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RESEARCH ARTICLE

PATHOLOGY

INSIDE MYSTERY OF A TUMOR IN THE STOMACH OF A YOUNG FEMALE

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ABSTRACT

Gastrointestinal Stromal Tumours are the commonest mesenchymal tumors of the gastrointestinal tract, the stomach and small intestine being the favored sites. They rarely occur in the colon and rectum and esophagus. The diagnosis is difficult, especially when there are no pathognomic features to suggest GIST on preoperative clinical examination and investigations, and only a detailed histopathological analysis of the specimen reveals their true nature.

Here, we report a case of a young female patient who presented with vague abdominal pain which was diagnosed histopathologically as GIST of the stomach..

KEY WORDS

GIST , stomach , CD117

INTRODUCTION

Gastrointestinal stromal tumors (GIST) are the most common mesenchymal tumors of the GI tract although they comprise fewer than 1% of all gastrointestinal (GI) tumors[1]The diagnosis of the GISTs is largely histopathological, but may be considered when faced with a large mass without lymphadenopathy at CT scan, or, at laparotomy. Trans-abdominal needle biopsy is not recommended for making a diagnosis in potentially resectable cases because of the risk of tumour seeding. Complete gross excision of the tumor is the treatment of choice[2]

CASE REPORT

A 30 year old female attended the surgery OPD with symptoms of vague pain in the upper abdomen since 3 months.Her pain had no relation to food and was not associated with vomiting, melena or weight loss.On per abdominal examination a 10 x 10 cm mass was felt in the epigastric region moving freely and with respiration, firm in consistency and with all borders defined. Clinical diagnosis suspicious of carcinoma stomach was offered.Ultrasound of the abdomen showed evidence of mixed echogenic lesion slightly to the left of midline and epigastrium of size 7.6 x 7.0 cm.

An endoscopic biopsy of an ulcer in the greater curvature done elsewhere was reported as moderate dysplasia.(Figure 1)

