

# A Case Report of Spindle Cell Neoplasm (Leiomyoma) of Jejunum Presenting as Overt Lower Gastrointestinal Bleeding- A Radiological Perspective

## Case Report

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### Abstract

**Background:** Diagnosing gastrointestinal (GI) bleeding using radiological methods remains challenging, particularly when conventional endoscopic and imaging techniques fail to reveal a clear source. Computed tomography (CT) plays a supportive role by helping to localize the bleeding and identify potential causes, supplementing other modalities like endoscopy, nuclear scans, and angiography. This report emphasizes the diagnostic utility of multiphase contrast-enhanced CT enterography in detecting a rare benign smooth muscle tumor—jejunal leiomyoma—as the source of GI bleeding.

**Case Presentation:** We present the case of a 50-year-old woman who experienced acute hematochezia. Both upper GI endoscopy and colonoscopy were inconclusive. Multiphase contrast-enhanced CT enterography, performed with neutral contrast, demonstrated a well-defined, enhancing extra luminal mass in the proximal jejunum. Surgical resection followed by histopathological analysis confirmed the mass as a spindle cell tumor, consistent with a leiomyoma.

**Conclusion:** This case highlights the value of multiphase CT enterography in pinpointing bleeding sources and characterizing bowel lesions, thereby guiding surgical decisions. It also brings attention to a rare manifestation of small bowel leiomyoma presenting with overt lower GI bleeding.

**Keywords:** Lower gastrointestinal (GI) bleeding, Computed Tomography Enterography (CTE), Upper gastrointestinal (UGI) endoscopy.

## Introduction

Lower gastrointestinal (GI) bleeding is defined as bleeding that originates from the GI tract distal to the ligament of Treitz. While upper GI bleeding is more frequently encountered in clinical practice, bleeding from the lower GI tract remains an important and potentially serious condition. Small bowel sources are responsible for roughly 5–10% of all GI bleeding cases [1].

Visible, or overt, GI bleeding—such as hematemesis, hematochezia,

or melena—can be life-threatening and often necessitates a multidisciplinary approach to establish the diagnosis and guide therapy.

To evaluate small bowel sources of bleeding, several diagnostic methods are available. These include upper GI endoscopy, colonoscopy, nuclear medicine scans, video capsule endoscopy, and more recently, multiphase contrast-enhanced CT enterography.

Although extended endoscopic procedures may detect

abnormalities in about one-third of patients, their reach is limited when it comes to the distal segments of the small intestine. Capsule endoscopy has a variable sensitivity (ranging from 42% to 80%) in detecting lesions within the small bowel responsible for GI bleeding [2].

While nuclear medicine techniques are highly sensitive in detecting bleeding, their ability to precisely localize the site is limited due to relatively poor spatial resolution and insufficient anatomical detail. These scans also require significant time, specialized personnel, and equipment, which can limit their availability in acute settings [3].

Video capsule endoscopy, widely used in cases of obscure or intermittent GI bleeding, allows direct visualization of the small bowel mucosa. However, its utility in emergent situations remains uncertain [3].

Multiphase contrast-enhanced CT enterography has emerged as a valuable imaging modality for evaluating small bowel pathology. This technique combines the use of a multi-detector CT scanner with luminal distension achieved through the administration of a neutral oral contrast agent. Images are acquired in multiple phases—pre-contrast, late arterial, portal, and venous—following intravenous contrast administration. This cross-sectional method helps localize the bleeding site and identify underlying causes.

The high-resolution imaging and the ability to detect both bowel wall and extra-intestinal abnormalities have positioned CT enterography as a crucial tool in assessing small bowel disease.

