankara Etlik City Hospital, Department of Pathology, Ankara, Türkiye

Cite this article as: Yazıcı F, Süer MS, Demir S, Karakulak MB, Gökçe A. Incidentally detected gastrointestinal stromal tumor during sleeve gastrectomy: a case report. *Gulhane Med J*. [Epub Ahead of Print]

Date submitted:

30.04.2026

Date accepted:

16.06.2026

Epub: 15.10.2026

Corresponding Author:

Serkan Demir, MD, Yerköy Martyr Lieutenant General Osman Erbaş State Hospital, Clinic of General Surgery, Yozgat, Türkiye
serkandemir_60@hotmail.com

ORCID:

orcid.org/0009-0008-1187-7883

Keywords: Sleeve gastrectomy; gastrointestinal stromal tumor; bariatric surgery; incidental tumor

ABSTRACT

We report an incidentally detected gastrointestinal stromal tumor (GIST) in a 61-year-old male (body mass index 43.7 kg/m²) who underwent laparoscopic sleeve gastrectomy, despite unremarkable preoperative endoscopy and imaging. The lesion was identified only on routine histopathological examination of the resected specimen and was classified as low-risk, requiring no adjuvant therapy; at 18-month follow-up, the patient remained disease-free. The interesting aspect of this case is that a clinically silent GIST escaped detection by both endoscopy and cross-sectional imaging, becoming apparent only through systematic pathological evaluation of the sleeve specimen. The clinical message is that routine histopathological examination of all bariatric specimens is essential, as it remains the most reliable means of identifying such incidental tumors and guiding appropriate postoperative surveillance.

Introduction

Obesity is a chronic disease associated with significant comorbidities, including cardiovascular disease, type 2 diabetes mellitus, malignant neoplasms, asthma, osteoarthritis, chronic back pain, obstructive sleep apnoea, non-alcoholic fatty liver disease, and gallbladder diseases (1-3). Laparoscopic sleeve gastrectomy (LSG) has become one of the most frequently performed bariatric procedures due to its efficacy, low complication profile, and favorable hormonal effects (4,5).

Gastrointestinal stromal tumors (GISTs) are the most common mesenchymal tumors of the gastrointestinal tract, originating from the interstitial cells of Cajal. They are immunohistochemically characterized by CD117 (c-KIT) and DOG-1 positivity. Because GISTs are often asymptomatic, they may be detected incidentally during endoscopy, imaging, or surgery performed for unrelated conditions (6,7).

Several case reports and small series have described incidental GISTs encountered during LSG (8-10). Although rare,

their detection carries important clinical implications regarding pathological assessment, risk stratification, and postoperative surveillance. Herein, we present such a case and discuss its management in the context of current literature.

Recent technological advances, including Internet of Things-based platforms, have begun to support postoperative care after bariatric surgery by enabling remote monitoring of weight loss trajectories and adherence to follow-up recommendations (11).

Case Report

A 61-year-old male patient with morbid obesity (body mass index 43.7 kg/m²) and hypertension, and no prior abdominal surgery, presented for bariatric evaluation. He had no gastrointestinal symptoms. Following a four-month preoperative preparation program, upper gastrointestinal endoscopy and abdominal imaging were performed; no pathological findings were identified.

LSG was performed uneventfully under general anesthesia. No intraoperative complications were encountered. Oral intake was initiated on postoperative day 2, and the patient was discharged on postoperative day 3.

Routine histopathological examination of the resected gastric specimen revealed an intramural, well-circumscribed lesion measuring 0.8×0.5×0.5 cm, located at the proximal gastric body. The tumor was composed of spindle-shaped cells with moderate eosinophilic cytoplasm, without necrosis or cytologic atypia. Mitotic activity was 2 figures per 5 mm². Surgical resection margins were clear (R0). Immunohistochemical analysis demonstrated diffuse moderate-to-strong positivity for DOG-1 and CD117 (c-KIT); Ki-67 proliferation index was below 10% (Figures 1 and 2).

According to the modified National Institutes of Health risk classification, the lesion was categorized as low-risk (Prognostic Group 1), with an estimated progression rate of 0%. Based on these findings, no adjuvant oncologic therapy was indicated. The patient was enrolled in a structured surveillance program with clinical assessment and cross-sectional imaging every six months. At 18 months of follow-up, he remained asymptomatic with no evidence of recurrence or metastasis.

