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Case Report

Gastric GIST Presenting with Melena in a Patient on Antiplatelets – A Case Report

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Abstract: ***Purpose:*** To report a gastrointestinal stromal tumour (GIST) presenting with melena in a dual-antiplatelet-treated patient and to highlight challenges in diagnosis and organ-preserving surgical management. ***Methods:*** We describe a 54-year-old male with coronary artery disease on antiplatelet therapy who presented with melena and severe anaemia. The diagnostic workup included upper GI endoscopy and a contrast-enhanced CT scan, followed by a sleeve gastrectomy. Histopathology, immunohistochemistry, and risk stratification guided adjuvant therapy. ***Results:*** Endoscopy demonstrated a submucosal ulcerated bulge in the posterior gastric wall. CT revealed a 4.5 × 3.8 cm mass adherent to the pancreatic head/body. Sleeve gastrectomy resulted in an R0 resection; the postoperative course was uneventful. Histopathology confirmed spindle cell GIST (<5 mitoses/50 HPF) with CD117 and CD34 positivity. Classified as intermediate-risk, adjuvant imatinib (400 mg/day) was initiated. At 6-month follow-up, no recurrence was detected. ***Conclusion:*** In patients with melena on antiplatelet therapy, GIST should be suspected. Dense pancreatic adherence does not necessarily imply invasion; organ-sparing resection is feasible, followed by tailored adjuvant therapy.

Keywords: Gastrointestinal Stromal Tumour, GIST, Melena, Sleeve Gastrectomy, CD117.

INTRODUCTION

Gastrointestinal stromal tumours (GISTs) represent the most prevalent type of mesenchymal tumours found in the gastrointestinal (GI) tract. It arises from the interstitial cells of Cajal, which act as pacemaker cells that control gastrointestinal motility. Although rare, they account for approximately 0.1–3% of all gastrointestinal malignancies and represent the most frequently occurring sarcomas within the digestive system have an incidence of approximately 10 to 15 cases per million annually worldwide [1, 2].

The stomach is the most common site, accounting for nearly 60–70% of cases, followed by the small intestine (20–30%), colon and rectum (5%), and oesophagus (<5%) [3,4]. GISTs often remain clinically silent until they reach a substantial size or ulcerate the overlying mucosa, leading to symptoms such as gastrointestinal bleeding, melena, fatigue, or abdominal pain [3-5]. In patients on antiplatelet therapy, even minor mucosal breaches from GISTs can lead to significant bleeding, further complicating presentation and diagnosis [6].

Endoscopy and cross-sectional imaging play a central role in diagnosis. Endoscopy may reveal a submucosal mass with or without ulceration, while CT scans help delineate the extent, vascularity, and relationships to surrounding organs [7]. Notably, the dense adhesion of the tumour to adjacent structures, such as the pancreas, as seen in some gastric GISTs, can mimic direct invasion, complicating surgical planning [3-8].

Definitive diagnosis relies on histopathology and immunohistochemistry (IHC). Over 95% of GISTs express CD117 (c-KIT), a receptor tyrosine kinase, and approximately 70% express CD34 [2-9]. These markers help differentiate GISTs from other mesenchymal tumours. Mutational analysis and risk stratification further guide prognosis and adjuvant treatment decisions.

Surgical removal with clear margins continues to be the foundation of curative therapy for non-metastatic GISTs [4-10]. For intermediate- and high-risk cases, as defined by size, mitotic index, and location, adjuvant therapy with Imatinib, a tyrosine kinase inhibitor, has significantly improved recurrence-free survival [9-11].

This report describes a case of gastric GIST in a 54-year-old male with coronary artery disease on antiplatelets, presenting with melena and found to have a submucosal gastric mass adherent to the pancreas.

CASE PRESENTATION

A 54-year-old male with a known case of coronary artery disease (CAD) on dual antiplatelet therapy was admitted to the emergency department with complaints of melena for three days, associated with progressive fatigue and generalized weakness. There was no history of abdominal pain, hematemesis, vomiting, or weight loss.

On examination, the patient appeared pale, with a heart rate of 104 beats per minute and blood pressure of 90/60 mmHg. The abdomen was soft, non-tender, and without palpable masses. Per rectal examination confirmed melena (black tarry stools). Laboratory investigations revealed severe anemia (hemoglobin 6.8 g/dL), while renal and liver function tests were within normal limits. Electrocardiogram showed no new ischemic changes.

The patient underwent resuscitation through the administration of intravenous fluids and received two units of packed red blood cells. In light of the persistent bleeding and the patient's history of antiplatelet therapy, an urgent upper gastrointestinal endoscopy was conducted. The procedure revealed a submucosal bulge accompanied by central ulceration on the posterior wall of the stomach, situated near the lesser curvature. The lesion appeared firm and bled on touch.