Leiomyomas of the gastrointestinal (GI) tract are uncommon accounting for less than 1–2% of all benign small bowel tumours. Among small bowel neoplasms, spindle cell tumours are often gastrointestinal stromal tumors (GISTs), while leiomyomas represent a rare benign subset. They typically arise from the muscularis propria and grow extraluminally, often remaining asymptomatic until they reach a size that causes obstruction, intussusception, or vague abdominal discomfort. Bleeding, particularly overt lower gastrointestinal bleeding, is an uncommon presentation and is more frequently associated with mucosal ulceration overlying the tumor surface. This rarity, combined with the nonspecific nature of symptoms, contributes to frequent delays in diagnosis.

This case report describes a rare presentation of a proximal jejunal small leiomyoma in a 50-year-old female, with overt lower GI bleed as the initial clinical manifestation, emphasizing radiologic evaluation and its diagnostic value.

### Case description

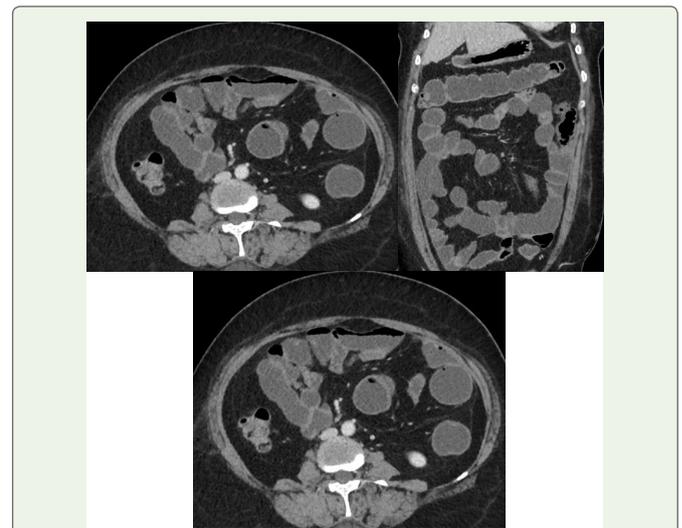
A 50-year-old female reported with a five-day history of bright red rectal bleeding (hematochezia), which was sudden in onset and not associated with abdominal pain or altered bowel habits. She also experienced progressive fatigue and light-headedness over this period. There was no history of NSAID use, anticoagulant therapy, or prior gastrointestinal symptoms.

On initial assessment, her vital signs were stable, and abdominal examination revealed no abnormalities.

Initial laboratory investigations revealed mild anemia with

hemoglobin of 9 g/dL, hematocrit of 28%, and a normal platelet count. Coagulation parameters, including PT/INR and aPTT, were within normal limits. Renal and liver function tests were unremarkable.

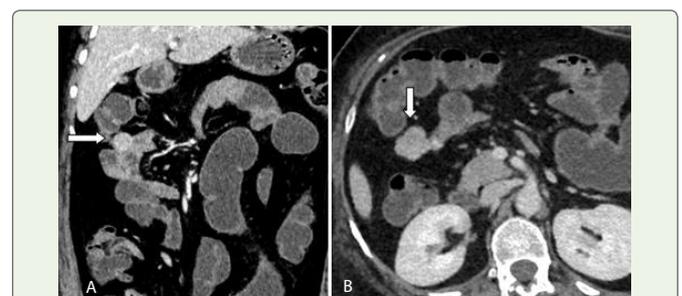
An upper gastrointestinal endoscopy was performed but yielded no findings. Similarly, colonoscopy failed to detect any source of bleeding within the visualized segments.



**Figure 1:** Axial and Coronal CT Enterography: CT combined with luminal distension of the small bowel by using neutral enteric oral contrast material.



**Figure 2:** Axial section (Early arterial phase) and Zoomed image on left: Reveals increased intra-luminal attenuation within the jejunum that was absent on pre-contrast images—consistent with active contrast extravasation. This pattern of high-attenuation foci in post-contrast images not present in earlier phases confirms ongoing bleeding [1].



**Figure 3:** Coronal and Axial sections (venous phase): There is well-circumscribed, extra-luminal enhancing lesion in the proximal jejunum.



