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A CASE REPORT ON STOMACH GASTROINTESTINAL STROMAL TUMOR (GIST)

General Surgery

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ABSTRACT

GIST is one of the most common malignant mesenchymal tumor of stomach. Progression of this disease depends on location, tumor size, mitotic activity & early diagnosis .Diagnosis of GIST always requires histological and immunohistochemical confirmation as no imaging modalities can diagnose it conclusively. Endoscopic forceps biopsy results are frequently negative. Stomach GIST having good prognosis amongst all with rare lymphatic metastasis. A 45 year old female patient with abdominal fullness & early satiety found to be having palpable lump in hypogastrium Surgically resected (Total Gastrectomy) & diagnosed with histologically proven Spindle Cell Type High Grade GIST. Imatinib was given as an adjuvant therapy for high grade tumor.

KEYWORDS

GIST gastrointestinal stromal tumor,Histology,Surgery and Chemotherapy

INTRODUCTION

GIST is most common variety of visceral soft tissue sarcoma [1]. It arises from interstitial cells of cajal, a GI PACEMAKER within myentric plexus. It can appear anywhere in GI tract from esophagus to anal canal [1][2][3]

Most common sites:Stomach (40-60%), Small intestine(20-40%), Colon/Rectum(5-15%)[1][4][5] and Esophagus(<1%). Remaining 5% of lesions occur in less common locations, including the mesentry, pelvis, pancrease, liver, omentum, and genitourinary tract.[12]

Gastric GIST can manifests at any age although most typically in patients above 50 years.[1][2]

Gastric GIST majority are sporadic in origin. Only 5% are associated with underlying herritable mutation;[1]

c-KIT receptor is a protoonchogene belongs to PDGFR suprafamily. C-KIT ligand is a stem cell factor. Ultimately its binding causes cellular proliferation. 70% of GIST have KIT gene mutation, 7% have PDGFRA mutation, 15% have Wild type KIT & PDGFRA mutation.[1][2][4]

Symptoms depends on tumor size. Small size remains asymptomatic and some presents with non specific symptoms early satiety,bloating, vague abdominal Pain, malena or hematemesis.[1]

The mainstay of treatment is complete surgical resection.[1][2][12]

GISTs differentiated from other soft tissue sarcoma on the basis of CD117 , CD34 , DOG 1 expression & lack of smooth muscle staining (actin & Desmin)[1,2,3]

Lymphatic metastasis are rare and it can spread to liver or peritoneum by hematogenous route.[2][3]

IMATINIB – an oral tyrosine kinase inhibitor of c-KIT, being used as adjuvant or neoadjuvant therapy or in palliative setting.[1][6][7]

Case Report

A 45 year old female patient having complaints of abdominal fullness, pain over left upper quaderant after meal and early satiety for last 6 months , malena and fatigue from last 3 months. On examination pale palpebral sclera with a firm palpable lump approx. 10*8 cm with smooth surface over left hypochondrium extending to epigastrium and umbilical region;moving with respiration.

Investigation:

All blood investigations including tumor marker CEA &CA 19-9 were within normal range and Hb deceased upto 9.3 gm/dl from last 3 months initially it was 12.6 gm/dl.

USG suggestive of 12*11*13 cm sized heterogenous lesion with internal cystic areas with significant vascularity extending from epigastric to hypogastric region.

CECT suggestive of 128*146*170 mm sized well defined lobulated marginated mildly heterogenous enhancing soft tissue density lesion along greater curvature of stomavh arising from left lateral wall of stomach with inta and extra luminal components with air foci and contrast leakind into lumen. Lesion having internal hemorrhagic areas supplied by left gastric artery. Rest of organs are normal including chest & pelvis.

FNAC from percutaneously palpable lump in left hypochongrium suggestive of Spindle Cell Lesion

ENDOSCOPY suggestive of Large growth including fundus, upper part of body alond greater curvature extending proximally till GE junction.

ENDOSCOPY GUIDED BIOPSY suggestive of changes of chronic gastritis.

Operative Intervention :

Elective exploratory laparotomy done & TOTAL GASTRECTOMY + ROUX EN Y SUTURED ESOPHAGOJEJUNOSTOMY + SUTURED JEJUNOJEJUNOSTOMY + FEEDING JEJUNOSTOMY done with resection of 12*10*8 cm sized exophytic growth having lobulated appearance with 8*7*5 cm intraluminal growth arising from left lateral wall of stomach involving fundus, upper part of body extending to GE junction & sent for HPE.

On post op day 2, according ERAS(ENHANCED RECOVERY AFTER SURGERY) PROTOCOL feeding started through feeding jejunostomy and oral feeding started (initially clear liquids then progress to liquid diet and soft diet) on post op day 4 with early mobilization.

