

Laparoscopic-assisted resection of jejunal GIST with Acute Gastrointestinal Bleed

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ABSTRACT

Small intestinal bleeding accounts for about 5-10% of gastrointestinal bleed. Jejunal GIST's though can be a cause but rarely present with acute bleed. The diagnosis of such cases can be quite challenging and requires a multidisciplinary approach. We present a case of acute bleed from jejunal GIST that was managed by laparoscopic-assisted resection. The postoperative period was uneventful and the patient was discharged on day four. Histopathological examination of the specimen was suggestive of GIST that was confirmed further with immunohistochemical staining.

Keywords: *Intestinal bleed, Laparoscopic resection, Spindle cell neoplasm.*

Gastrointestinal stromal tumor (GIST) was first described by Mazur and Clark in 1983 [1]. It is the most common mesenchymal neoplasm of the gastrointestinal (GI) tract and accounts for less than 1% of all GI tumors [2]. The stomach is the most frequent location where GISTs may occur followed by the small intestine. In the small bowel, jejunal GISTs are rare tumors as they account for only 0.1–3% of all gastrointestinal tumors [3,4]. They are usually silent and are discovered incidentally during radiologic or endoscopic examinations or during surgery. Larger tumors (> 4cm) may present as abdominal emergencies like GI haemorrhage (usually due to pressure necrosis and ulceration of the overlying mucosa), intestinal obstruction, or perforation.

We present a case of laparoscopic-assisted resection of jejunal GIST with acute bleed. The idea of presenting this case is to localise the lesion laparoscopically and plan an ideal site for laparotomy in order to shorten the duration of surgery.

CASE REPORT

A 65-year-old gentleman presented to us with complaints of passing three episodes of black coloured stools just before coming to the hospital. It was associated with giddiness, breathlessness and decreased urine output. On examination, the patient was conscious, oriented with a pulse rate of 108 beats per minute and blood pressure of 100/60 mmHg. Systemic examination was unremarkable.

Blood samples were taken for the investigations and resuscitation was started with crystalloids. Ryle's tube and Foley catheter were placed and the patient was admitted to the intensive care unit for further evaluation and management. Initial investigations revealed haemoglobin of 7.4 g/dl, haematocrit of

22.2 percent and rest blood investigations were within normal limits. Esophagogastroduodenoscopy was done that was normal. Colonoscopy revealed blood clots in the distal ileum (Fig. 1). Contrast-Enhanced Computed Tomography (CECT) of the abdomen was suggestive of well-defined enhancing exophytic lesion from mid-jejunum likely GIST (Fig. 2).

The patient was resuscitated in the intensive care unit. Two units of whole blood were transfused. He again developed episodes of melena. Haemoglobin and haematocrit dropped and were 6.2 g/dl and 17.9%, respectively. He was transfused with three units of whole blood and after taking informed consent, an emergency diagnostic laparoscopy was planned. Pneumoperitoneum was created with a veress needle. A 5 mm camera port placed in the epigastrium and two 5 mm working ports were placed in midclavicular line in the subcostal region

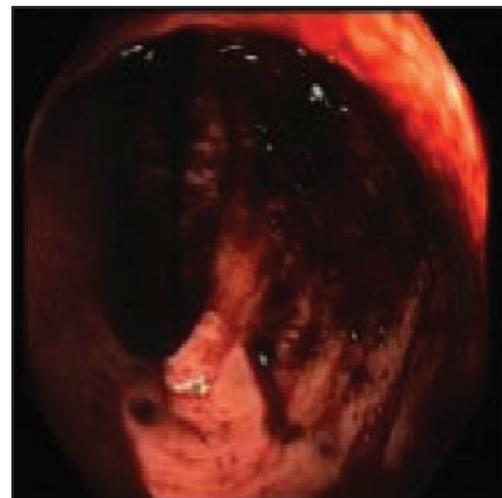


Figure 1: Colonoscopic view of the distal ileum showing blood clots.



Figure 2: CT angiogram showing enhancing lesion in the proximal jejunum.

on either side. Bowel walk was done that revealed 3 x 3 cm exophytic lesion around mid-jejunum with blood clots in the small and large bowel.

A small midline laparotomy was made and the jejunal segment with growth was taken out (Fig. 3). Growth with 10 cm margins of jejunum on either side along with a wedge of the mesentery was resected and bowel continuity restored using 2-0 polydioxanone (PDS) in two layers. Laparotomy was closed using 1-0 loop ethilon and skin closed with 3-0 vicryl in a subcuticular fashion. The cut section of the specimen revealed ulceration on the mucosal aspect (Fig. 4).

The patient was observed in ICU overnight, clear liquids were started on a postoperative day one and progressed to soft diet on day 3. He was discharged on postoperative day 4. Histopathology report was suggestive of spindle cell neoplasm likely GIST with 2 mitoses/50HPF and it was confirmed by immunohistochemistry (IHC) when neoplastic cells stain positive for CD-117 and DOG-1. He was not given imatinib as it was a low-risk tumor. The patient was followed up in the outpatient department at 1 and 2 months and was doing well.



Figure 4: Cut section of the specimen showing mucosal ulceration.



Figure 3: Intraoperative picture showing jejunal lesion delivered out through small laparotomy.

DISCUSSION

Gastrointestinal stromal tumors (GISTs) are mesenchymal neoplasms of the GI tract. They arise from the interstitial cells of the canal, which are part of the autonomic nervous system of the intestine [5]. GISTs are usually found in adults, being diagnosed more frequently in the 7th decade of life and are more predominant in males. They are more likely found in the stomach (40% to 60%), followed by small bowel (25%) and occur less commonly in the colon, rectum, appendix, oesophagus, mesentery, omentum, or retro-peritoneum, [6-9]. Jejunal GISTs account for about 10% of GISTs arising from the gastrointestinal tract [10,11].

GISTs have different sets of markers, that include C-KIT (CD117), DOG-1, CD34, SMA, S100, and Desmin, of which, they are almost always positive for C-KIT and DOG1 [5,12-15].

GISTs usually are indolent tumors. They may present with non-specific symptoms like vague abdominal pain, abdominal fullness, and early satiety. They may be responsible for chronic GI bleeding and rarely may cause acute massive bleeding. The reason for their hemorrhagic potential is the ulceration of the mucosa [9].

The preoperative diagnosis may be difficult and is confirmed during surgery. Patients who present as acute gastrointestinal bleeding should undergo endoscopic examinations as the first modality to determine the source of bleeding, if not identified by endoscopy, a CT-scan or angiography is mandatory in order to give additional information regarding the site, size and any active bleeding from the lesion [6]. The treatment of choice is complete surgical resection and treatment with Imatinib, a tyrosine kinase inhibitor is beneficial after resectional surgery of high-risk GISTs [4,7,11,16-18]. In our patient, the diagnosis of bleeding GIST was made preoperatively by CT scan as endoscopy and colonoscopy could not localise the site of bleed and emergent surgical resection of the involved jejunal segment was done following oncological principles. Imatinib was not prescribed as histopathological reports were suggestive of low-risk GIST.

Jejunal GISTs being the less common cause of GI bleed, a high index of suspicion after ruling out more common causes can be life-saving at times and should be considered while taking care of GI bleed patients.

CONCLUSION

Jejunal GISTs though rarely present as acute gastrointestinal bleed should be suspected in view of normal endoscopy and colonoscopy. Timely investigations and proper interdepartmental coordination could be life-saving in acute settings. Diagnostic laparoscopy in such cases can localise the lesion, helps in planning the ideal site for incision, decreases the morbidity and helps in early postoperative recovery.

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