Figure 4: Pathological specimen, showing the extraluminal leiomyoma

## Discussion

### Multiphase Contrast-Enhanced CT Enterography

The main objective of CT imaging in cases of suspected GI bleeding is to detect the presence of blood within the intestinal lumen, observe contrast extravasation, and identify the underlying cause of bleeding.

**Imaging Equipment and Technical Parameters:** Multiphase contrast-enhanced CT enterography was performed using a 128-slice multidetector CT scanner (REVOLUTION EVO, Wipro GE). The following parameters were used:

- Tube voltage: 120 kVp
- Tube current: 200 mAs (effective)
- Rotation time: 0.35 seconds
- Collimation: 0.5 mm slice thickness
- Pitch: 1.375:1
- Reconstruction interval: 1 mm

### Protocol

After a fasting period of 4–6 hours, the patient ingested approximately 1500 mL of neutral oral contrast solution (such as iso-osmotic mannitol) over a span of 40–60 minutes. This neutral contrast is essential for optimal bowel wall visualization, as it enhances the contrast between the bowel lumen and its enhancing mucosa, improving the detection of pathology.

Multiphase imaging was conducted following administration of intravenous contrast and the use of an antispasmodic agent (e.g., visceralgine or Buscopan, 0.5 mg IV) to reduce bowel motility and improve image clarity. A non-contrast scan of the abdomen was followed by contrast-enhanced scans during the arterial, portal, and venous phases. Intravenous contrast (120 mL of nonionic contrast at 350 mg/mL) was injected at a rate of 4 mL/s. Image data were then processed for multiplanar reconstruction on a dedicated workstation.

### Radiological Interpretation

**Findings on CT Enterography:** CT enterography &

angiography of the abdomen and pelvis revealed a ~ 27 x 20 mm well-circumscribed, extra-luminal enhancing lesion in the proximal jejunum (approximately 10 cm distal to the duodenojejunal junction). The lesion demonstrated homogeneous enhancement with a subtle intraluminal blush in arterial phase. No signs of obstruction or adjacent invasion were observed.

Jejunal leiomyomas generally arise from the muscular layers—typically the muscularis propria—and may extend outward. They may erode the mucosa, leading to bleeding. Radiologically, they appear as smooth, enhancing, well-defined lesions. In cases of mucosal ulceration, active bleeding may be visualized as contrast extravasation on angiographic phases.

**Surgical and Histopathological Findings:** The patient underwent an exploratory laparotomy, during which a segmental resection of the affected jejunal portion was performed. Intra-operatively, a well-encapsulated extraluminal mass was observed protruding from the jejunal wall. The overlying mucosa was congested and showed areas of ulceration, correlating with the site of bleeding.

**Gross pathology:** Examination of the resected specimen revealed a firm, well-demarcated mass arising from the jejunal wall and extending outward beyond the lumen. The mucosal surface overlying the mass was disrupted, and several dilated blood vessels were noted in the surrounding area.

Histological analysis demonstrated that the lesion originated from the muscularis propria. It was composed of spindle-shaped cells arranged in characteristic interlacing fascicles. The individual cells featured elongated nuclei and moderate amounts of eosinophilic cytoplasm. No signs of atypia, increased mitotic activity, or necrosis were observed. Numerous dilated and congested blood vessels were also identified within the lesion.

These findings confirmed the diagnosis of a benign spindle cell tumor of smooth muscle origin—specifically, a leiomyoma.

While gastrointestinal stromal tumors (GISTs) represent the more common spindle cell tumors in the small bowel, this lesion lacked the immune histochemical and morphological features typical of GISTs. The absence of malignant characteristics further supported the diagnosis of leiomyoma.

