World Journal of Advanced Research and Reviews
eISSN: 2581-9615 CODEN (USA): WJARAI
Cross Ref DOI: 10.30574/wjarr
Journal homepage: https://wjarr.com/

(CASE REPORT)

Check for updates

Gastrointestinal stromal Tumors: A rare cause of upper gastrointestinal bleeding in Rivers State University Teaching Hospital

Abere S, Membere I * and Amachree Enohor

Gastrointestinal Unit, Department of Internal Medicine, Rivers State University Teaching Hospital.

World Journal of Advanced Research and Reviews, 2026, 30(03), 192-197

Publication history: Received on 23 March 2026; revised on 02 May 2026; accepted on 05 May 2026

Article DOI: https://doi.org/10.30574/wjarr.2026.30.3.1190

Abstract

Gastrointestinal stromal tumours (GIST) are mesenchymal tumours originating from the intestinal cells of Cajal. They are a known cause of upper gastrointestinal bleeding but this is a rare feature. Patients present with melena (black tarry stools), haematemesis (vomiting of blood) or unexplained iron deficiency anaemia due to chronic slow blood loss. As the tumour enlarges, the submucosal tumour outgrows its blood supply leading to pressure necrosis, ulceration of overlying mucosal layer and direct vessel erosion. We report on 3 cases, first case is a 71-year-old male diabetic who had history of 2 simultaneous episodes of haematemesis, melena and significant history of non-steroidal anti-inflammatory drug use for an injury, upper GI endoscopy a polypoid mass about 8 to 10cm with a broad base and areas of ulceration with a pool of blood at the fundus. The second case is a 49-year-old female, hypertensive known chronic dyspeptic patient with a history of haematemesis, melena, upper gastrointestinal endoscopy revealed a cauliflower mass on the fundus of the stomach with widespread salt and pepper appearance. The third case is a 53-year-old male who presented with haematemesis, melena, history of chronic NSAID use, upper GI endoscopy revealed a gastric mass suspicious of GIST. Surgery was done in all cases and patients have good recovery on follow up.

Keywords: Gastrointestinal stromal tumour; Upper gastrointestinal bleeding; Tumour; Nigeria

1. Introduction

Gastrointestinal stromal tumour (GIST) is a soft tissue sarcoma arising from interstitial cell of Cajal of the gastrointestinal tract. GIST which often are tissue sarcomas arising from interstitial cell of Cajal of the gastrointestinal tract was first described in 1983 by Mazar and Clark as a distinct set of mesenchymal tumours of the Gastrointestinal (GI) tract having no ultrastructural or immunohistochemical features characteristic of smooth muscle differentiation.1 GIST are rare tumours accounting for approximately 1% to 3% of all gastrointestinal tumours. (1)

They develop from pluripotent mesenchymal stem cell programmed to differentiate into interstitial cells of Cajal, the GI tract "pacemaker cells" - the cells responsible for initiating and co-coordinating GI motility. (2) Stromal tumours arising in the GI tract were previously referred to as smooth muscle neoplasms of the GI tract but with advances in Immunohistochemistry, revealed that some of these tumours lacked features of smooth muscle differentiation, while others had markers of neuronal differentiation, and some had neither of the above markers.(3) Though they can arise from any organ in the gastrointestinal tract, they are most commonly found in the stomach (40–70 %), small bowel (20–40 %) and colon/rectum (5–15 %). 4 They are rarely found in the esophagus (5 %). (4)

* Corresponding author: Abere S, Membere I

2. Case 1

A case of GIST from the Gastroesophageal junction. A 71-year-old male diabetic with a 16hours history of 2 simultaneous episodes of painless vomiting of fresh blood, passage of melena stool, and a significant history of non-steroidal anti -inflammatory drug (NSAID) use for a left foot injury prior to onset of symptoms.

Significant examination findings were pallor, epigastric tenderness, and a gloved finger stained with melena stool on digital rectal examination.

