# Case Report Rare Case Of Small Bowel GIST

Shahaji G. Chavan , Sagar R. Ambre , Vinayak kshirsagar, Ashish Vashistha

**ABSTRACT-**GIST is a rare gastrointestinal mesenchymal tumor accounting for less than 1%. Most common tumor of stomach. Diagnosis and distinction from other sub mucosal tumors is usually done by the means of endoscopic ultrasound and FNAC. We report a rare case of small bowel GIST in 74/M patient, which was successfully resected with a postoperative favorable outcome. Diagnosis of GIST depends on the integrity of histology, immunohistochemistry and molecular analysis.

**KEYWORDS-** C-KIT , Imatinib ,GIST

**INTRODUCTION-**GIST is rare gastrointestinal mesenchymal tumor. GIST is a most common tumor of stomach. GIST is rare accounting 1%-3% of all gastrointestinal tumors.[1] The most common anatomic sites of tumor origin were the stomach (39%) and the small intestine (32%); colorectal tumors accounted for 15% of the total.[1,3]The actual cell of origin of these tumors is pluripotent mesenchymal steam cell, programmed to differentiate into intestinal cells of 'CAJAL'.[1,3] GISTs were previously thought to be smooth muscle neoplasms and most were classified as leiomyomas, leiomyoblastomas, leiomyosarcomas or schwannomas.[3] It was in 1998, after the discovery of gain-of-function mutations in the c-KIT protooncogene that these tumors were reliably distinguished from other histopathological subtypes of mesenchymal tumors.[1,3] GIST occurring in the familial form is autosomal dominant. 5% of GISTs occur in patients with neurofibromatosis type 1 syndrome, occurring mostly in the small intestine and without KIT mutations. GIST also occurs as a part of Carney triad along with paraganglioma and pulmonary chordoma in young females.[9] In 1995 Huizinga and colleagues reported a knockout mice model of KIT failed to express in interstitial cells of Cajal cells. This finding led to the hypothesis that KIT was essential for the development of interstitial cells of Cajal cells. In 1998, Hirota and colleagues published a groundbreaking discovery of KIT mutations in GISTs and 95% GISTs are immunohistochemically positive for the receptor tyrosine kinase KIT (also known as CD117)[9,10] . It is now established that KIT mutations, which cause the constitutive activation of the kinase, are found in 70-80% of GISTs. CD117 becomes a crucial diagnostic marker for GIST, and mutant KIT provides an important therapeutic target clinically in GIST treatment GISTs have unpredictable behavior and long term follow up is essential for all patients, independent of their benign or malignant characteristics.[9,10]

**CASE REPORT-**A 74/male patient presented with slowly growing lump 12/5/13cm over hypogastrium and umbilical region since 9 years. There was history of pain, vomiting present since 10 days 4-5 episodes of vomiting per day. There was no fever, hematamesis, malena, no regional lymphadenopathy. Clinical diagnosis was made as GIST. The lump was excised in GA with midline incision, with mesentery and 25cm of ileum. Distal cut end was 60cm from IC junction. Ileoileal anastomosis was done. The histopathological examination revealed a Neoplasm arising from gastric sub

mucosa composed of fusiform and epitheloid cells. In our case immunohistochemestrey noted that tumor cells were positive for vimentin, CD 34, S-100, SMA, and desmin.