**Spindle Cell Tumors of The Small Bowel:** Spindle cell tumors of the small bowel represent a heterogeneous group of lesions, and accurate diagnosis often requires correlation between imaging, histopathology, and immunohistochemistry. The key differentials include:

- Gastrointestinal Stromal Tumors (GISTs)
- Leiomyomas
- Leiomyosarcomas
- Schwannomas
- Inflammatory Fibroid Polyps
- Desmoid Tumors

Table 1

Feature	Leiomyoma	GIST	Schwannoma	Adenocarcinoma
Origin	Muscularis propria	Interstitial cells of Cajal	Nerve sheath	Mucosal/epithelial
Location	Jejunum, ileum (rare)	Jejunum, ileum (common)	Ileum, stomach	Variable
Growth Pattern	Exophytic, well-circumscribed	Exophytic or endophytic, often lobulated	Submucosal, homogeneous	Irregular, infiltrative
Enhancement	Homogeneous	Heterogeneous, possible necrosis/cystic areas	Homogeneous or peripheral	Irregular or rim-like
Necrosis or Ulceration	Rare	Common in larger lesions	Rare	Frequent
Bleeding tendency	Rare (mucosal erosion)	Common	Uncommon	Common
Calcification	Rare	May be present	Rare	Possible
Immunohistochemistry	SMA+, desmin+, CD117-, DOG1-	CD117+, DOG1+, CD34+	S-100+	CK+, EMA+

**Conclusion**

This case highlights an unusual presentation of a proximal jejunal leiomyoma manifesting as overt lower gastrointestinal bleeding. It underscores the vital role of multiphase contrast-enhanced CT enterography in the evaluation of small bowel pathology, particularly in accurately localizing the bleeding source and aiding in surgical planning. Although CT enterography provides high-resolution imaging capable of detecting intramural and extraluminal abnormalities, superficial mucosal lesions and vascular anomalies may still be missed, which remains a limitation [2].

Radiologists should remain vigilant for rare benign entities such as leiomyomas when interpreting enhancing spindle cell lesions of the small intestine. A multidisciplinary approach—integrating imaging, surgical findings, and histopathological confirmation—is essential for definitive diagnosis and appropriate management.

**Key Learning Points**

**Rare Etiology:** Proximal jejunal leiomyomas are an uncommon but important differential in patients presenting with overt GI bleeding.

**Imaging Utility:** Multiphase contrast-enhanced CT enterography is a highly effective non-invasive tool for detecting and localizing sources of small bowel bleeding.

**Histological Confirmation:** Final diagnosis relies on histopathological evaluation and, when necessary, immunohistochemistry to differentiate leiomyoma from GIST and other spindle cell neoplasms.

Patient consent for publication was not obtained; however, this report contains no identifiable personal information, images, or data that could lead to patient identification. The case has been reported in full compliance with institutional and ethical guidelines.

**References**

- Guglielmo FF, Wells ML, Bruining DH, Strate LL, Huete A, et al. (2021) Gastrointestinal bleeding at CT angiography and CT enterography: imaging atlas and glossary of terms. *Radiographics*. 41:1632-1656.
- Eid MEI Sirafy N, Kassem MI (2013) Role of CT enterography in obscure gastrointestinal bleeding. *The Egyptian Journal of Radiology and Nuclear Medicine*, 44: 9-14.
- Feingold DL, Pappou EP, Lee-Kong SA (2020) Diagnostic Modalities in Gastrointestinal Bleeding. *Clin Colon Rectal Surg* 33: 5-9.
- Lhewa DY, Strate LL (2012) Pros and cons of colonoscopy in management of acute lower gastrointestinal bleeding. *World J Gastroenterol* 18: 1185-1190.
- Strate LL, Naumann CR (2010) The role of colonoscopy and radiological procedures in the management of acute lower intestinal bleeding *Clin Gastroenterol Hepatol* 8: 333-343.
- Rajput D, Kumar N, Mallik D, Singh A, Sharma J (2022). Proximal Jejunum Leiomyoma unmasked as Acute Volvulus in an adult: a rare case report with management review. *Pol Przegl Chir* 94: 49-52.