Written informed consent was obtained from the patient for publication of this case report and accompanying images. Ethics committee approval was not required for this study, as it represents a single-patient retrospective case report involving

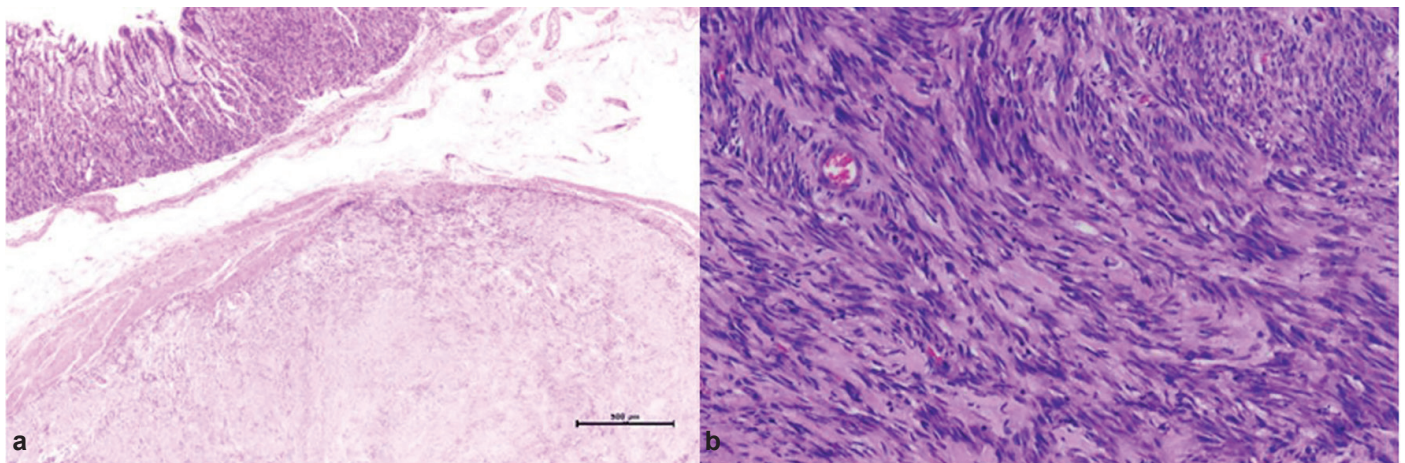


Figure 1. a) Gastrointestinal stromal tumor, H&E ×40. A well-circumscribed, intramurally located tumor. b) Gastrointestinal stromal tumor, H&E ×200. Tumor tissue composed of spindle-shaped cells without evident pleomorphism
H&E: Hematoxylin and eosin

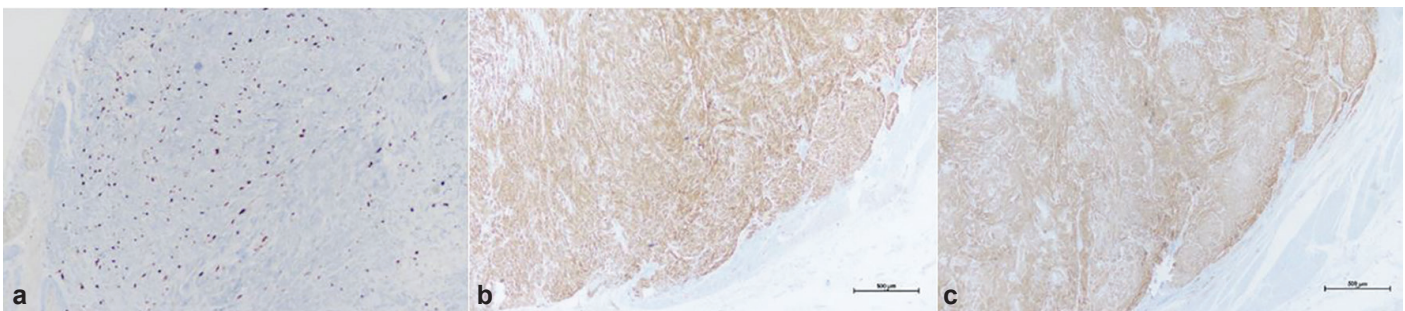


Figure 2. a) Ki-67 immunohistochemical staining, ×100 magnification. b) Diffuse CD117 (c-KIT) positivity within the tumor tissue. c) Diffuse DOG-1 positivity within the tumor tissue

no experimental intervention, no alteration of standard clinical management, and no collection of data beyond what was routinely obtained during the patient's clinical care. In accordance with our institutional policy and applicable national regulations, formal ethics committee review is not mandated for retrospective case reports of this nature. The study was conducted in full accordance with the principles of the Declaration of Helsinki.