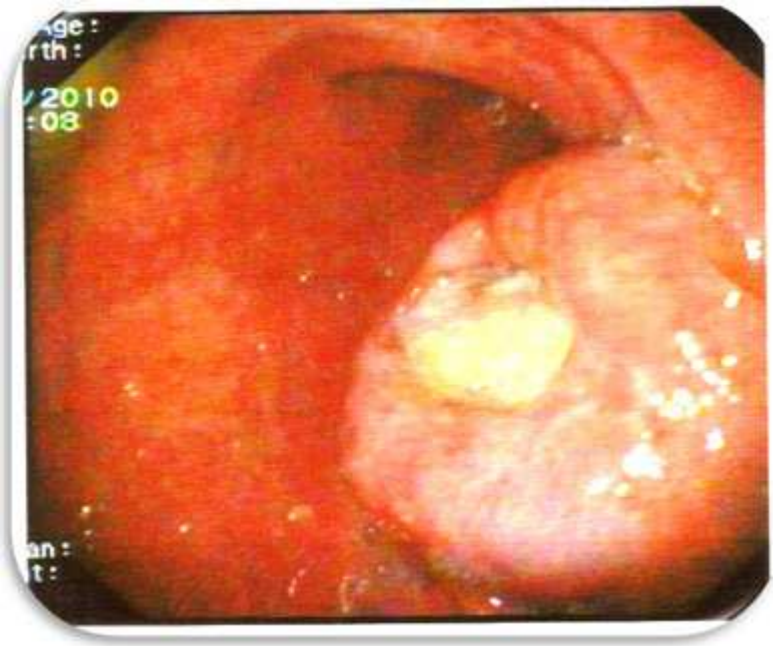

Figure 1
Endoscopic view of the lesion

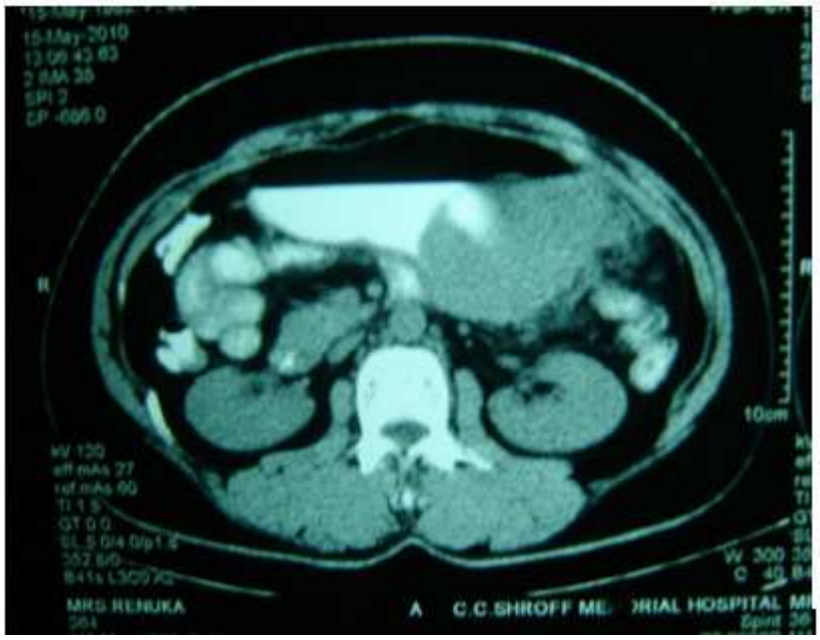

Figure 2
CT scan abdomen showing soft tissue density lesion in the body of the stomach.

A subsequent CT- scan abdomen done in our hospital revealed a large, irregular soft tissue density lesion in the body of stomach posteriorly measuring 6.5x6.0x5.0 cm in size causing filling defect in stomach suggestive of ? Leiomyoma ? Gastro intestinal stromal tumor ? Carcinoma stomach.(Figure 2)

Patient was posted for laparotomy and surgical resection of the tumor was carried out.

Grossly, we received a total gastrectomy specimen with a portion of the intestine.Gastrectomy specimen measured 14x 8x5 cms and resected segment of intestine measured 9 cms in length.A nodular growth was noted involving serosal surface of the stomach and intestine measuring 10x6x5cms. Cut section of the specimen had a whorled silk appearance and an ulcer was seen measuring 4 cms in diameter in the greater curvature of the stomach.

On microscopy sections from the growth showed cellular tumor made up of spindle cells and epithelioid cells with orderly pattern of intersecting fascicles with blunt ended nuclei and cytoplasmic vacuoles. .>5 mitosis /50 hpf were counted. Occasional areas showed nuclear palisading, multinucleated giant cells.(Figures 3 and 4).Sections from ulcerated areas showed mucosa with mild to moderate dysplasia.Based on the histopathological findings and considering the size a diagnosis of high risk gastrointestinal stromal tumor was offered.Sections from resected portion of the intestine showed epithelioid variant of GIST.Resected margins were free from tumor. Immunohistochemistry done for c-kit (CD 117) was positive.Patient is asymptomatic without any evidence of tumor recurrence after one year of postoperative follow up.

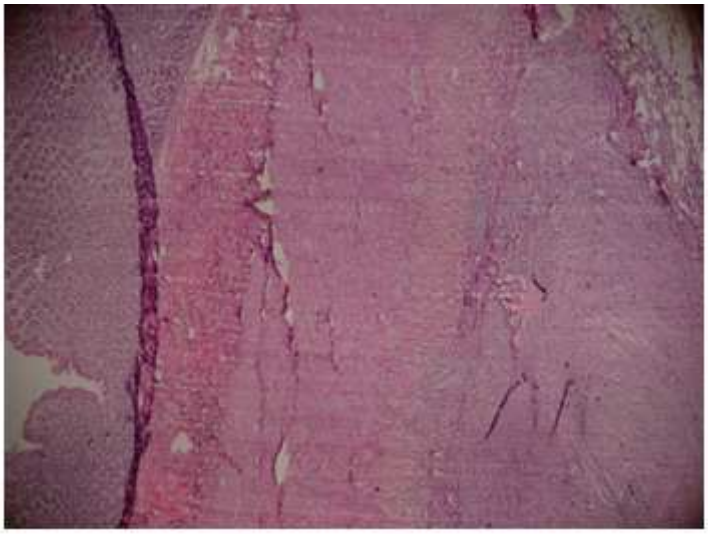

Figure 3
Cellular tumor seen in the submucosa (HandE x400)

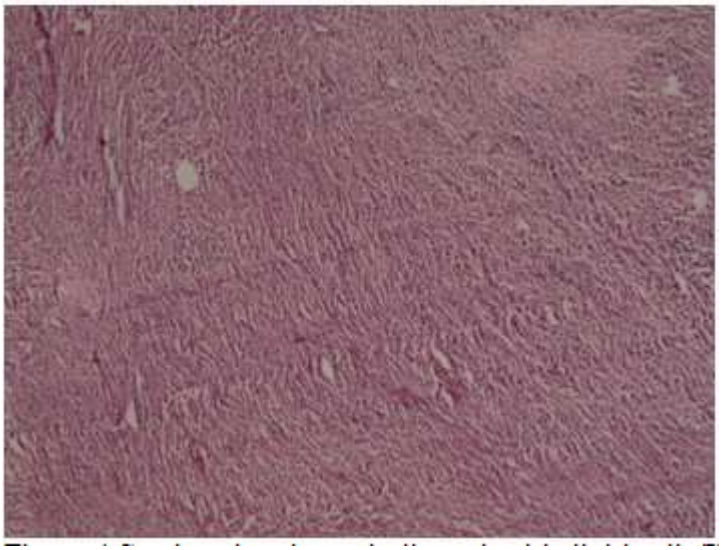

Figure 4
Section showing spindle and epithelioid cells(Hand EX400)