Abdominal computerized tomography reported a well-defined, rounded fairly homogenously enhancing hypodense intraluminal mass with cystic areas in upper aspect of the body of the stomach, abutting the lesser curvature measuring about 3.93cm (CC) x 4.44cm (TD) x 4.83 (AP), with a diagnosis of Gastric mass and differentials of Gastrointestinal Stromal Tumour or Gastric Schwannoma made.

Abdominal ultrasound scan revealed an enlarged liver measuring 17.48cm with regular outline, and homogenous parenchymal echogenicity, an impression of Hepatomegaly? Cause, a Simple left renal cyst and Prostatic enlargement.

Upper Gastrointestinal Endoscopy revealed, pool of blood at the fundus, polypoid mass about 10 to 12cm from gastroesophageal junction measuring about 8 to 10cm in its widest diameter with a broad base and areas of ulceration with a pool of blood noted around the fundus.

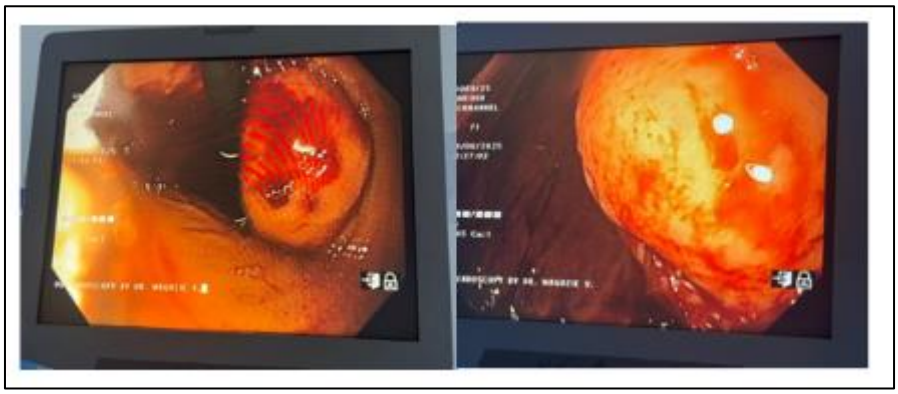

Figure 1 Picture of GI endoscopy finding in case 1

Histology report of endoscopy biopsy revealed NSAID induced gastritis.

The patient was optimized and had elective exploratory laparotomy and the findings were: Polypoid gastric tumour about 10 x 12 cm with a broad base, well circumscribed with depressed central bleeding point. Initial exploration of the peritoneum done showed no seedlings to liver, peritoneum or any intra-abdominal area. Tumour was noted around the lesser curvature and the resected margin was clear of the tumour.

The risk stratification in relation to the location, and size revealed a low-risk category.

Post exploratory histology report was conclusive of a gastrointestinal stromal tumour.

The full blood count revealed low haemoglobin/ deranged INR, urinalysis was normal, electrolyte urea and creatinine values showed low potassium, and random blood glucose at presentation was elevated. All these indices were corrected and the patient stabilized. Patient recuperated well and was eventually discharged home to follow up in the outpatient clinic.

3. Case 2

49year old female who presented with repeat incidence of vomiting and stooling of blood of 48 hours duration. she had 5 episodes of copious vomitus of blood mixed with particles of recently ingested meals, no prior history of alcohol binge, ingestion of herbal concoction nor chronic NSAID use. She is a known dyspeptic patient of 3 years duration. Had an episode with a similar pattern 3 years prior to presentation for which she received blood transfusion.

She is a known hypertensive diagnosed 2 years ago.

Significant examination findings include an acutely ill-looking pale woman with marked epigastric tenderness and examining finger stained with blood on digital rectal examination.

Abdominal USS was essentially normal.

Pelvic USS showed Uterine Leiomyoma.

Upper gastrointestinal endoscopy revealed a cauliflower mass on the fundus of the stomach with widespread salt and pepper appearance. Biopsy of the fundal mass was taken and sent for histology which revealed a GIST.

