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Case Report

A rare case of mesenteric gastrointestinal tumour (GIST) presenting as an acute abdomen – A case report.

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Introduction

Gastrointestinal stromal tumors (GISTs) are rare gastrointestinal neoplasms of mesenchymal origin. Arising from the interstitial cells of Cajal, they can be located throughout the GI tract with the stomach and small bowel being the most common sites [1]. Majority present with vague abdominal symptoms and features of gastrointestinal bleeding. Here, we present a case of small bowel mesenteric GIST presenting as acute abdomen, which posed intraoperative challenges due to its difficult anatomical location.

Case presentation

A 57-year-old previously healthy male patient presented with severe left upper abdominal pain associated with nausea and vomiting for two days. There was no history of fever, melaena or constipation. There was no history of loss of weight or loss of appetite. The patient was afebrile and haemodynamically stable. On abdominal examination, there was evidence of localized peritonitis. Severe tenderness and guarding was noted in the left upper quadrant with diminished bowel sounds.

Plain abdominal X-ray and erect chest X- ray did not show evidence of pneumoperitoneum or intestinal obstruction. Hematological investigations i.e. full blood count (FBC), serum amylase, C-reactive protein (CRP) and liver function tests, were within the normal range. Since the ultrasound scan (USS) abdomen was inconclusive, a contrast enhanced CT was performed. CECT findings suggested possible small bowel perforation with abscess formation within the left upper quadrant. The perforation appeared walled off by small bowel loops with a localized collection. The patient was started on fluid resuscitation and intravenous antibiotics. Since conservative measures failed to show improvement, an explorative laparotomy was performed.

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Intraoperatively, a mass was noted in the left upper infracolic compartment composed of small bowel loops, omentum and proximal descending colon. Following adhesiolysis and separation of small bowel loops, a tumour like lesion was noted at the centre of the inflammatory mass. The tumour was located within the jejunal mesentery, 4-5cm from the duodenojejunal (DJ) flexure. It was attached to the mesenteric border of the jejunum and extended into the root of the mesentery. It was closely related to the duodenum and superior mesenteric (SM) vascular pedicle. There was evidence of tumour perforation with necrotic material and inflammatory exudate contaminating the peritoneal cavity. Rest of the small bowel and large bowel appeared normal. There was no evidence of tumour metastasis.

Following thorough peritoneal lavage, surgical options were considered. Excision of the mass risked injury to the closely related structures and may have required further major oncological resection; Whipple procedure. Damage control approach with biopsy followed by second stage surgery would leave behind the perforated tumour risking further sepsis and subsequent difficult re-laparotomy. In this case we decided to proceed with excision of the lesion.

The jejunum was divided on either side of the tumour. Keeping close to the tumour, dissection was carried out on the mesenteric side. The pulsations of the superior mesenteric artery guided medial dissection. Mesenteric vessels were controlled with ligatures and ultrasonic energy devices. Complete excision of the tumour with a clear margin was possible. Following resection, the remaining proximal jejunum, DJ flexure and 4th part of duodenum appeared de-vascularized. The ligament of Treitz was divided and the 4th part of duodenum (D) was mobilized. The non-viable segments were excised until viable segment of duodenum was reached.

Reconstruction to establish gastrointestinal continuity was the next step. An end to side duodenojejunostomy was performed using a 25mm circular stapler. The anvil of the circular stapler was introduced into the cut end of D3 and a purse string suture was applied. The body of the stapler was introduced into the distal part of the jejunum via an enterotomy. The duodenojejunostomy was performed in proper orientation avoiding tension and the enterotomy was closed. A gastrojejunostomy was created distal to the anastomosis to bypass gastric contents into distal jejunum. A pyloric exclusion was performed using a large bore polygalactine suture. Drains were placed in the pelvis and close to the duodenojejunal anastomosis.

