Gastric Stromal Tumour presenting as Upper Gastrointestinal Bleed

Col S P Rai*, Col PK Hota⁺, Lt Col P Ganguli[#], Col S Mallick**

MJAFI 2008; 64 : 171-172

Key Words : Gastric stromal tumours; Gastrointestinal stromal tumours; GIST; GI bleed

Introduction

Gastrointestinal stromal tumours (GISTs) are tumours arising in the gastrointestinal (GI) tract. GISTs are rare and constitute only about 1% of all gastrointestinal (GI) malignant tumours; nevertheless, they are the most common mesenchymal neoplasm of the GI tract [1]. GISTs are found in the stomach in 50-70% of cases, yet they are least prevalent malignant tumour of the stomach, constituting only 1-3% of all gastric malignant tumours [2]. These tumours originate from the Interstitial Cell of Cajal [3]. Mitotic rate over 5 per 50 high-power fields (HPF's), or more than 5 cm in size are predictive of malignancy (75% positive prediction) [4]. We report a case of benign spindle cell gastric stromal tumour presenting with acute upper GI bleed and managed successfully by resection.

Case Report

A 46 year old man, social drinker, was admitted with continuous fever with malena for one week and hematemesis with giddiness of one day duration. He gave history of taking nonsteroid anti-inflammatory drug for arthralgia left knee a week prior to the onset of symptoms. There was no significant past illness. Examination revealed an ill looking, drowsy, pale, averagely built male who was febrile (100^oF) and had a pulse of 120/minute, respiration 22/minute and blood pressure 140/70 mm Hg. The abdomen was soft. Spleen was palpable two cm below the subcostal margin, firm and nontender. Investigations revealed severe anemia (haemoglobin of 2.8 gm/dl, packed cell volume 10%) with normal prothrombin time, activated partial thromboplastin time, total and differential leucocytes counts. Peripheral blood smear showed microcytic, hypochromic anaemia. Other biochemical parameters, chest radiograph and electrocardiogram were normal.

Upper GI endoscopy revealed a bleeding polyp below gastro esophageal (GE) junction. Local infiltration of

adrenaline failed to arrest the bleeding. On examination he had poor general condition, severe anaemia, tachycardia and hypotension. Three packed red blood cells (RBC) transfusions over 24 hours were given but his haemoglobin dropped to 1.8 gm/dl and he became hypotensive again the next day. He was transfused four units of packed RBC and subjected to exploratory laparotomy in ASA Grade-V on third day of hospitalisation. On exploration, his stomach had about 1500 ml blood. There was a 4.5 x 3 cm smooth, firm, spherical mass over the lesser curvature 7 cm distal to the GE junction which was bleeding from two sites. A wide resection was done and the gastrotomy was closed. He had an uneventful post operated recovery. Cut section of the specimen showed multiple blood filled spaces (Fig.1) Histopathological examination (HPE) of the resected specimen revealed it to be a gastric stromal tumour (benign) spindle cell type. Microscopy showed a well-circumscribed submucosal tumour, consisting of interlacing fascicles and whorls of spindle cells. Cells had scant eosinophilic cytoplasm with blunt ended nuclei and focal palisading (Fig.2). Areas of cystic degeneration and haemorrhage were seen. There was no recurrence during one year follow up.

Discussion

GISTs are mesenchymal tumours arising in the GI tract, usually seen in adults in the sixth decade of life. Recent studies have shown tumour differentiation towards Interstitial cells of Cajal, which link the autonomic innervations of the gut with smooth muscle cells and regulate GI motility [5,6]. They are commonly found in stomach (50-60%) followed by small intestine (20-30%), colorectal (10%) esophagus (5%), omentum, peritoneum and retro-peritoneum (5%) [7, 8]. These lesions are usually solitary. These tumours grow intraluminally or extraluminally. When the growth pattern is extraluminal, patients may be symptom free for a long time and present with very large exogastric masses.

*Senior Advisor (Medicine & Respiratory Medicine), Military Hospital (CTC) Pune-40. ⁺Classified Specialist (Surgery), Military Hospital Jaipur. [#]Classified Specialist (Pathology), Military Hospital Namkum, Ranchi 10. **Senior Advisor (Anaesthesiology), Military Hospital Namkum, Ranchi-10.

