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Massive Lower Gastrointestinal Bleeding Due to Small Bowel Gastrointestinal Stromal Tumour (GIST)

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GIST tumour; Gastrointestinal stromal tumours; Massive gastrointestinal bleeding; Small bowel GIST

1. Abstract

1.1. Background: Gastrointestinal Stromal Tumours (GIST) are rare, upper gastrointestinal bleeding is the most common clinical manifestation of GISTs, manifesting as hematemesis or melena. We are describing an acute surgical gastrointestinal bleeding that affecting patient stability secondary to GIST.

1.2. Case Report: This is a 47 years old male who presented to ER with fresh rectal bleeding for two days with class 2 haemorrhagic shock & found to have Jejunal mass then shifted to emergency laparoscopic exploration & resection & histopathology revealed of GIST tumour.

1.3. Conclusions: More studies should be conducted of GIST patients presenting with massive GI bleeding as percentages and the number and surgeons need to put GIST tumour as one of the differential diagnosis in patients with history of lower GI bleeding.

2. Introduction

Gastrointestinal Stromal Tumours (GIST) are considered the most common mesenchymal tumours of gastrointestinal tract while they account only for 1-3 % of gastrointestinal tumours. Up to 30% of GIST tumours progress to malignancy [1]. Patien may be presented with melena and less frequently hematemesis. Tumour rupture with intra-abdominal haemorrhage is uncommon, but when it occurs, it frequently requires emergent surgical intervention

3. Case presentation

This is a 47-year-old gentleman heavy smoker. He has a history of upper GI bleeding with two attacks of melena in the last three months.

The patient presented with main complain of fresh rectal bleeding. He gave a history of nausea, vomiting, epigastric pain, fainting episode and black stool for 7 days and fresh bleeding per rectum for the last 2 days prior presentation to our hospital.

On Examination upon arrival: conscious alert oriented and pale. Vital signs showed BP 101/86 HR 110 T 36.5 RR 20 SPO2 100% RA.

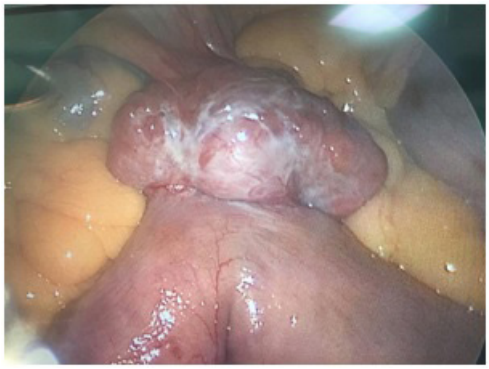
Abdominal examination was unremarkable. PR: showed fresh blood and clots with no local causes of bleeding. Laboratory results: WBC 10.6 HGB 7.6 (base line of 16) PLT 109 INR 1.3.

The patient admitted. Resuscitated with IVF and 2 PRBCs. Undergone urgent Colonoscopy: showed external hemorrhoids, normal mucosa up to the terminal ileum, no polyps or masses were seen.

CT abdomen with contrast: Distal jejunum or proximal ileal loops mass in keeping with gastrointestinal stromal tumor with focal liver hyper vascular lesion, likely metastasis. In view of background liver fatty change, MRI was advised (Figure 1, 2).

Urgent Laparoscopic Exploration was done. Intraoperative finding was a 5 x 5.5 cm jejunal mass adherent to the abdominal wall (Figure 3). Resection and extracorporeal side to side anastomosis was done (Figure 4, 5).

Post-operative period was uneventful, and he was discharged home.



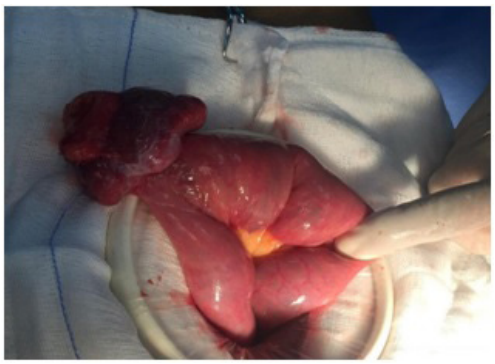


Figure 1, 2: hypervascular enhancing mass at the distal jejunum bowel loops. It merasures 4.3 x 4.8 cm. in AP and transverse diameter.

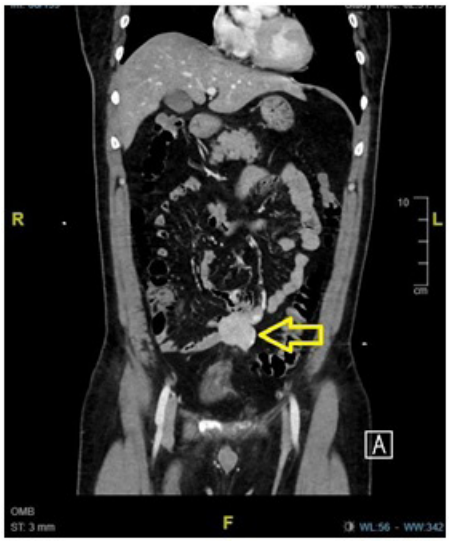
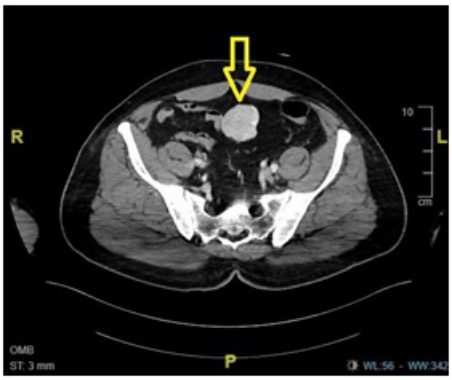