Discussion

Incidental GISTs detected during LSG are rare but clinically relevant. Hallak et al. (8) identified incidental GISTs in 6 of 305 sleeve gastrectomy specimens (1.97%); all lesions were small, low-grade, margin-negative, and asymptomatic, consistent with the present case. Similarly, Abokhozima et al. (12) reported 9 incidental gastric GISTs among 2,458 bariatric procedures, none requiring a change in the surgical plan.

GIST behavior is determined by tumor size, mitotic index, and location, with gastric GISTs carrying a more favorable prognosis than small intestinal or rectal tumors (13). The tumor in the present case exhibited all low-risk features—size <2 cm, mitotic rate $\leq 5/5$ mm², gastric location, and clear margins—supporting a watch-and-wait approach without adjuvant imatinib, which current guidelines reserve for high-risk or selected intermediate-risk GISTs (14).

Complete excision with clear margins (R0) is the cornerstone of GIST management, and sleeve gastrectomy incidentally achieves this for small intramural lesions. Mendes et al. (15) identified incidental GISTs in 17 of 2,655 bariatric procedures (0.64%), most with clear margins and low malignant potential and no recurrences. Crouthamel et al. (9) similarly reported 12 incidental low-grade GISTs with negative margins among 1,415 sleeve gastrectomies, without recurrence.

Despite the favorable prognosis of low-risk GISTs, structured postoperative surveillance remains important, as malignant transformation, though uncommon, has been reported. The present patient has been followed with six-monthly clinical and imaging evaluation and remains disease-free at 18 months.

The key clinical contribution of this case is that meticulous, systematic pathological examination of all bariatric specimens is indispensable. Walędziak et al. (16) emphasized that preoperative investigations may fail to exclude gastric tumors and recommended routine histopathological examination of resected bariatric tissue. A multidisciplinary approach involving surgeons, pathologists, and oncologists is warranted for risk stratification and follow-up planning.

A clinically relevant question is why preoperative endoscopy and imaging failed to detect this lesion. Small intramural GISTs typically present as submucosal bulges with intact overlying mucosa and are easily missed on standard endoscopy,

while cross-sectional imaging is unreliable for lesions below approximately 2 cm. Endoscopic ultrasound is the most sensitive modality for submucosal gastric lesions and might have identified this mass, but it is not routinely indicated in the preoperative bariatric workup and should be reserved for cases with endoscopic or clinical suspicion. This case reinforces that systematic histopathological examination of the resected specimen remains the cornerstone of detection in this setting.

This report has the inherent limitations of the case report format, from which no generalizable conclusions can be drawn. The 18-month follow-up, while consistent with comparable series, is relatively short for a mesenchymal neoplasm and does not exclude late recurrence. Current guidelines for low-risk gastric GISTs recommend long-term surveillance with six-monthly imaging for five years followed by annual evaluation; the present patient remains enrolled in this program.

This case underscores the importance of systematic histopathological examination of all sleeve gastrectomy specimens. Incidental GISTs are rare but carry significant diagnostic and therapeutic implications. When identified at an early stage with low-risk features and clear surgical margins, complete resection achieved during LSG is generally curative, and adjuvant therapy is not required. The clinical message of this report is that bariatric surgeons should be aware of this entity and ensure that all resected specimens undergo thorough pathological evaluation, followed by structured oncological surveillance.

Ethics

Informed Consent: Written informed consent was obtained from the patient for publication of this case report and accompanying images.

Acknowledgments

The authors accept full responsibility for all AI-assisted content.

The authors would like to thank all clinical and pathological team members involved in the diagnosis, treatment, and follow-up process of the patient.