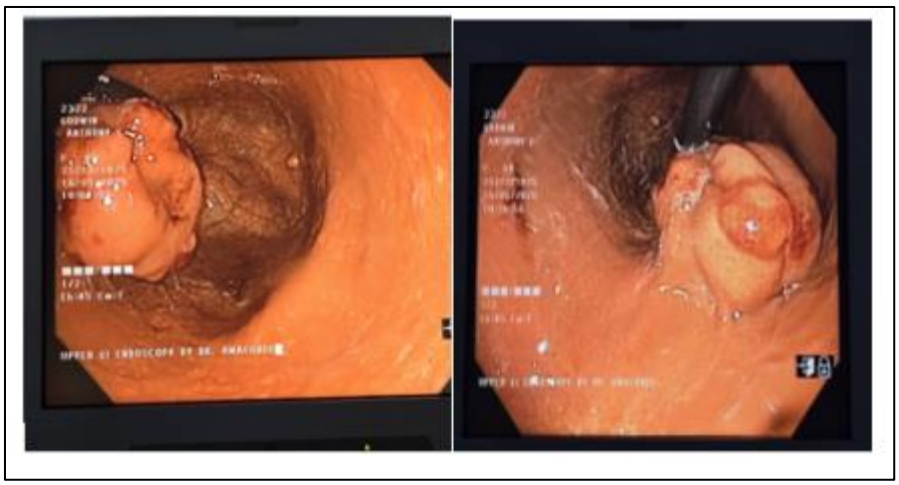

Figure 2 Picture of upper GI endoscopy finding in case 2

Lower gastrointestinal endoscopy (colonoscopy) revealed internal haemorrhoids.

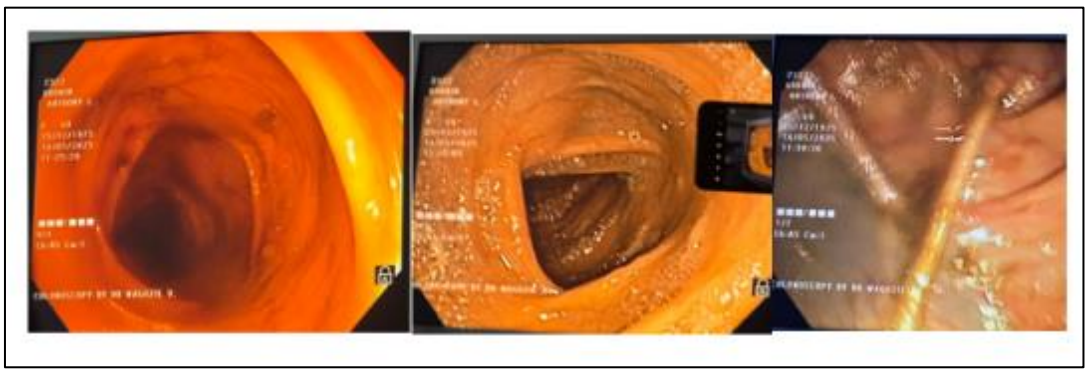

Figure 3 Picture of lower GI endoscopy finding in case 2

Patient was optimized for surgery; resection of the mass was done and sent for histology. She recuperated well and was discharged home.

4. Case 3

53-year-old male, who presented with Vomiting of blood for 1/52 prior to presentation. Vomitus was copious, with blood clots, with associated melena, no abdominal pain, abdominal swelling, nor jaundice. Had a history of chronic NSAID use, no ingestion of alcoholic beverages, nor use of herbal concoction. This is the second episode of haematemesis, first episode was about 12 months prior to presentation. He has been living with Type 2 Diabetes Mellitus for 2 years.

Significant examination findings: He was pale, febrile, and dehydrated.

Abdominal ultrasound scan revealed an enlarged liver with normal outline and parenchymal echogenicity. Liver function test and liver enzyme values were however normal.

The haemoglobin level was reduced, other components of the full blood count were normal, urinalysis, coagulation profile, electrolyte urea and creatinine.

