CASE REPORT
Volume - 9 | Issue - 7 | July - 2020 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

A CASE OF GASTROINTESTINAL STROMAL TUMOUR IN ELDERLY

Gastroenterology

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ABSTRACT

Gastrointestinal stromal tumours (GIST) are the most common mesenchymal tumours of the gastrointestinal (GI) tract. A 62 year old male presented with upper abdomen pain since 1 month. He was suffering from pain which was insidious, dull aching, continuous and radiating to the back increased with food intake and relieved with fasting and medication. Final diagnosis was Metastatic GIST. As the tumor was advanced, patient was started on imatinib mesylate and was asked to follow up. More attention should be paid to the diagnosis of metastatic GIST.

KEYWORDS

Gastrointestinal stromal tumours (GIST)

INTRODUCTION:

Gastrointestinal stromal tumours (GIST) are the most common mesenchymal tumours of the gastrointestinal (GI) tract. The most common site of origin is the stomach, however, these tumours can arise anywhere along the GI tract . The clinical behaviour of GIST is highly variable, ranging from slow-growing indolent tumours to aggressive malignancies with early dissemination. Features that appear to be most predictive of outcome are tumour size, primary site and the mitotic rate' .

Gain-of-function mutations of c-KIT and PDGFRa were found to play a role in the pathogenesis of the disease. The emergence of tyrosine kinase inhibitors (TKIs), such as imatinib mesylate, has radically altered the outcome of metastatic GIST patients, with an 80% response rate and a median survival time which has increased to 5 years . Since then, GIST became the quintessential model for targeted therapy. Nonetheless, resistance to imatinib as a result of secondary gene mutations developed approximately 18 to 24 months after systemic therapy, and has become a significant clinical problem .

Case presentation:

A 62 year old male presented with upper abdomen pain since 1 month. He was suffering from pain which was insidious, dull aching, continuous and radiating to the back increased with food intake and relieved with fasting and medication. Pain was associated with early satiety, loss of appetite and weight loss 4 Kg. No symptoms of vomiting, regurgitation, fever and jaundice. Patient is chronic smoker and had chronic alcohol use disorder. On examination the patient was thinly built, pallor, vitals stable, R/S : Emphysematous chest, CNS : Right UMN 7th nerve palsy, CVS:S1 S2 Normal, P/A : Liver palpable 6 cms below left costal margin firm in consistency, rounded edges and smooth surface and moves well with respiration.

Since patient was elderly dyspeptic with weight loss, routine laboratory test and Upper GI endoscopy was performed. According to the laboratory findings: Sr Elec normal, Sr amylase and lipase normal, Viral markers negative.

Table 1:

S. No.	Tests	Values
1	Hb	13.2
2	TLC	12300
3	PLT	4.71
4	MCV	88.5
5	Sr Creat	0.6
6	BUN	10
7	SGOT/SGPT	29/14
8	T Bili	0.44
9	Di bili	0.08
10	Albumin/ globulin	3.9/3.4

Fig 1: Endoscopic findings:

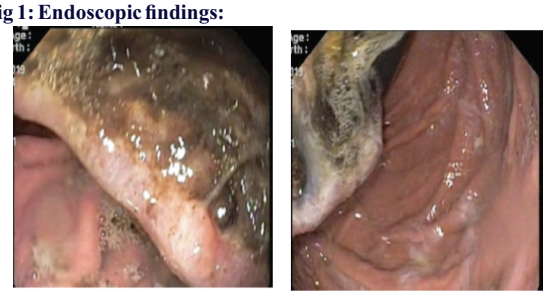
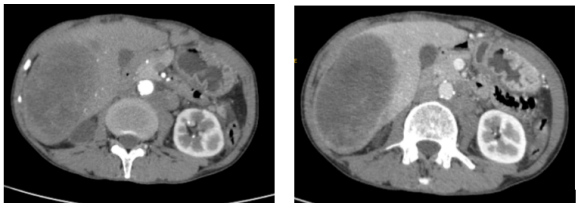
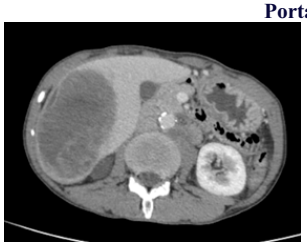