Without any post operative complication Patient was discharged on

POD 20 with feeding jejunostomy for 1 month with Small frequent meals orally with proton pump inhibitors.

IMATINIB was given to the patient for 1 year and follow up every 6 months without any recurrence for 2 years.

BIOPSY: pT4N0M0 : SPINDLE CELL TYPE GIST ; HIGH GRADE(G2) WITH MITOTIC RATE >5/50 HPF (high power field) without any lymph node involvement.

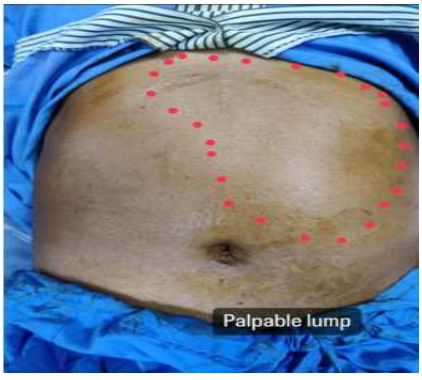


Fig 1: Abdominal mass in left hypochondrium

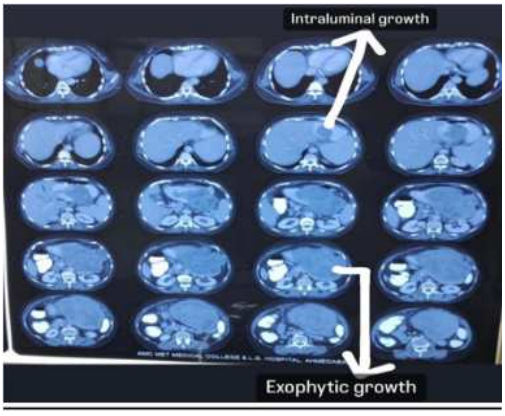
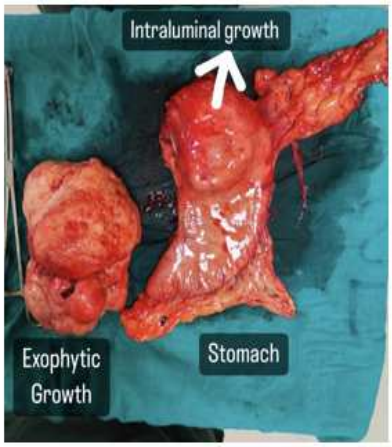


Fig 2 : CECT showing exophytic and intraluminal growth



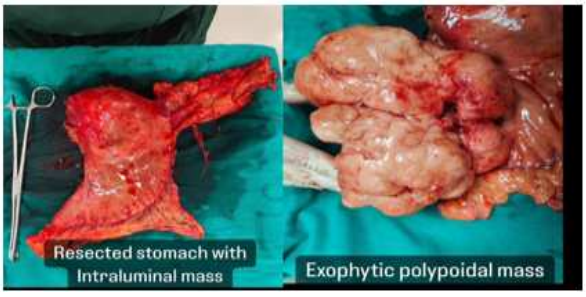


Fig 3 & 4: Resected Exophytic mass with Resected stomach

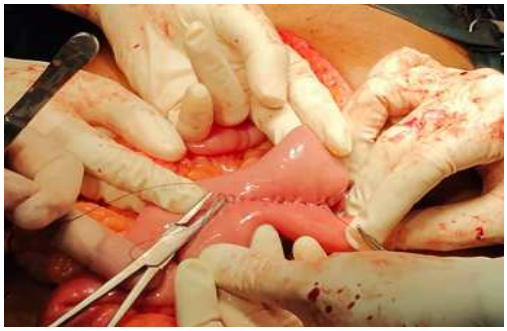


Fig 5 : Manual suture jejuno-jejunal anastomosis

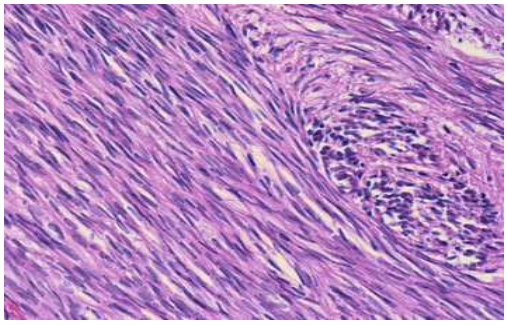


Fig 6 : Histology of Spindle cell type of stomach GIST

DISCUSSION

GISTs are potentially malignant and most common mesenchymal tumor of stomach[1]

Gastric GIST manifests equally in male & female [1,9,10] For localized tumors, wedge resection of the stomach is considered to be adequate treatment since GISTs tend to be exophytic without submucosal spread and rarely invade adjacent organs[12] and do not involve regional lymph nodes[5, 11]. For unresectable and/or metastatic disease, treatment with imatinib is the first choice.

