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CASE STUDY

POLYPOID GASTRIC GIST PRESENTING WITH MASSIVE UPPER GI BLEED: A CASE REPORT

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ABSTRACT

Gastro-intestinal Stromal Tumours (GIST) are common mesenchymal tumours of the gastrointestinal tract. We report a case of a patient presenting with massive hematemesis, malena, hypotension and severe anemia. There was 7x7cm ulcerated bleeding gastric polyp on posterior gastric wall on endoscopy. Laparoscopic excision of polyp was performed successfully with anterior gastrotomy approach. Histopathology revealed a benign spindle cell tumour (GIST) with clear margins. This case is being presented due to the peculiar mode of presentation with massive UGI bleed (rare mode of presentation of GIST) and peculiar morphology of the GIST which presented as a polyp rather than a submucosal mass. This case report highlights the necessity of early surgical intervention in such cases to avoid mortality due to bleeding and to raise the awareness of rare causes of upper gastrointestinal bleed and their management.

INTRODUCTION

Gastrointestinal stromal tumours arise from cells of Cajal in interstitial layer of GI tract anywhere from esophagus to rectum. GISTs are uncommon lesions accounting for only about 3% of all GI neoplasms. The stomach is the commonest site of GIST. Morphologically they appear as submucosal, intramural masses. Intraluminal growth and polypoid morphology is rare. (Miettinen *et al.*, 2006) Usually gastric GISTs present with dyspepsia, vomiting, early satiety and vague abdominal pain. Small growths may be asymptomatic and are usually detected incidentally. Chronic GI bleeding with anemia is a fairly common presentation but acute massive bleeding has been reported rarely. (Seya *et al.*, 2008) Finally, there are only a handful of case reports describing laparoscopic management of GIST presenting with complications. Our case is a rare presentation due to polypoid morphology and acute presentation with massive GI bleeding (enough to cause hypovolemic shock). This case report highlights the necessity of early surgical intervention in such cases.

Case History

A fifty-two year old male presented in emergency with nausea, vomiting, giddiness, hematemesis (4-5 episodes) and malena since three days. Patient gave history of early satiety in past six months. There were no other positive symptoms. On physical examination, patient was severely pale. He was hypotensive (90/70 mmHg), tachycardic (120/min) and tachypneic (26/min). Per abdomen examination revealed epigastric tenderness and distended abdomen with sluggish bowel sounds. Per rectal examination revealed tarry stools which were positive for blood on guiac test. Nasogastric tube aspirate revealed bright red blood. Hematological examination revealed severe anemia [Hemoglobin – 5.6 g/dl]. Patient was resuscitated and stabilized with transfusions of packed red cells. Upper GI endoscopy revealed a 7x7cm gastric polyp with ulceration located on posterior wall of stomach and blood clots in stomach. There was active bleeding from the polyp. CT scan of abdomen was done which revealed presence of gastric intraluminal mass with no other abnormal findings. Laparoscopic surgical approach was planned for resection. Patient was placed in French position and standard 5 port placement was done as for laparoscopic gastrectomy. Diagnostic laparoscopy was done initially, which revealed no enlarged lymph nodes or other abnormalities. An anterior gastrotomy was done with ultrasound shears and polyp was delivered out through this. Endo-GIA stapler was applied to base of polyp and resected with two sequential firings. The anterior gastrotomy was closed by firing the stapler across the gastrotomy. Post operative period was uneventful and the patient was discharged on the seventh post-op day.

Histopathology showed a nonencapsulated, submucosal nodular tumour of around 5 x 7 cm. Microscopy showed interlacing fascicles of spindle shaped cells with elongated, plump nuclei. There were six to seven mitotic figures per fifty high power fields. Surgical lines of resection were free of tumour. Immunohistochemistry study revealed diffuse

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immunoreactivity for CD-117, CD-34 positivity; Ki 67 less than 5%. The final diagnosis was benign GIST.

