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A RARE CASE OF RECTAL GASTROINTESTINAL STROMAL TUMOR (GIST) WITH CONCURRENT HEPATIC METASTASIS

Radiology

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ABSTRACT

Background: Gastrointestinal Stromal Tumors (GISTs) are uncommon mesenchymal tumors of the gastrointestinal tract. Rectal GISTs are even rarer, and their co-occurrence with hepatic metastasis is a clinical challenge. **Case Presentation:** We present a case of a 60-year-old male who was diagnosed with a rectal GIST, along with concurrent hepatic metastasis. The patient's MRI revealed a large exophytic rectal mass extending into the anal canal, involving adjacent structures. Additionally, multiple liver lesions were noted on triphasic contrast enhanced CT scan. **Discussion:** The co-occurrence of rectal GIST and hepatic metastasis is uncommon and poses clinical management challenges. This case underscores the importance of early diagnosis and comprehensive imaging in patients presenting with rectal masses. **Conclusion:** Rectal GISTs with hepatic metastasis are a rare clinical entity, necessitating a coordinated approach among healthcare professionals. This case report emphasizes the significance of timely diagnosis and the utilization of advanced imaging modalities in the evaluation and management of such cases

KEYWORDS

GIST, MRI, rectal GIST, hepatic metastases, mesenchymal tumors.

INTRODUCTION:

Gastrointestinal Stromal Tumors (GISTs) are mesenchymal tumors that arise from the interstitial cells of Cajal in the gastrointestinal tract. They are the most common mesenchymal tumors of the gastrointestinal system, typically found in the stomach (60-70%) and small intestine (20-30%). GISTs originating in the rectum are relatively rare, constituting only about 5% of all GIST cases. While GISTs are known for their potential to metastasize, hepatic metastasis in the context of rectal GISTs is even rarer. The prognosis and management of such cases remain a challenge for clinicians.

Case Presentation:

We present the case of a 60-year-old male with medical history of chronic abdominal discomfort, altered bowel habits, and unintentional weight loss over a period of six months. He had no prior history of gastrointestinal malignancy. Upon digital rectal examination was normal with no intraluminal mass lesion.

MRI of the abdomen and pelvis revealed a large, well-defined exophytic encapsulated lobulated soft tissue lesion. The lesion was situated in the right perirectal region, extending along the mid and lower rectum and involving the meso-rectal fat. The tumor was found to arise from the inner layers of the rectal wall. This lesion extended inferiorly into the anal canal, involving the proximal external sphincter and the left levator ani muscle, and was located approximately 51 mm above the anal verge.

Additionally, the MRI revealed thickening and T2 and STIR hyperintensity of the overlying mucosal wall, affecting the same for a short distance. There was no evidence of luminal obstruction. Notably, there were T1 hyperintense internal hemorrhagic areas within the tumor, alongside T2 hyperintense cystic regions.

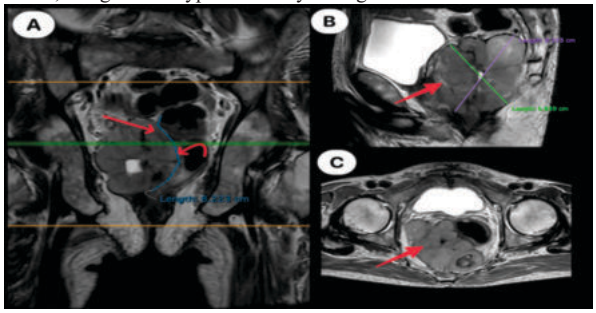

Figure 1 *reveals coronal (A), saggital (B) and axial (C) planes of T2 weighted MRI images showing a well-defined lobulated lesion with external capsule (red arrow). The curved arrow shows the margin of rectal wall involved.*

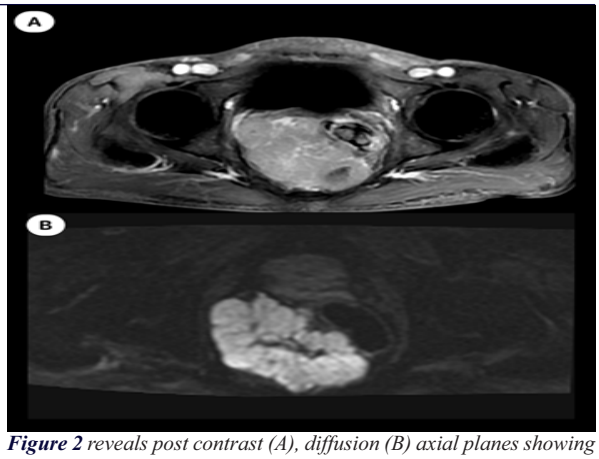

Figure 2 *reveals post contrast (A), diffusion (B) axial planes showing heterogenous contrast enhancement with definite extensive diffusion restriction in the lesion.*

Intriguingly, the patient's triphasic CT scan revealed multiple peripherally enhancing lesions within both lobes of the liver, some of which had conglomerated to form larger lesions with internal necrosis. Furthermore, one of the larger hepatic lesions in segment VII and VIII demonstrated internal air, indicating air-fluid level formation for which pigtail was noted insitu.