Upper gastrointestinal endoscopy revealed a gastric mass suspicious of GIST.

The patient was optimized for an emergency laparotomy with wedge resection. Findings intra operatively was: 5cm by 4cm tumour arising from the greater curvature of the stomach with no evidence of infiltration of the mass into the surrounding structures, nor any evidence of lymphadenopathy or metastasis. Sample was sent out for histology; patient recuperated well and was discharged home to follow up in the outpatient clinic.

5. Discussion

Gastrointestinal tumours (GIST) are rare tumours in Nigeria, GISTs are fairly uncommon, possibly due to limited epidemiological data from underreporting, lack of cancer registries, and diagnostic challenges. A systematic review of Nigerian studies by Ogun et al (5) identified only 67 reported cases over an 18-year period (2000–2018), highlighting the rarity and paucity of documentation of the disease in the country. In the South-South region of Nigeria where our institute is located including states such as Rivers, Akwa Ibom, Cross River, and Delta, data are particularly sparse and mostly derived from case reports and small institutional series.

Globally, GIST occurs marginally frequently in males as compared to females, both in the fifth and sixth decades of life. There is no racial or geographical preponderance. (6) However, unlike some global reports, available Nigerian data suggest that GIST typically affects middle-aged and elderly individuals, with most patients presenting in the fifth to seventh decades of life and no gender disparity. (5)

Generally, GISTs can arise throughout the GI tract, but most commonly occur in the stomach (40–70 %), followed by small bowel (20–40 %) and colorectum (5–15 %), and rarely in the esophagus. (5 %) (7) Anatomically, the stomach is the most common site of origin of GIST in Nigeria, accounting for approximately 60–70% of cases, followed by the small intestine and, less frequently, the colon and rectum. (5,8,9) This distribution mirrors global trends, suggesting similar biological behavior across populations.

In more developed climes, patients with GIST are asymptomatic, and are discovered incidentally during routine check up on imaging or in some cases at laparotomy for other reasons. (3) This is however not the case in developing resource poor countries like Nigeria where late presentation is the norm, with over 80% of patients presenting with large tumors (>10 cm) and advanced disease at diagnosis. (5) The observed trend from southern region of Nigeria is a predominance of gastric tumors, late presentation with large abdominal masses, poor prognostic indices, and reliance on surgical management due to limited access to targeted therapies like imatinib. (5,10)

Among symptomatic cases, gastrointestinal bleeding is the most frequent presentation, particularly when the tumour ulcerates into the mucosal surface and is located in the stomach and proximal small intestine. (11) The bleeding typically results from mucosal ulceration overlying the tumour due to pressure necrosis, leading to exposure and erosion of submucosal vessels. Upper gastrointestinal bleeding is the most common symptomatic presentation of GIST globally with 23–33% of all GIST patients present primarily with gastrointestinal bleeding and 40–65% and up to 25% of small bowel GISTS present with hematemesis or melena and overt/ occult bleeding respectively. (12) In developing countries, GIST-related bleeding often presents as an emergency which is often initially attributed to more common causes such as peptic ulcer disease or variceal bleeding, leading to delayed recognition. (11)

The diagnosis of GIST is histological after a guided biopsy. Though abdominal ultrasound scan is the initial imaging test it does not provide proper identification of the origin of the mass thus a contrast enhanced computed tomography (CECT) s preferable as it is useful in diagnosis, staging, show extent of tumour, tumour necrosis and metastasis as well as a rapid, reproducible assessment of the tumour. (13) other important diagnostic modalities include upper gastrointestinal endoscopy, endoscopic ultrasound scan (EUS) for biopsy, Magnetic resonance imaging (MRI) to assess the degree of haemorrhage and necrosis, and positron emission tomography (PET) as a complementary diagnostic tool to the information obtained by conventional anatomic imaging. (3)

According the European society for medical oncology (ESMO) consensus guideline, complete tumour resection with negative tumour margins is the standard surgical treatment. (14) Further consensus guidelines for the management of GIST are as follows (6):

Small esophagogastric or duodenal nodules <2 cm are deemed as low risk and these patients need only follow-up, reserving excision for patients whose tumor increase in size or become symptomatic.