As per current guidelines for GIST, patient was started on daily oral Imatinib therapy. Patient was followed up at 3 month, 6 months and 1 year. Follow up UGI endoscopy and CT scan was normal with no evidence of recurrence. Staple line was healthy and healed. Patient continues to be followed up and is asymptomatic, taking oral Imatinib therapy (400 mg twice daily).

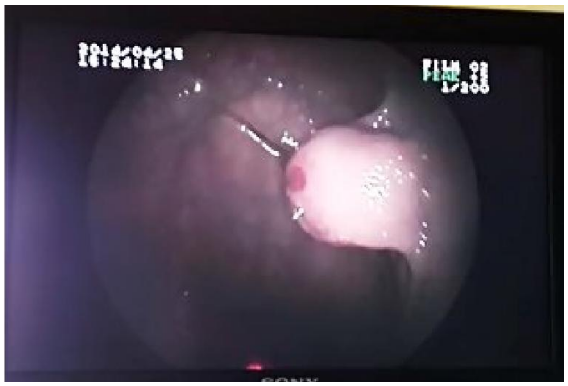

Figure 1. Endoscopic view of polyp in stomach

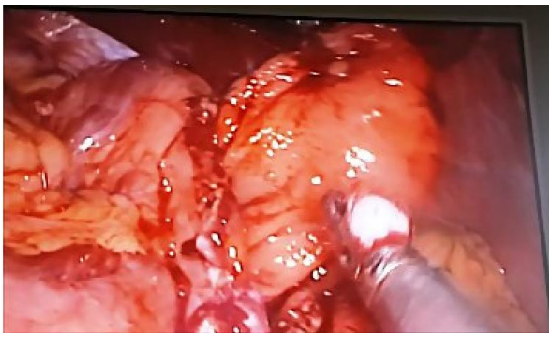

Figure 2. Laparoscopic view of polyp delivered through gastrotomy

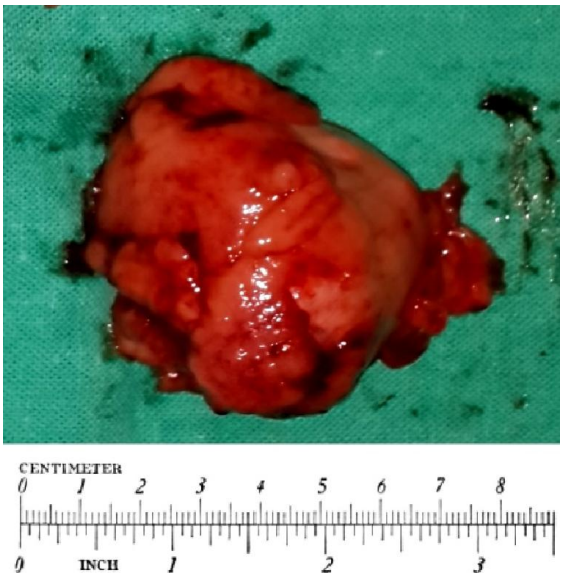

Figure 3. Specimen of resected tumour

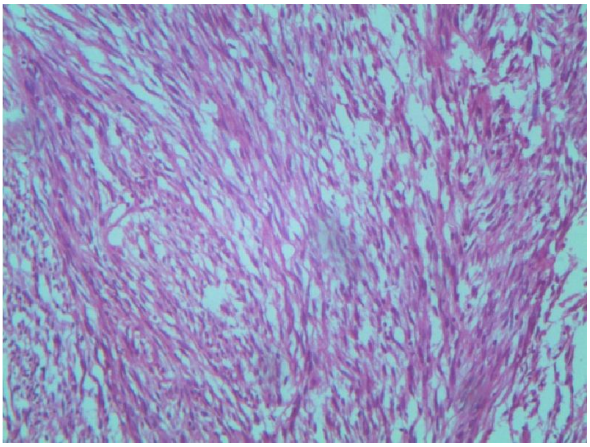

Figure 4. Microscopic view showing tumour composed of spindle shaped cells

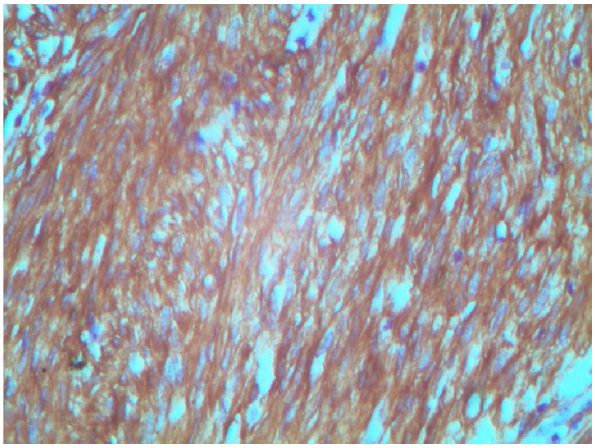

Figure 5. Showing immuno-staining strongly positive for CD- 117

DISCUSSION

Incidence of GIST has shown a steady rise due to increased application of CD117 and C-kit testing to mesenchymal tumours. CD117 is the product of c-kit proto-oncogene which is a tyrosine kinase growth factor receptor present in 90% of GIST cells. Mutation of kit proto-oncogene results in constitutive stimulation even without the presence of the stem-cell growth factor. (Miettinen *et al*., 2006) GISTs are believed to arise directly from interstitial cells of Cajal which form part of myenteric plexus in GI tract (Kindblom *et al*., 1998). Stomach is the commonest location of GIST (60-70%). (Miettinen *et al*., 2006) Presentation is erratic. Seventy percent are symptomatic at presentation, 20% are asymptomatic and 10% are detected at autopsy. (Steigen *et al*., 2008) Common presentations include abdominal pain, palpable mass, chronic gastro intestinal bleeding, fever, anorexia, weight loss and anaemia. Acute presentations like hemorrhage and perforation are rare. (Miettinen *et al*., 2006) GIST is an unusual cause of upper GI bleed with a tendency to rebleed. Early surgical intervention is the treatment of choice to prevent re-bleeds. In the surgical treatment of GIST, the goal is complete gross resection with an intact pseudo-capsule and negative microscopic margins. Lymph node involvement is very rare and therefore lymphadenectomy is not routinely indicated. (Woodall *et al*., 2009)