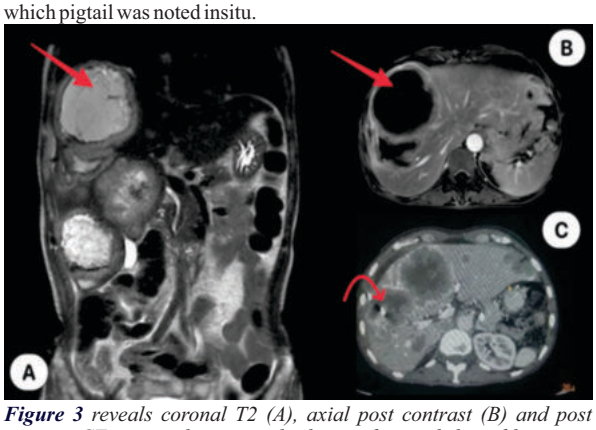

Figure 3 *reveals coronal T2 (A), axial post contrast (B) and post contrast CT images showing multiple round to oval shaped lesions in both lobes of liver, with internal cystic areas within suggestive of metastases. In image C, there is a hyperechoic foci (curved arrow) representing the pigtail in situ.*

Review Of Literature:

Gastrointestinal Stromal Tumors (GISTs) are a rare subset of mesenchymal tumors that originate from the interstitial cells of Cajal, with the majority occurring in the stomach and small intestine [1]. Rectal GISTs, while rare, account for about 5% of GIST cases [2]. An even more infrequent presentation is the simultaneous occurrence of hepatic metastasis with rectal GISTs, presenting a unique clinical challenge for healthcare providers.

Rectal GISTs with hepatic metastasis are documented in case reports and series, demonstrating a spectrum of clinical manifestations [3]. These patients typically present with non-specific gastrointestinal symptoms, such as abdominal pain, altered bowel habits, and sometimes rectal bleeding [4]. Imaging studies, particularly MRI, play a critical role in characterizing the extent of the rectal mass and hepatic metastasis [5].

In agreement with the presented case, imaging studies consistently reveal the characteristic features of rectal GISTs. These tumors often appear as well-defined, exophytic masses within the rectal wall [6]. MRI is the imaging modality of choice, offering superior soft tissue contrast and enabling the assessment of tumor size, extent, and involvement of adjacent structures [7]. It is not uncommon for these tumors to extend into the anal canal, rectal sphincters, or neighboring pelvic structures [8].

When hepatic metastasis is present, radiological findings typically resemble those of hepatic metastases from other primary malignancies. Multiple hepatic lesions with various sizes, enhancement patterns, and necrosis are frequently observed [9]. The presence of air within hepatic lesions, as indicated in our case, is an unusual but noteworthy finding, demanding further investigation and, in some instances, interventional procedures [10].

Surgical resection of the primary rectal tumor is commonly indicated, either through local excision or radical resection, depending on the extent of invasion [11]. Imatinib, a tyrosine kinase inhibitor, has transformed the treatment of GISTs and is often used as neoadjuvant or adjuvant therapy [12]. In cases of unresectable or metastatic disease, targeted therapy with Imatinib plays a central role in treatment [13].

The prognosis of patients with rectal GISTs and hepatic metastasis varies based on factors such as the size and extent of the primary tumor, the number and size of hepatic lesions, the effectiveness of systemic therapy, and the individual patient's response to treatment [14].

DISCUSSION:

The presented case highlights the complex clinical presentation of a 60-year-old male with a rare rectal GIST and concurrent hepatic metastasis. The patient's symptoms of abdominal discomfort, altered bowel habits, and weight loss are consistent with gastrointestinal malignancies. The physical examination, most importantly, no bowel obstruction and the distinct characteristics of the lesion observed on MRI, were indicative of a rectal GIST along with concurrent hepatic metastasis with unique features, including areas of necrosis, diffusion restriction, peripheral enhancement, and internal air, necessitating drainage.

CONCLUSION:

This case underscores the rare occurrence of rectal GIST with concurrent hepatic metastasis, highlighting the significance of early diagnosis, comprehensive clinical assessment, and advanced imaging modalities. A multidisciplinary approach is crucial to determine the most appropriate treatment strategy.

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