Standard approach for nodules >2 cm is excision biopsy. If larger and surgery is expected to involve multivisceral resection, multiple core needle biopsies are performed guided by ultrasonography or CT.

Drug treatment of gastrointestinal stromal tumors (GISTs) is primarily based on targeted tyrosine kinase inhibitors (TKIs) directed against KIT and PDGFRA mutations, which drive most tumors. (15)

Imatinib remains the standard first-line therapy for unresectable, metastatic, and high-risk resected GIST, (14, 16) significantly improving progression-free and overall survival, while resistance or intolerance is managed sequentially with Sunitinib as second-line and Regorafenib as third-line therapy, followed by Ripretinib as fourth-line treatment. (16) Additionally, Avapritinib is specifically indicated for tumors harboring PDGFRA exon 18 mutations such as D842V, while neoadjuvant and adjuvant imatinib may be used in selected cases to reduce tumor size or recurrence risk, with long-term therapy often required due to relapse after discontinuation. (16,17)

Prognostically, the 5-year survival for malignant GIST varies widely and has been reported to be from 28% -80%. (3) Bleeding in GIST is not only a presenting symptom but also a poor prognostic factor associated with larger tumor size, higher mitotic activity and linked to increased risk of recurrence and poorer survival outcomes. (18) Other poor prognostic features include: Age >50 years, recurrent presentation Size >5 cm microscopically positive surgical margins, mitotic activity >5 mitoses/hpf, and absence of c-kit. (3)

6. Conclusion

Although GIST is a rare cause of UGIB overall, it remains an important differential diagnosis, particularly in cases of unexplained or recurrent bleeding. Upper gastrointestinal bleeding remains the most common and clinically significant presentation of gastrointestinal stromal tumors worldwide, occurring in up to two-thirds of symptomatic patients. In developing countries, this presentation is often more dramatic due to late presentation, delayed diagnosis, limited healthcare resources, and larger tumor size at presentation.

Compliance with ethical standards

Disclosure of conflict of interest

The Authors declare no conflict of interest.

Statement of ethical approval

Ethical approval was sought and obtained from the Rivers State University Teaching Hospital with a REC Number: RSUTH/REC/2026956

Statement of informed consent

Informed consent was obtained from all individuals that participated in the study.

References

[1] Mazur MT, Clark HB. Gastric stromal tumors. Reappraisal of histogenesis. Am J Surg Pathol. 1983 Sep;7(6):507-19.

[2] Kindblom LG, Remotti HE, Aldenborg F, Meis-Kindblom JM. Gastrointestinal pacemaker cell tumor (GIPACT): gastrointestinal stromal tumors show phenotypic characteristics of the interstitial cells of Cajal. Am J Pathol 1998. May;152(5):1259-1269

[3] Talathi NP, Telavane PP, Adhikari DR, Singh R, Joshi RM. Gastrointestinal stromal tumours: a series of 12 cases. Indian J Surg. 2013 Jun;75(Suppl 1):134-40.

[4] Bauer S, Corliss CL, Heinrich MC, et al. Response to imatinib mesylate of a gastrointestinal stromal tumor with very low expression of KIT. Cancer Chemother Pharmacol. 2003; 51:261–265.

[5] Ogun GO, Adegoke OO, Rahman A, Egbo OH. Gastrointestinal Stromal Tumours (GIST): A Review of Cases from Nigeria. J Gastrointest Cancer. 2020 Sep;51(3):729-737.

[6] Sashidharan P, Matele A, Matele U, Al Felahi N, Kassem KF. Gastrointestinal stromal tumors: a case report. Oman Med J. 2014 Mar;29(2):138-41.