Patients should be followed up on long term basis as local recurrence or distant metastases can occur many years after surgery. These tumours spread by the haematogenous route predominantly to the liver. Fletcher in 2002 classified GIST into very low, low, intermediate and high risk groups based on tumour size and mitotic rate. (Fletcher *et al*., 2002) Tumour size >5 cm and mitosis >5 per 50 HPF increases the risk for metastasis and local recurrence. (Fletcher *et al*., 2002) Median survival after resection of GIST is reported to be around eight years with local recurrence rate of around 50% after initial curative resection. (Ng *et al*., 1992 and Josnsuu *et al*., 2003) Gastric GISTs have lower risk of recurrence than GISTs at other sites.

GIST response to conventional chemotherapy is very poor (<10%), while radiotherapy is only used with palliative intent. Introduction of tyrosine kinase inhibitors like imatinib has revolutionized GIST management. Phase III trials have demonstrated enhanced disease-free survival with a twice daily dose of 400 mg with only minor side- effects like diarrhea, nausea, rash and periorbital edema. (Robert *et al*., 2006) Duration of treatment has not been well-defined but a minimum of two years treatment has been advised. (Robert *et al*., 2006)

Prospective, randomized trial studying the role of laparoscopic surgery in the management of GIST has not been performed. But a few studies have shown low morbidity and short hospitalization along with long-term disease-free survival. (Novitsky *et al*., 2006) A laparoscopic approach may be the preferred resection technique in patients with small- and medium-sized gastric GISTs.

In summary, our case was notable because of the polypoid morphology of the tumour and the unusual mode of presentation with acute massive gastrointestinal bleeding. We were able to perform tumour resection laparoscopically. Thus laparoscopic surgical resection may be attempted safely for management of complicated gastric GISTs. The tumour fit into the high-risk category because of its size and mitotic activity, and hence patient was started on imatinib orally.

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