A contrast-enhanced computed tomography (CECT) scan of the abdomen was conducted to conduct a more comprehensive assessment of the lesion. It revealed a well-defined, enhancing mass measuring approximately 4.5 × 3.8 cm, arising from the posterior gastric wall with dense adherence to the head and body of the pancreas. No signs of distant metastasis or lymphadenopathy were observed.

Following cardiac optimization and preoperative clearance, the patient underwent elective exploratory laparotomy. Intraoperatively, a firm gastric mass was identified, adherent to the anterior surface of the pancreas, but without gross invasion into the pancreatic parenchyma or major vasculature. The tumour was excised via a sleeve gastric resection with adequate margins while preserving adjacent structures.

The intraoperative and postoperative periods were uneventful. Oral fluid intake was commenced on postoperative day three, and the patient was discharged in a stable condition on day seven.

RESULTS

Histopathological examination (HPE) of the resected specimen revealed a spindle cell neoplasm arranged in fascicles of elongated cells with eosinophilic cytoplasm and oval to spindle-shaped nuclei. Occasional mitotic figures were identified (<5 per 50 high-power fields). The presence of overlying mucosal ulceration was confirmed (Figure 1).

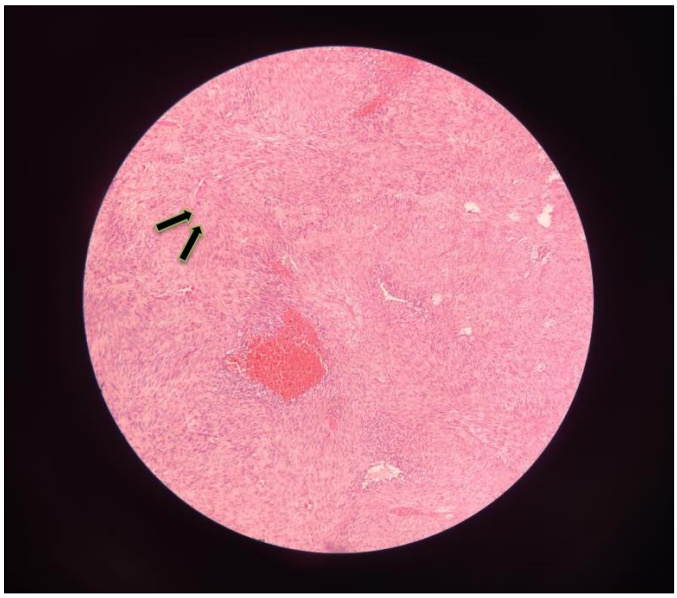

Figure 1: Histopathology of gastric GIST showing spindle cell morphology (H&E, ×40)

A low-power microscopic examination reveals sheets and fascicles of spindle-shaped tumour cells, characterised by moderate eosinophilic cytoplasm and elongated nuclei. The presence of mitotic figures indicated within blue circles supports the diagnosis of a spindle cell variant of gastrointestinal stromal tumour (GIST).

On immunohistochemistry (IHC), the tumour cells exhibited strong diffuse positivity for CD117 (c-KIT) and CD34, while demonstrating negativity for S100 and desmin. These findings confirm the diagnosis of a gastrointestinal stromal tumour (GIST) of the spindle cell type (Figure 2, Figure 3).

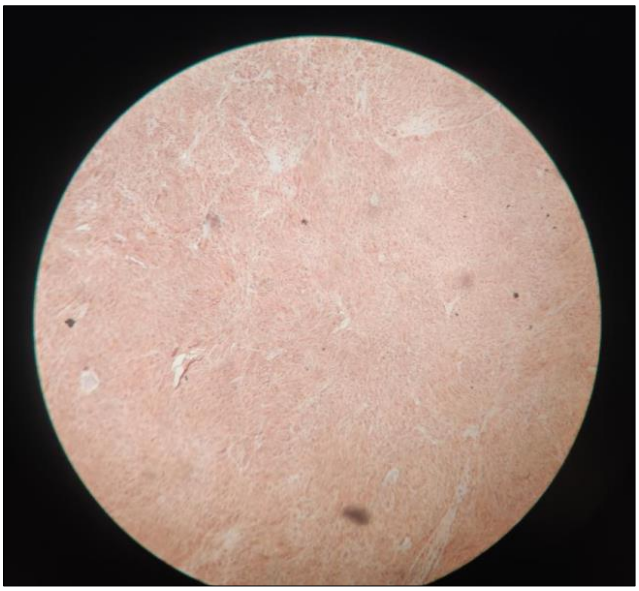

Figure 2: Immunohistochemistry for CD117 showing diffuse cytoplasmic positivity (low power, ×10)

The tumour cells exhibit uniform brown cytoplasmic staining, supporting a diagnosis of gastrointestinal stromal tumour (GIST).

According to risk stratification criteria (tumour size <5 cm, low mitotic index, gastric location), the tumour was classified as intermediate risk. The patient was commenced on adjuvant Imatinib 400 mg once daily and remains disease-free at 6 months post-surgery, under regular follow-up.

