ISSN: 3066-8115
Case Report
Science Set Journal of Medical and Clinical Case Studies

Rare but Revealing: Divergent Diagnostic and Management Pathways in Gastric Schwannoma - A Case Series

Nida Aliaa Mohamad Azman, S. Mohanarajah, & Hashimah Abdul Rahman*

Upper Gastrointestinal Unit, Department of General Surgery, Sarawak General Hospital, Malaysia

***Corresponding author:** Hashimah Abdul Rahman, Upper Gastrointestinal Unit, Department of General Surgery, Sarawak General Hospital, Malaysia.

Submitted: 03 January 2026 **Accepted:** 09 January 2026 **Published:** 26 February 2026

Citation: *Azman, N. A. M., Mohanarajah, S. & Rahman, H. A. (2026). Rare but Revealing: Divergent Diagnostic and Management Pathways in Gastric Schwannoma - A Case Series. Sci Set J of Med Cli Case Stu, 5(1), 01-04.*

Abstract

Gastric schwannomas are uncommon mesenchymal tumours of the gastrointestinal tract. They are frequently mistaken for other subepithelial gastric lesions, particularly gastrointestinal stromal tumours (GISTs), due to overlapping clinical, endoscopic, and radiological features. This diagnostic overlap creates uncertainty in preoperative decision-making and management. In contrast to the extensive literature on GISTs, gastric schwannomas remain poorly characterised owing to their rarity. We describe two patients with gastric schwannoma who presented with markedly different clinical scenarios, including an infrequent diagnosis during pregnancy. A retrospective review of clinical presentation, imaging findings, operative strategies, histopathological characteristics, and postoperative outcomes was performed. Surgical management was individualised based on tumour characteristics and patient-specific considerations. In both cases, histopathology demonstrated spindle cell tumours with diffuse S-100 positivity and absence of CD117 and DOG-1 expression, confirming the diagnosis of gastric schwannoma. Postoperative recovery was uneventful, and no recurrence was observed during six-monthly follow-up. This case series underscores the importance of including gastric schwannoma in the differential diagnosis of gastric subepithelial tumours and highlights the need for tailored surgical strategies, particularly in complex contexts such as pregnancy.

Keywords: Gastric Schwannoma, Gastric Mesenchymal Tumours, Gastrointestinal Stromal Tumour, Pregnancy.

Introduction

Gastric mesenchymal tumours comprise a heterogeneous group of lesions that range from benign to malignant. These include gastrointestinal stromal tumours (GISTs), smooth muscle tumours such as leiomyomas and leiomyosarcomas, and neurogenic tumours, most notably schwannomas. Gastric schwannomas are rare, accounting for approximately 2–6% of gastric mesenchymal tumours and less than 1% of all gastric neoplasms. The stomach represents the most frequent site of gastrointestinal schwannomas, contributing to nearly two-thirds of reported cases. These tumours arise from Schwann cells of the peripheral nerve sheath, originating within the Auerbach or Meissner plexus of the gastric wall [1].

Because of their low incidence, gastric schwannomas are reported predominantly as isolated case reports or small case series. They occur more commonly in women and are typically diagnosed in the fifth or sixth decade of life. Most gastric schwannomas follow a benign course; however, malignant transformation, although rare, has been described and is associated with aggressive biological behaviour and poor outcomes.

Preoperative identification of gastric schwannoma is challenging. Endoscopic and radiological appearances often resemble those of GISTs or other subepithelial tumours, making definitive diagnosis dependent on histopathological examination and immunohistochemical profiling. Surgical resection remains the cornerstone of treatment, with excellent outcomes reported following complete excision. This report presents two cases of gastric schwannoma with contrasting presentations and management approaches, illustrating the diagnostic complexity and need for individualised surgical decision-making [2].

Case Presentations

Case 1

A 31-year-old woman, gravida 4 para 3, presented at 12 weeks of gestation after an incidental finding of a paraumbilical mass during routine antenatal assessment. She reported awareness

of the swelling for approximately three years, with gradual enlargement over the preceding year. The patient was otherwise asymptomatic, with no abdominal pain, gastrointestinal bleeding, altered bowel habits, or constitutional symptoms.

Baseline laboratory investigations were within normal limits. Abdominal ultrasonography demonstrated a well-defined, heterogeneous hypoechoic intraperitoneal mass without extension into the subcutaneous tissues. Subsequent magnetic resonance imaging revealed an exophytic lesion arising from the greater curvature of the stomach, predominantly solid in nature with T2 isointense signal characteristics. Oesophagogastroduodenoscopy identified a gastric subepithelial lesion with central umbilication located at the posterior corpus, raising suspicion for a gastric GIST [3].