Fig 2: CECT Abdomen



Arterial phase **Portal phase**



Venous phase

Fig 3: Histopathology

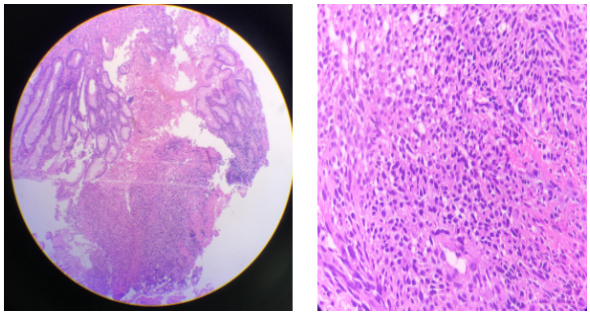
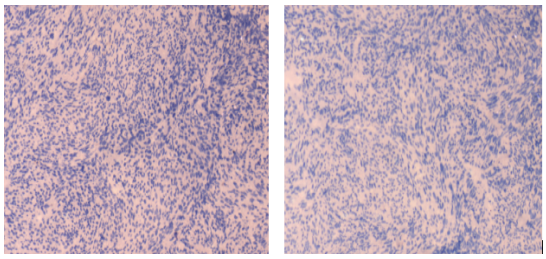
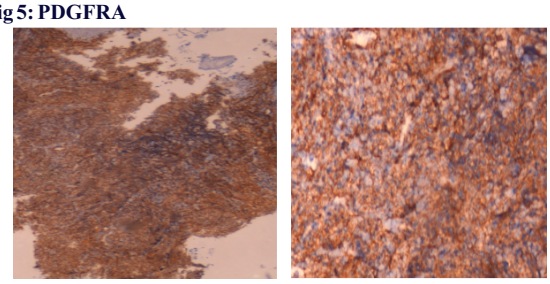


Fig 4:



Cd117 **DOG1**

Fig 5: PDGFRA



Final diagnosis was Metastatic GIST, GISTs comprise 1% to 3% of all malignant GI tumors. GISTs characteristically (>95%) exhibit expression of CD117. True leiomyosarcomas fail to express CD117. Shwannomas express S100 , Most GISTs stain for KIT (95%) and anoctamin-1 (DOG-1; 98%). The definitive diagnostic criteria of uncommon CD117negative GISTs are currently somewhat obscure. Rare subset of GISTs (<5% of cases overall) that have no CD117 expression; these are most likely dependent on an alternative kinase, such as mutated PDGFRA. As seen in the above case this is one of the rare presentation with PDGFRA. As the tumor was advanced, patient was started on imatinib mesylate and was asked to follow up, and Imatinib is effective in PDGFR positive GISTs.

DISCUSSION :

GISTs are rare, potentially aggressive forms of cancer that may develop anywhere in the GI tract[6]. Most studies report incidences between 10 and 15 cases of GISTs per million. Estimates suggest that the prevalence is over 10 times the incidence [7]. The introduction of TKI is revolutionary in the treatment of metastatic GIST, representing a real major paradigm shift in cancer therapy, since it targets the specific molecular abnormalities, crucial in the etiology of tumor[8,9]. Patients with primary unresectable liver deposits are clearly candidates for TKI treatment and may benefit from a neoadjuvant setting[8,9].

Hirota et al. and subsequently Heinrich et al. proved that most of the GISTs are caused by c-KIT somatic gain-of-function mutations followed by similar mutations in platelet-derived growth factor receptor-alpha (PDGFRA) [10,11]. The initiation of KIT-selective tyrosine kinase inhibitor therapy such as imatinib and its successors improved the survival of these patients [12,13]. Endoscopy and CECT can be used for staging in the diagnosis and metastases scanning of GIST. We used imatinib for treatment after diagnosis. Imatinib mesylate (Kit-selective tyrosine kinase inhibitor) can be used in the treatment of advanced, recurrent, unresectable or metastatic GIST. Imatinib mesylate has also proven efficacy in bone metastases of GIST [14,15]. Subjective evaluations, including changes in tumor nodules, density, and vascularization, as well as changes in tumor size, are optimal in evaluating therapeutic responses by CT [16].

In case of disease relapse under IM-therapy, the major problem is the tumor's resistance caused by development of secondary mutations in exons 13 through 17 of the KIT gene or, less frequently, the PDGFR-a gene[4,5]. An increase of the imatinib mesylate dose to 600 mg per day or a maximal dose of 800 mg per day is useful but its effectiveness only lasts for a short time. A change to another targeting agent, such as sunitinib, nilotinib or sorafenib, could improve the outcome and stabilize the disease[17].

But TKI-treatment for patients with recurrent or metastatic GIST seems be critical for achieving long-term survival[10]. Therefore, measures to prevent acquired resistance are vitally important, since the combination of TKI-therapy with surgery really seems to prolong survival[18,19].

CONCLUSION:

More attention should be paid to the diagnosis of metastatic GIST, in clinical practice. TKI therapy alone could improve overall survival, further studies are necessary to explore the mechanism of metastasis.
Declaration of patient consent:

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity.

Financial support and sponsorship:
Nil

Conflicts of interest:
There are no conflicts of interest.

Acknowledgement:
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