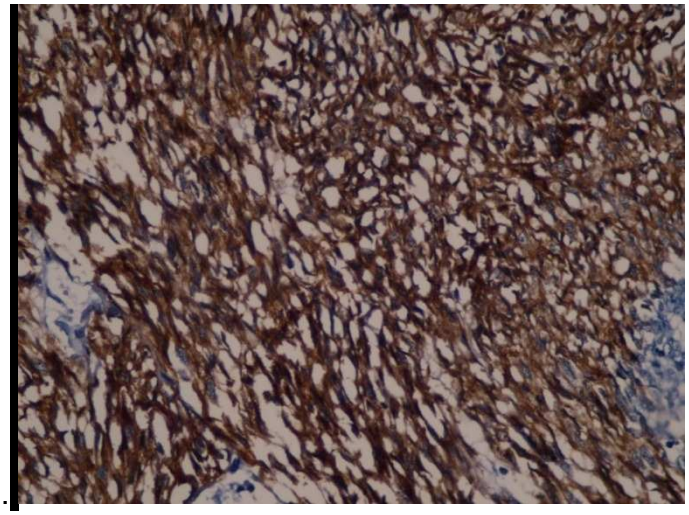

Figure 5
Immunohistochemistry showing positivity for CD-117(x400)

DISCUSSION

GIST are the the most common mesenchymal tumors, however they only account for 1–3% of all gastrointestinal tumors. The average patient with GIST is 40–70 years old, this patient was 30 years old.GISTs are found commonly in the stomach (60 - 70%) and small intestine (20 - 30%), and rarely in the colon and rectum (5 - 10%) and esophagus (less than 5%). [2]The clinical presentation is often vague. It depends on the size and site of the tumor[3] . Abdominal pain or distention is the most common presentation of GISTs.Gastrointestinal bleeding or unexplained anemia is the next most common presentation.The diagnosis of the GISTs is largely histopathological, but may be considered when faced with a large mass without lymphadenopathy at CT scan, or, at laparotomy. Trans-abdominal needle biopsy is not recommended for making a diagnosis in potentially resectable cases because of the risk of tumour seeding.[2]

GISTs have a tendency to exophytic growth. They commonly involve the muscularis propria and, in 50% of cases, may show mucosal ulceration.On light microscopy, GIST can simulate leiomyosarcoma, and hence in the past, it was labeled as such. However, the two tumors have different origins; GISTs are thought to originate from a stem cell that normally expresses CD117. The histologic classification is based on the predominant cell type, either spindle or epithelioid cell .Gastric GISTs in the greater curvature have a low malignant potential despite reaching a large size[4]. The most commonly used marker for GIST is the CD117 antigen, a marker expressed by ICC. Approximately 95% of GISTs are positive for the CD117 antigen, an epitope of the KIT receptor tyrosine kinase[5]

The correct identification of GIST is very important because of the availability of specific, molecular-targeted therapy with KIT/PDGFRA tyrosine kinase inhibitors (TKI) such as imatinib mesylate or, in the case of imatinib-resistant GIST, sunitinib malate. Imatinib as such is recommended in metastatic, residual, or recurrent cases of GISTs or which are surgically not removable [1,3.]Despite apparently complete resection with clear margins, the recurrence rate is high; hepatic or mesenteric recurrence occurs in 40–90% of patients undergoing apparently curative surgery .Hence the need for correct diagnosis and prompt intervention.

Summary
GISTs are common mesenchymal tumors of the digestive tract with a very low incidence. In cases of GIST, surgery should be considered as primary treatment. Better understanding of the cell of origin and immunohistochemical markers has made timely targeted therapy possible in GIST. Their treatment has been revolutionized with the advent of targeted molecular therapy, namely, imatinib mesylate. The therapy of advanced GIST with imatinib mesylate has been markedly successful whether by cytostatic, cytotoxic, or both mechanisms.Patients with tumors larger than 10cms are benefited more from imatinib than those with smaller tumors.

Acknowledgment
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