Given the presumptive diagnosis and concern regarding tumour-related complications during pregnancy, surgical resection was recommended. Intraoperatively, an 11 × 10 × 10 cm subepithelial gastric mass was identified arising from the posterior wall of the antrum, accompanied by multiple enlarged perigastric lymph nodes. No peritoneal or hepatic metastases were observed. A distal gastrectomy with gastrojejunal bypass was performed to achieve complete tumor excision.

Histopathological examination revealed a well-circumscribed tumour involving the submucosa and muscularis propria, composed of spindle cells arranged in loose fascicles within a collagenous and mildly myxoid stroma. Alternating hypercellular and hypocellular areas, nuclear palisading, Verocay bodies, and a prominent peritumoral lymphoid cuff were observed. Immunohistochemical analysis showed diffuse positivity for S-100 and SOX10, with negative staining for CD117, DOG-1, desmin, and smooth muscle actin, confirming the diagnosis of gastric schwannoma. Resection margins were clear, and lymph nodes demonstrated reactive changes only. The postoperative course was uneventful, and the patient carried her pregnancy to term without complications. No recurrence was detected during follow-up [4].

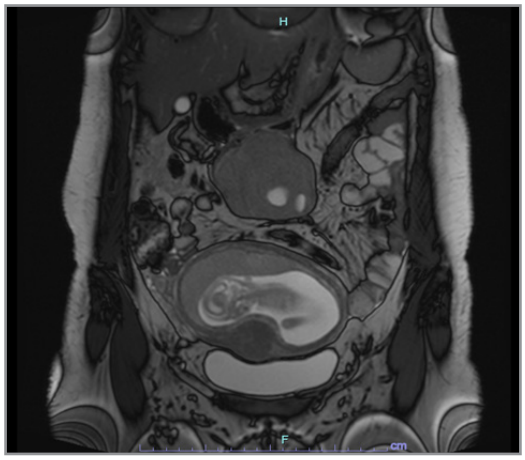

Figure 1a: MRI abdomen shows an exophytic mass arising from the greater curvature of the stomach measuring 6.2 x 8.7 x 7.7cm

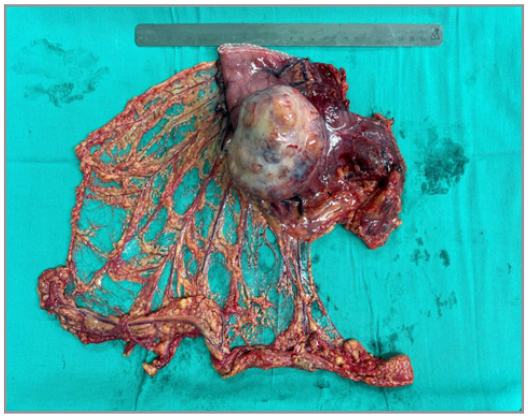

Figure 1b: Posterior view of distal gastrectomy specimen shows a subepithelial gastric tumour with multiple enlarged nodes along the gastroepiploic vessel.

Case 2

A 56-year-old woman with a history of hypertension was evaluated for gallstone pancreatitis and underwent endoscopic retrograde cholangiopancreatography with biliary stenting. During preoperative imaging for planned laparoscopic cholecystectomy, computed tomography incidentally revealed an exophytic gastric mass suggestive of a GIST. Endoscopic assessment demonstrated an antral subepithelial lesion.

The patient underwent laparoscopic wedge resection of the gastric lesion in conjunction with cholecystectomy. Intraoperatively, an exophytic mass was identified along the greater curvature of the gastric body. Histopathological examination revealed a well-demarcated, non-encapsulated spindle cell tumour arising from the muscularis propria, characterised by intersecting fascicles and peritumoral lymphoid cuffing. Immunohistochemistry demonstrated strong S-100 positivity, with negative staining

for CD117 and smooth muscle actin, consistent with gastric schwannoma.

The patient recovered without complications and remained disease-free on follow-up [5].

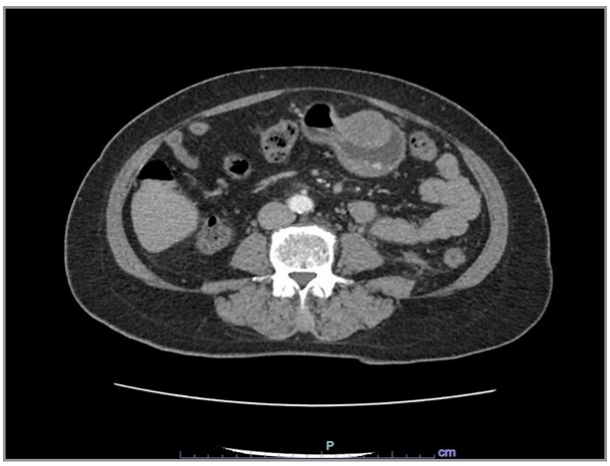

Figure 2a: CT abdomen showed exophytic gastric mass at the greater curvature of the stomach measuring 3.4 x 4.0 x 3.2cm

Discussion

Diagnostic Considerations

Gastric schwannomas are typically asymptomatic or present with nonspecific symptoms such as abdominal discomfort or upper gastrointestinal bleeding. Consequently, many lesions are detected incidentally during imaging or endoscopic evaluation. Radiological and endoscopic modalities alone are insufficient for definitive diagnosis, as gastric schwannomas share significant overlap in appearance with other mesenchymal tumours, particularly GISTs. Accurate differentiation is crucial, as GISTs possess malignant potential, whereas gastric schwannomas are overwhelmingly benign.