Fig. 1 : Cut section of the tumour (4.5x3 cms) showing areas of cystic degeneration and haemorrhage

Upper GI bleeding is the commonest manifestation of gastric stromal tumour observed in 40-65% of patients [2,7]. Bleeding occurs because of an ulcer formation in the gastric mucosa overlying the tumour. Other symptoms may include abdominal pain, anorexia, nausea, vomiting, weight loss, epigastric fullness, and early satiety [2,7]. GIST does not explain fever and splenomegaly seen in our patient. It was attributed to clinical malaria as he became afebrile after a course of chloroquine in two days and spleen regressed. Microcytic hypochromic anaemia can be attributed to chronic blood loss over a period of one week. Upper GI endoscopy is the investigation of choice but diagnosis may be missed due to submucosal and extraluminal growth [9].

Macroscopic features include well circumscribed, submucosal, intramuscular or subserosal mass without a true capsule. Histologically majority of GIST cases have classical uniform appearance. There are three types of GISTs: spindle cell (70%) epithelioid (20%) and mixed type (10%). Spindle cells are short, uniform, blunt ended with eosinophilic cytoplasm arranged in sheets, fascicles, whorls, storiform or palisaded pattern. Epithelioid variants have abundant cytoplasm, round nuclei, cytoplasmic vacuoles and arranged in sheets or nests [4,5]. Surgical resection is offers the only chance of cure. Five years survival rate after resection is 54 % [2]. No standard regimen for adjuvant therapy exists for malignant GISTs. Distant metastases appear late and the common sites for metastasis are liver and peritoneum. Lymph node involvement is rare. A new tyrosine kinase inhibitor, STI-571 has demonstrated substantial response in patients with metastasis or advanced disease [10]. Patient refractory to STI-571 should be considered for traditional palliative treatment, hepatic artery embolisation, radiation therapy, surgical debulking or intra-peritoneal chemotherapy.

Fig. 2 : HE, 200x showing interlacing fascicles of cell with cigar shaped nuclei

Conflicts of Interest

None identified

References

1. Nguyen VU, Taylor A. Gastrointestinal Stromal Tumors - Leiomyoma / Leiomyosarcoma. eMedicine. 2006 Jul 9; (11p). Available from [http:// www.emedicine.com/radio/topic_388, html/section-ct_scan](http://www.emedicine.com/radio/topic_388.html/section-ct_scan).
2. Bapsy PP, Prabhash K, Babu KG, Girish MH. Gastrointestinal Tumour: A paradigm shift in management of solid Tumors. JAPI 2003; 51:801-4.
3. Kindblom LG, Remotti HE, Aldenberg F, Meis – Kindblom JM. Gastro intestinal pacemaker cell tumor (GIPACT): Gastro-intestinal stromal tumors show phenotypic characterisation of the interstitial cells of Cajal. Am J Pathd 1998; 152:1259-69.
4. David A Oven. The Stomach. In: Sternberg SS, Antonioli DA, Carter D, Mills SE, Oberman HA. editors. Diagnostic surgical pathology. 3rd edition. Philadelphia: Lippincott Williams and Wilkins 1999; 1338-9.
5. Herrera GA, Cerezo L, Jones JE, Sack J, Grizzle WE, Pollack J, Lott RL. Gastro intestinal autonomic nerve tumors. Arch Pathol Lab Med 1989; 113:846-53.
6. Lauwers GY, Erlandson RA, Casper ES, Brennan MF, Woodruff JM. Gastrointestinal autonomic nerve tumors. A clinicopathological, immunohistological and ultrastructural study of 12 cases. Am J Surg Pathol 1993; 17:887-97.
7. Fletcher DM, Berman JJ, Corless C. Diagnosis of gastrointestinal stromal tumors: A consensus approach. Hum Pathol 2002; 33:459-65.
8. Emory TS, Sobin LH, Lukes L, Lee DH, O' Leary TJ. Prognosis of gastrointestinal smooth muscle (stromal) tumours: dependence on anatomical site. Am J Surg Pathol 1999; 23 : 82-7.
9. Pallazzo L, Lardi B, Cellier C, Cuillerier E, Roseau G, Barbier JP. Endosonographic features predictive of benign & malignant gastro intestinal stromal cell tumors. Gut 2000; 46:88-92.
10. Dematteo RP, Heinrich MC, El-rifai WM, Demetri G. Clinical management of gastrointestinal stromal tumours: before and after STI-571. Hum Pathol 2002; 33: 466-77.