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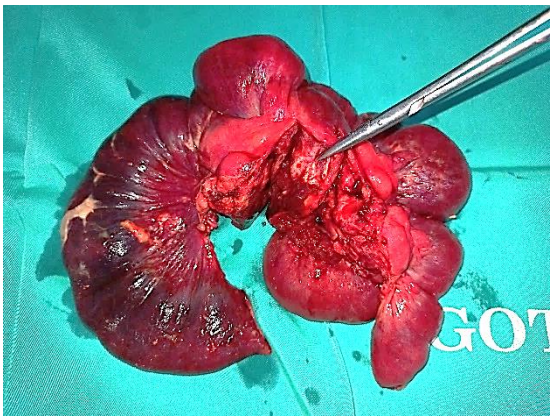

Figure 1: Resected specimen (Pointer at tumor)

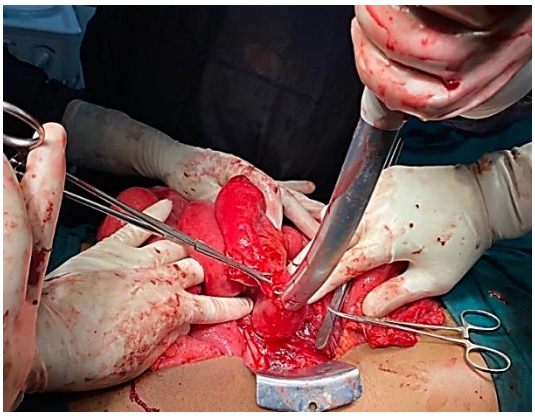

Figure 2: Stapler duodeno-jejunostomy

Postoperatively, the patient was kept nil orally with nasogastric (NG) drainage, IV fluid replacement and parenteral nutrition. Surgical drains were monitored for bile. The patient had an uneventful postoperative phase. Oral feeds were gradually started from postoperative day 4. Length of hospital stay was 6 days.

Final histological diagnosis was a gastrointestinal stromal tumour, 70*65*30 mm in size originating from the muscularis propria of the jejunum. The tumour showed evidence of tumour necrosis and perforation. The mitotic rate was 1-2/hpf and the tumour was completely resected with tumour free margins. The patient was referred for oncological opinion.

Discussion

GISTs are found most commonly in the stomach or small bowel and can be exophytic or endophytic in relation to the bowel wall. Rarely, as in this case, some tumours may be located within the mesentery, omentum or retroperitoneum (extragastrointestinal GIST) and these comprise less than 5% of all tumours. This patient with a GIST located in the small bowel mesentery, presented to our unit as an acute abdomen. Atypical presentations such as tumor perforation, rupture, peritonitis and massive intra-abdominal bleeding have been reported and may lead to diagnostic dilemmas [2,3].

In acute care surgery, surgeons may encounter situations where intraoperative pathology differs from the preoperative clinical diagnosis. In such situations, intraoperative decision making plays a critical role in the final outcome. Multiple factors have to be considered in deciding the suitable surgical approach. Current physiological status of patient and patient safety are key factors. In this patient we encountered a perforated tumour of unknown histology situated within the small bowel mesentery. The surgical approach had to be tailored to address the acute sepsis and achieve tumour clearance.

The decision was between primary resection or biopsy with subsequent re-exploration. In this patient we took a calculated risk to excise the tumour. During resection, meticulous

dissection was done in correct tissue planes after defining the anatomy. During reconstruction we ensured the anastomoses were well vascularized, properly oriented and tension free. Addition of a bypass procedure in the form of a gastro-jejunostomy helped diversion of gastric contents. Adherence to surgical principles helped us achieve a favourable final outcome with complete excision of the tumour.

GI continuity was restored using a stapler end-side duodenojejunostomy (DJ) anastomosis with gastrojejunostomy and pyloric exclusion. We conducted a literature survey to assess techniques and safety of duodenojejunostomy anastomosis. Majority were case reports and case series. Both hand sewn and stapler anastomosis techniques were described with side-side and end-side configurations. Laparoscopic duodenojejunostomy was also described for management of SMA syndrome [4]. The available literature showed it to be a safe technique with good functional outcomes [5]. However, data on anastomotic leak rate was limited. Addition of gastric bypass procedures and peri-anastomotic drainage were shown to improve anastomotic safety.

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