Endoscopic ultrasound (EUS) is valuable in further characterising subepithelial lesions by defining the layer of origin and internal echotexture. Gastric schwannomas typically appear as hypoechoic, heterogeneous masses arising from the muscularis propria. Compared with GISTs, they often demonstrate lower echogenicity relative to the surrounding muscle. EUS-guided tissue sampling may aid diagnosis in larger lesions or those exhibiting high-risk features. On computed tomography, gastric schwannomas generally demonstrate homogeneous enhancement without necrosis or haemorrhage, while magnetic resonance imaging typically shows low T1 and high T2 signal intensity [6].

Surgical Management

Complete surgical excision with negative margins is the treatment of choice for gastric schwannoma and mirrors the principles applied in GIST management. The surgical approach should be individualised based on tumour size, location, and patient factors. Minimally invasive resection is appropriate for smaller, favourably located lesions, whereas larger tumours or those associated with diagnostic uncertainty may require more extensive resection.

In the first case, the large tumour size and concern for malignancy, compounded by pregnancy-related anatomical considerations, necessitated distal gastrectomy with a single gastrojejunal anastomosis to minimise operative risk. In the second case, laparoscopic wedge resection provided definitive treatment with minimal morbidity.

Prognosis and Follow-up

Benign gastric schwannomas are associated with excellent long-term outcomes following complete resection, with no reported recurrence or metastasis in most series. Consequently, routine intensive surveillance is generally unnecessary in benign cases. Malignant gastric schwannomas are exceedingly rare, and due to limited data, standardised follow-up protocols have not been established; however, periodic imaging and endoscopic assessment are advisable.

Conclusion

Gastric schwannoma is an uncommon gastric mesenchymal tumour that is frequently misdiagnosed as GIST due to overlapping clinical and radiological features. Definitive diagnosis relies on histopathological examination and immunohistochemical analysis. Recognition of this entity is important, as gastric schwannomas are predominantly benign and carry an excellent prognosis following complete surgical resection.

The occurrence of gastric schwannoma during pregnancy is exceptionally rare and presents unique diagnostic and therapeutic challenges. This case series highlights the importance of individualised surgical planning, particularly in complex clinical settings. Further studies are needed to better define optimal management and surveillance strategies, especially for malignant variants.

References

1. Zheng, L., Wu, X., Kreis, M. E., Yu, Z., Feng, L., Chen, C., Xu, B., Bu, Z., Li, Z., & Ji, J. (2014). Clinicopathological and immunohistochemical characterisation of gastric schwannomas in 29 cases. Gastroenterology research and practice, 2014, 202960. https://doi.org/10.1155/2014/202960
2. Mohanty, S. K., Jena, K., Mahapatra, T., Dash, J. R., Meher, D., John, A., Nayak, M., & Bano, S. (2016). Gastric GIST or gastric schwannoma-A diagnostic dilemma in a young female. International journal of surgery case reports, 28, 60–64. https://doi.org/10.1016/j.ijscr.2016.09.026
3. Shah, A. S., Rathi, P. M., Somani, V. S., & Mulani, A. M. (2015). Gastric schwannoma: A benign tumor often misdiagnosed as gastrointestinal stromal tumor. Clinical Practice, 5(3), 775. https://doi.org/10.4081/cp.2015.775

4. Qi, Z., Yang, N., Pi, M., & Yu, W. (2021). Current status of the diagnosis and treatment of gastrointestinal schwannoma. Oncology Letters, 21(5), 384. https://doi.org/10.3892/ol.2021.12645
5. Varanese, M., Spadaccini, M., Facciorusso, A., Franchellucci, G., Colombo, M., Andreozzi, M., Ramai, D., Massimi, D., De Sire, R., Alfarone, L., Capogreco, A., Maselli, R., Hassan, C., Fugazza, A., Repici, A., & Carrara, S. (2024). Endoscopic ultrasound and gastric sub-epithelial lesions: Ultrasonographic features, tissue acquisition strategies, and therapeutic management. Medicina, 60(10), 1695. https://doi.org/10.3390/medicina60101695
6. Voltaggio, L., Murray, R., Lasota, J., & Miettinen, M. (2012). Gastric schwannoma: A clinicopathologic study of 51 cases. American Journal of Surgical Pathology, 36(6), 835–842. https://doi.org/10.1097/PAS.0b013e318250a3e5