Footnotes

Authorship Contributions

Surgical and Medical Practices: F.Y., Concept: F.Y., M.S.S., S.D., Design: F.Y., M.S.S., M.B.K., A.G., Data Collection or Processing: S.D., M.B.K., A.G., Analysis or Interpretation: F.Y., S.D., M.B.K., A.G., Literature Search: F.Y., M.S.S., S.D., Writing: F.Y., M.S.S., S.D.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study received no financial support.

References

1. Młynarska E, Bojdo K, Bulicz A, Frankenstein H, Gąsior M, Kustosik N, et al. Obesity as a multifactorial chronic disease: molecular mechanisms, systemic impact, and emerging digital interventions. *Curr Issues Mol Biol.* 2025;47(10):787.
2. Busebee B, Ghush W, Cifuentes L, Acosta A. Obesity: a review of pathophysiology and classification. *Mayo Clin Proc.* 2023;98(12):1842-1857.
3. Mulita F, Lampropoulos C, Kehagias D, Verras GI, Tchabashvili L, Kaplanis C, et al. Long-term nutritional deficiencies following sleeve gastrectomy: a 6-year single-centre retrospective study. *Prz Menopauzalny.* 2021;20(4):170-176.
4. Angrisani L, Santonicola A, Iovino P, Vitiello A, Higa K, Himpens J, et al. IFSO worldwide survey 2016: primary, endoluminal, and revisional procedures. *Obes Surg.* 2018;28(12):3783-3794.
5. Clapp B, Ponce J, Corbett J, Ghanem OM, Kurian M, Rogers AM, et al. American Society for Metabolic and Bariatric Surgery 2022 estimate of metabolic and bariatric procedures performed in the United States. *Surg Obes Relat Dis.* 2024;20(5):425-431.
6. Corless CL. Gastrointestinal stromal tumors: what do we know now? *Mod Pathol.* 2014;27(Suppl 1):S1-S16.
7. Ferig M, Alarcon Velasco S, Van Doren L, Saif MW. Gastrointestinal stromal tumors incidentalomas: a case series. *Cancer Med J.* 2020;3(Suppl 1):35-38.
8. Hallak YO, Karajeh O, Rivas H, Helling K. Incidental gastrointestinal stromal tumors (GIST) during laparoscopic sleeve gastrectomy procedures: a retrospective study. *Obes Surg.* 2022;32(1):3-7.
9. Crouthamel MR, Kaufman JA, Billing JP, Billing PS, Landerholm RW. Incidental gastric mesenchymal tumors identified during laparoscopic sleeve gastrectomy. *Surg Obes Relat Dis.* 2015;11(5):1025-1028.
10. Beltran MA, Pujado B, Méndez PE, Gonzáles FJ, Margulis DI, Contreras MA, et al. Gastric gastrointestinal stromal tumor (GIST) incidentally found and resected during laparoscopic sleeve gastrectomy. *Obes Surg.* 2010;20(3):393-396.
11. Mulita F, Verras GI, Anagnostopoulos CN, Kotis K. A smarter health through the internet of surgical things. *Sensors (Basel).* 2022;22(12):4577.
12. Abokhozima A, Zidan MH, Altabbaa H, Abo Elmagd A, Alok M, Fathy F, et al. Can incidental gastric GISTs during bariatric surgeries change the primary plan of surgery? A single team experience and a systematic review of literature. *Obes Surg.* 2024;34(6):2186-2197.
13. Dematteo RP, Gold JS, Saran L, Gönen M, Liao KH, Maki RG, et al. Tumor mitotic rate, size, and location independently predict recurrence after resection of primary gastrointestinal stromal tumor (GIST). *Cancer.* 2008;112(3):608-615.
14. Serrano C, Álvarez R, Carrasco JA, Marquina G, Martínez-García J, Martínez-Marín V, et al. SEOM-GEIS clinical guideline for gastrointestinal stromal tumors (2022). *Clin Transl Oncol.* 2023;25(9):2707-2717.
15. Mendes JT, Wilson C, Schammel CMG, Scott JD, Schammel DP, Trocha SD. GIST identified during bariatric surgery: to treat or not to treat? *Surg Obes Relat Dis.* 2020;16(2):282-287.
16. Walędziak M, Różańska-Walędziak A, Kowalewski PK, Janik MR, Paśnik K. Histopathological examination of tissue resected during bariatric procedures - to be done or not to be done? *Wideochir Inne Tech Maloinwazyjne.* 2017;12(2):135-139.