**DISCUSSION-**GIST is a rare gastrointestinal mesenchymal tumor. They differ from other gastrointestinal tumors due to cells of cajal.[6] Up to 30% of GISTs exhibit high-risk (malignant) behavior such as metastasis and infiltration.[4] MAZUR AND CLARKE coined the term in 1983 for a distinct set of mesenchymal tumors of the GI tract having no ultra structural or immunohistochemical features characteristic of smooth muscle differentiation.[2] KINDBLOM AND ASSOCIATES in 1998 demonstrated that the actual cell of origin of these tumors is CELL OF CAJAL the GI tract PACEMAKER CELLS the cells responsible for initiating and coordinating GI motility.[1,3] GIST can occurs anywhere in the GI tract.[1] The underlying condition can be benign or malignant. The most critical development that distinguished GIST as a unique clinical entity was discovery of C-KIT PROTOONCOGENE gain of function mutations in these tumors by HIROTA AND COLLEGUES in 1998. KIT is a 145-kDa glycoprotein. The KIT receptor can be detected by immunohistochemical staining for CD117, which is the epitope on the extra-cellular domain of the KIT receptor. Steel factor (SLF) AKA stem-cell factor is a ligand for KIT. On binding of SLF to KIT, KIT undergoes receptor homo-dimerization, which leads to activation of KIT tyrosine kinase activity, effecting intracellular signal transduction. Membrane receptor tyrosine kinase cellular signaling pathways regulate key cell functions, including proliferation, differentiation and anti-apoptotic signaling. Auto-phosphorylation of c-KIT causes ligand-independent tyrosine kinase activity, leading to an uncontrolled cell proliferation due stimulation of downstream signaling pathways. An unregulated activation can lead to various forms of cancer/benign proliferative conditions. SLF-KIT interaction is essential for development of melanocytes, erythrocytes, germ cells, mast cells and ICCs. Hence, mutations involving c-KIT produce cellular defects in hematopoiesis, melanogenesis, gametogenesis and in the interstitial cells of Cajal. Mutations of different exons of the c-KIT gene (exon 11, exons 9 and exon 13) cause constitutive activation of the tyrosine kinase function of c-KIT. Excision is the treatment of choice is a GOLD STANDERD and histopathological examination is extremely crucial.[9,10] A successful outcome requires a multidisciplinary approach, postoperative targeted Molecular therapy in intermediate and high risk patients. The drug of choice is Imatinib 400mg/day for 12 months.[9]

**Conclusion-** GIST can occurs anywhere in GI tract though GIST can be a malignant lesion, it should not be neglected. long term follow up with Clinical examination with abdominopelvic CECT scan every 3-6 month is the recommended surveillance protocol. In case of GIST A successful outcome requires a multidisciplinary approach, postoperative targeted molecular therapy in intermediate and high risk patients.

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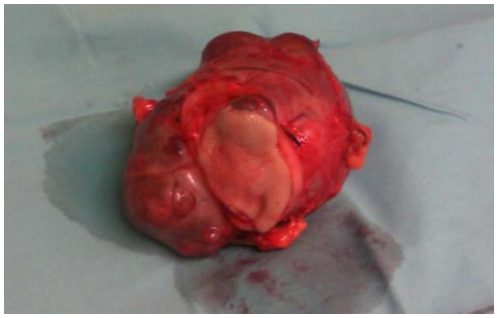
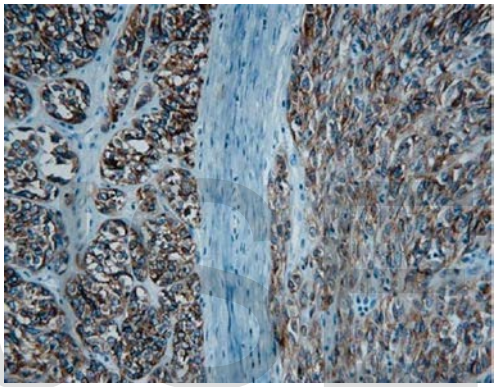
## IMAGES-

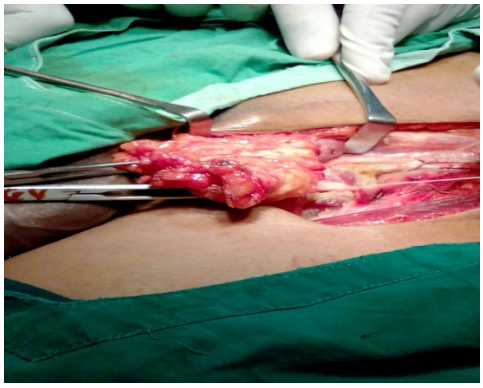


**RESECTED LUMP FROM ABDOMEN**





**Gastric sub mucosa composed of fusiform and epitheloid cells. H& E-100**



**Ileoileal anastomosis was done.**