Figure 3: laproscopic view of the jejunal mass



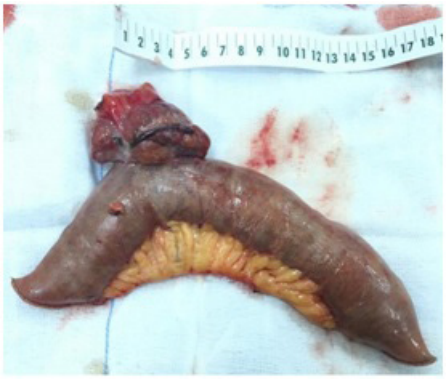


Figure 4, 5: the jejunal mass before and after resiction

4. Histopathology Report

Small bowel, jejunum mass, resection:

- Mitotic rate: 2/50 HPF.
- Histologic grade: low grade.
- Risk assessment: moderate risk.
- Proximal, distal and deep resection margins are free of tumor.
- Pathologic staging: pT3 No Mx.

The patient was referred to the Medical Oncology and was started on Gleevec and is continued on 400 mg per day for the three years. MRI of the abdomen showed noncirrhotic liver with no bleeding with no benign-looking focal lesions, not suspicious of any hepatic metastasis.

The patient had a CT/PET scan was done after 3 years from the intervention which revealed absence of any significant hypermetabolic activity throughout and was not suggesting any evidence of metastasis.

5. Discussion

The majority of GIST arises from the stomach being the most common location (60%), small intestine, duodenum, colon/rectum and very rarely from the oesophagus [2]. few primary cases have been reported to originate from the omentum, mesentery and retroperitoneum.

These tumours are considered to be due to activating mutations of proto-oncogenes c-KIT or platelet-derived growth factor receptor alpha polypeptide, as a result it increases tyrosine kinase receptor activity, resulting in uncontrolled proliferation of stem cells that differentiate into intestinal cells of Cajal [3]. GIST can also be seen with neoplastic syndromes, but most of the times it's sporadic in occurrence. Both benign and malignant GISTs commonly show losses in chromosomes 14 and 22 in cytogenetic studies and by comparative genomic hybridization. Losses in 1p and chromosome 15 have been shown less frequently [4]. Less than 5% occur as part of hereditary familial or idiopathic multitumor syndromes [5].

GISTs can be discovered incidentally during radiological investigations or other procedures due to its asymptomatic behaviours sometimes, but the presentation widely varies from vague abdominal pain and fullness to perforated hollow viscus, haemorrhage, and bowel obstruction which makes the diagnosis a challenge sometimes.

Melena and less frequently hematemesis are the forms of bleeding a GIST patient can present with. Tumour rupture with intra-abdominal haemorrhage is uncommon, but when it occurs, it frequently requires emergent surgical intervention in the present case patient presented mainly with per rectum bleeding for two days which was preceded by melena for seven days. It was significant bleeding that affecting the patient stability and general condition. He was complaining of symptoms of anemia complications in term of fainting episode and generalized fatigability and he was pale and tachycardic upon examination.

The growth of the tumour causes different symptoms such as GI bleeding or non-specific GI symptoms. Around 40% are associated with ulceration, and 28% present with overt GI bleeding (acute or chronic), and only 20% grow large enough to present with pain, a palpable mass or obstruction secondary to intussusception [3].

A combination of immunohistochemical assay for CD117, an epitope of c-KIT receptor tyrosine kinase, and morphological histology is usually diagnostic. Three morphological histology subtypes can be found: spindle cells (70%), epithelioid cells (20%), or mixed spindle and epithelioid cells (10%) [3]. In the present case: According to CAP cancer protocol in risk assessment for gastrointestinal stromal tumor, the tumor falls in the category of moderate risk of progressive disease, as the tumor is 5.5 cm in greatest dimension, located in the jejunum, with less than 5 mitosi/50 HPF. Tumor cells are diffusely positive for Dog-1, CD117 (C-kit), smooth muscle actin, while they are negative for Desmin and CD34. K-67 proliferation index is low (<2%).

The main differential diagnoses include smooth muscle tumors, schwannoma, desmoid fibromatosis, inflammatory myofibroblastic tumor, inflammatory fibroid polyp, solitary fibrous tumor, synovial sarcoma, follicular dendritic cell sarcoma, glomus tumor, and melanoma [6].

The standard of care for the treatment of GISTs which achieves about 48-65% five years survival has been complete surgical resection with negative margin [2]. Tumour size and mitotic index are the two most important risk defining factors which categorise Patients into low, intermediate, and high risk of recurrence. The high risk of malignant potential and recurrence is seen in tumours more than 5-10 cm and mitotic count of 10/50 HPF, where Recurrences reach up to 80% in the high risk group [1]. Due to the high rates of recurrence and mortality for the high risk group; surgical resection alone is not sufficient and adjuvant therapy is advisable.

The use of adjuvant imatinib mesylate (Gleevec) c-Kit tyrosine kinase inhibitor has successfully increased the overall survival (OS) and progression free survival [1]. imatinib is used in moderate to high risk of recurrence with tumour size>3 cm or mitosis >5/HPF, and In metastatic or unrespectable disease where its use made the overall 2-year survival about 70% compared with 25% for those on traditional chemotherapy [4]. The patient we are presenting had regular follow up and showing good respond with no recurrence.

6. Conclusion

GIST tumour needs to be considered as one of the differential diagnosis for those patients with massive lower GI bleeding. However, further studies needed in regard the percentages and the number of GIST patients presenting with massive GI bleeding.

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