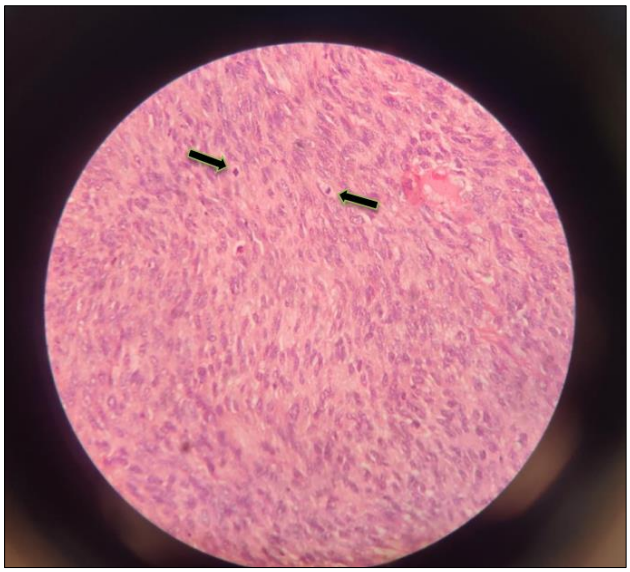

Figure 3: Immunohistochemistry for CD117 showing diffuse cytoplasmic positivity (high power, ×40)

High-power field demonstrates intense, uniform CD117 positivity in spindle-shaped tumour cells.

DISCUSSION

Gastrointestinal stromal tumours (GISTs), although rare, are the most common mesenchymal tumours of the gastrointestinal tract and can present with diverse clinical symptoms, depending on their size, location, and degree of mucosal involvement. Among symptomatic presentations, gastrointestinal bleeding is well-documented, particularly in gastric GISTs with mucosal ulceration. In this patient, ongoing melena and anaemia were likely exacerbated by dual antiplatelet therapy for coronary artery disease, consistent with case observations reported by Jain *et al*., and Yadav *et al*., who emphasised the risk of overt bleeding in patients on antithrombotic medications when GISTs ulcerate the mucosa [5, 6].

Endoscopy remains the first-line diagnostic modality in such cases, often revealing a submucosal bulge or mass with ulceration. However, cross-sectional imaging is essential to evaluate tumour characteristics, vascularity, and possible local invasion. In this case, dense adherence to the head and body of the pancreas was noted on CT and confirmed intraoperatively. Such findings raise important surgical considerations, as distinguishing actual invasion from inflammatory or anatomical adherence is crucial. Kim *et al*., reported similar cases where GISTs appeared to invade adjacent structures, such as the pancreas. Still, they were found to be non-invasive during surgery, allowing for organ-sparing resections [8].

In the present case, a sleeve gastric resection was performed successfully preserving the pancreas. This aligns with the surgical principles described by DeMatteo *et al*., who emphasised the prognostic importance of achieving negative margins without unnecessary radical resections. Additionally, organ preservation is critical when managing elderly or cardiac-compromised patients, such as the one in this case.

Histopathological examination and immunohistochemistry (IHC) remain the diagnostic gold standards for GISTs. Our case demonstrated classic spindle cell morphology, with strong CD117 (c-KIT) and CD34 positivity, a profile shared by more than 95% of GISTs, according to Miettinen and Lasota [2]. CD117 positivity is due to gain-of-function mutations in the c-KIT proto-oncogene, first described by Hirota *et al*., which has transformed the diagnostics and treatment of GIST [9].

The tumour's low mitotic index and size (<5 cm) placed it in the intermediate-risk category, based on NIH consensus criteria, and warranted adjuvant therapy with Imatinib, a tyrosine kinase inhibitor. The efficacy of Imatinib in reducing recurrence rates in resected intermediate- to high-risk GISTs has been well established in landmark studies by Demetri *et al*., [11]. Postoperative follow-up in our patient has so far shown no evidence of recurrence, affirming the benefit of this treatment approach.

Furthermore, Rajendra *et al*., and Serrano & George have emphasised that multidisciplinary management, including timely surgical intervention, precise histological characterisation, and targeted molecular therapy, is central to optimising long-term outcomes in patients with localised GISTs, even in complex anatomical settings [3, 4]. Our patient's successful recovery and current disease-free status at six months validate the importance of such a structured approach.

CONCLUSION

This case highlights the importance of early diagnostic evaluation of melena, particularly in patients taking antiplatelet medications. It also highlights the diagnostic dilemma posed by gastric GISTs mimicking pancreatic invasion, which can often be managed successfully with organ-preserving surgery and tailored adjuvant therapy. The favourable postoperative outcome in this patient reflects the importance of multimodal management, accurate histopathological diagnosis, and judicious use of tyrosine kinase inhibitors.

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