Depending on size & location of Gastric GIST, Surgical resection include wide local excision, enucleation , sleeve gastectomy or total gastrectomy with lymphatic metastasis are rare[1] and can spread to liver & peritoneum[6][7][8]. Laparoscopic resection of GISTs can be done for tumor less than 2cm in diameter.[12].

- Types of Gastric GIST based on histology :[3]1) Epitheloid cell stromal GIST – mc type 2) Spindle cell type – 2nd mc type 3) Mixed type
- Types of Gastric GISTs based on location in the stomach : 1) Type 1 : located in the fundus or greater curvature 2) Type 2 : in the antrum \ prepyloric region 3) Type 3 : in the lesser curvature near gastroesophageal junction. [12]

Complete surgical resection for large tumor like greater than 10 cm: Total gastrectomy along with ESOPHAGOJEJUNOSTOMY. A mechanical EEA stapler or conventional manual suturing can be used.

IMATINIB being the successful oral chemotherapy for patients with high grade tumor (>10 cm diameter , intraperitoneal tumor rupture or upto four peritoneal implants) as an adjuvant therapy for 1year.[1][6][7][8] [9][10][12]

IMANITIB can also be used as a neoadjuvant therapy preoperatively ranges from 4 to 12 months and response is monitored with serial imaging studies.Post surgery , imatinib continued for 1 to 2 years.[12]

For unresectable and/or metastatic disease, treatment with imatinib is the first choice. [5,11]

SUNITINIB and REGORAFENIB are second line chemotherapeutic agent.

Radiotherapy is still controversial for treatment of GIST. Gastric GISTs is the common one having best prognosis amongst all GISTs[3].Two primary prognostic factors for gastric GISTs are tumor

size and mitotic rate[1,3]

REFERENCES

1. Sabiston Textbook of Surgery,21st edition
2. Bailey & Love's Short Practice of Surgery,28th edition
3. Schwartz's Principle of Surgery, 11th edition
4. Nishida T, Blay JY, Hirota S, Kang YK. The standard diagnosis,treatment, and follow-up of gastrointestinal stromal tumors based on guidelines. Gastric Cancer. 2016 Jan;19(1):3-14. [PMC free article] [PubMed]
5. Demetri GD, Benjamin RS, Blanke CD, Blay JY, Casali P, Cahoi H, Corless CL, Debiec-Rychter M, DeMatteo RP, Ettinger DS, et al. NCCN Task Force report: management of patients with gastrointestinal stromal tumor (GIST)--update of the NCCN clinical practice guidelines. J Natl Compr Canc Netw. 2007;**5 Suppl 2**:S1–S29; quiz S30. [PubMed] [Google Scholar]
6. Miettinen M, Majidi M, Lasota J. Pathology and diagnostic criteria of gastrointestinal stromal tumors (GISTs): a review. Eur J Cancer. 2002;**38 Suppl 5**:S39–S51. [PubMed] [Google Scholar]
7. Rossi CR, Mocellin S, Mencarelli R, Foletto M, Pilati P, Nitti D, Lise M. Gastrointestinal stromal tumors: from a surgical to a molecular approach. Int J Cancer. 2003;**107**:171–176. [PubMed] [GoogleScholar]
8. DeMatteo RP, Lewis JJ, Leung D, Mudan SS, Woodruff JM, Brennan MF. Two hundred gastrointestinal stromal tumors: recurrence patterns and prognostic factors for survival. Ann Surg. 2000;**231**:51–58. [PMC free article] [PubMed] [Google Scholar]
9. Miettinen M, Sarlomo-Rikala M, Lasota J. Gastrointestinal stromal tumours. Ann Chir Gynaecol. 1998;**87**:278–281. [PubMed] [Google Scholar]
10. Ludwig DJ, Traverso LW. Gut stromal tumors and their clinical behavior. Am J Surg. 1997;**173**:390–394. [PubMed] [Google Scholar]
11. Blay JY, Bonvalot S, Casali P, Choi H, Debiec-Richter M, Dei Tos AP, Emile JF, Gronchi A, Hogendoorn PC, Joensuu H, et al. Consensus meeting for the management of gastrointestinal stromal tumors. Report of the GIST Consensus Conference of 20-21 March 2004, under the auspices of ESMO. Ann Oncol. 2005;**16**:566–578. [PubMed] [Google Scholar]
12. Shackelfoed's surgery of the Alimentary tract EIGHTH EDITION