[7] Bauer S, Corliss CL, Heinrich MC, et al. Response to imatinib mesylate of a gastrointestinal stromal tumor with very low expression of KIT. Cancer Chemother Pharmacol. 2003; 51:261–265.

[8] Rasheed MW, Abiodun AE, Eziagu UB, Idowu NA, Kabiru A, Adegboye TA, Oluogun WA, Ayoade AA. Clinicopathological and immunohistochemical characterization of gastrointestinal stromal tumour at four tertiary health centers in Nigeria using CD117, DOG1, and human epidermal growth factor receptor-2 biomarkers. Ann Afr Med. 2023 Oct-Dec;22(4):501-507.

[9] Afuwape OO, Irabor DO, Ladipo JK. Gastrointestinal stromal tumour in Ibadan, Nigeria: a case report and review of current treatment. Afr Health Sci. 2011 Mar;11(1):134-8.

[10] Ekpemiro UC, Chukwu IS, Jegede OO, Chukwuegbo CC, Bassey IA. Treatment of a localized exogastric gastrointestinal stromal tumour (GIST) with long-term follow up: A case report and review of literature. Ibom med jour. 2024;17 (3) :591 – 594.

[11] Wadhwa M, Nagra N, Singh N, Kumar S, Omer E. Jejunal Gastrointestinal Stromal Tumor Presenting as Hemorrhagic Shock. Cureus. 2024 Jun 11;16(6):e62155

[12] Zhijie Yin, Jinbo Gao, Weizhen Liu, Cheng Huang, Xiaoming Shuai, Guobin Wang, Kaixiong Tao, Peng Zhang. Clinicopathological and Prognostic Analysis of Primary Gastrointestinal Stromal Tumor Presenting with Gastrointestinal Bleeding: a 10-Year Retrospective Study. Journal of Gastrointestinal Surgery. 2017; 21(5): 792-800.

[13] Burkill GJ, Badran M, Al-Muderis O, Meirion Thomas J, Judson IR, Fisher C, et al. Malignant gastrointestinal stromal tumor: distribution, imaging features, and pattern of metastatic spread. Radiology 2003. Feb;226(2):527-532.

[14] Blay JY, Bonvalot S, Casali P, Choi H, Debiec-Richter M, Dei Tos AP, Emile JF, Gronchi A, Hogendoorn PC, Joensuu H, Le Cesne A, McClure J, Maurel J, Nupponen N, Ray-Coquard I, Reichardt P, Sciot R, Stroobants S, van Glabbeke M, van Oosterom A, Demetri GD; GIST consensus meeting panelists. Consensus meeting for the management of gastrointestinal stromal tumors. Report of the GIST Consensus Conference of 20-21 March 2004, under the auspices of ESMO. Ann Oncol. 2005 Apr;16(4):566-78. doi: 10.1093/annonc/mdi127. Erratum in: Ann Oncol. 2005 Jun;16(6):993.

[15] Demetri GD, von Mehren M, Antonescu CR, et al. NCCN Task Force report: update on the management of patients with gastrointestinal stromal tumors. J Natl Compr Canc Netw. 2010;8(Suppl 2):S1–41.

[16] Judson I, Jones RL, Wong NACS, Dileo P, Bulusu R, Smith M, et al. Gastrointestinal stromal tumour (GIST): British Sarcoma Group clinical practice guidelines. Br J Cancer. 2025;132(1):1–10.

[17] Serrano C, Martín-Broto J, Asencio-Pascual JM, López-Guerrero JA, Rubió-Casadevall J, Bagué S, et al. 2023 GEIS Guidelines for gastrointestinal stromal tumors. Ther Adv Med Oncol. 2023; 15:1–18.

[18] Fan X, Han H, Sun Z, Zhang L, Chen G, Mzee SAS, Yang H, Chen J. Prognostic Value of Bleeding in Gastrointestinal Stromal Tumors: A Meta-Analysis. Technol Cancer Res Treat. 2021 Jan-Dec; 20:15330338211034259.