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Trans-Anal Excision Of A Rectal Gastrointestinal Stromal Tumor (Gist)

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Abstract

Introduction: Gastrointestinal stromal tumor (GIST) have malignant tendency originating from the mesenchymal tissue and their most common site of occurrence is stomach. Rectal GISTs are rare, consequently less data is available on their management. Here we report a case of successful trans-anal excision of a rectal GIST after neoadjuvant Imatinib (tyrosine kinase inhibitor) therapy.

Case Presentation: A 33-year-old gentleman was referred to us from our Oncology department as a diagnosed case of rectal GIST (MRI, sigmoidoscopy and IHC staining), on Imatinib therapy for 2 months. His symptoms (painful defecation) got partially resolved to recur 2 months later. PET–CT confirmed the presence of a rectal tumour with low metabolic activity and excluded the presence of metastatic disease, however size of the tumour decreased marginally as compared to previous MRI. Sigmoidoscopy revealed 5cm size friable nodular growth arising from anterior rectal wall extending from 2 to 8 cm from anal verge, attached with a small broad pedicle.

Treatment: Intraoperative anoscopy confirmed the presence of 5x5 cm tumour arising from the anterior rectal wall from 9 O'clock to 4 O'clock with its inferior extent at 2 cm above the anal verge. Trans-rectal excision of the tumour was done. Patient made uneventful recovery.

Conclusion: Trans-anal resection of lower rectal GIST is an effective and acceptable approach because of advantages of limited surgery, viz. sphincter preservation, short operative duration, early recovery and low complication rate.

Keywords: NIL

Introduction

Gastrointestinal stromal tumour (GIST) is a tumour originating from the mesenchymal tissue with a malignant potential. Its incidence is 1–2/100,000 population, accounting for approximately 20% of all soft tissue sarcomas.[1-2] Stomach is the most common site (60%), while rectum is relatively a rare site for GIST, accounting for approximately 5% of all the GIST. [3].

Because of its low incidence, lack of evidence from a large sample, and lack of prospective studies, predictive data in the National Comprehensive Cancer Network (NCCN) guidelines for rectal GIST are mainly derived from a retrospective study of 111 cases published in 2006 [4].

Preoperative treatment, surgical approach, resection scope and the prognosis of rectal GIST are still inconclusive and marred with controversies [6]. Surgery is the principal treatment for non-metastatic and resectable rectal GIST. Few available data refer mainly to the modern techniques for excision of tumours of the upper or middle third of the rectum.

The question, whether local excision, such as trans-anal excision of a lower rectal GIST is comparable to an oncologic resection or not is unanswered. Trans-anal resection techniques have increasingly been applied for this 'atypical' indication during the recent years, especially in combination with neoadjuvant imatinib therapy. We report a case of successful trans-anal excision of a lower rectal GIST.

Case Presentation

A 33-year-old gentleman was referred to our department with chief complaints of painful defecation and something coming out from the anus for 5 months. MRI pelvis revealed a 50x46 mm intramural tumour of the anterior wall of the rectum with a small exophytic extension . Sigmoidoscopy confirmed the presence of a submucosal lesion, 2 cm from the anal verge (Figure 1). Multiple biopsies were taken, which revealed a spindle cell neoplasm with immunohistochemistry (IHC) positive for c-kit, confirming it to be a GIST. Neoadjuvant therapy with imatinib was instituted, with which his symptoms got relieved for 2 months. His symptoms (painful defecation) recurred for which he consulted a medical oncologist, who referred him to our department for surgical management. Positron emission tomography–CT (PET-CT) confirmed the presence of a 44x49 mm rectal tumour with low metabolic activity and no evidence of metastasis (Figure 2). Second sigmoidoscopy revealed a 5x5 cm friable nodular growth, arising from the anterior rectal wall extending 2cm above from anal verge with a short broad stalk. In view of recurrence of symptoms despite him being on Imatinib, surgical excision of the tumour was planned.

Figure 1

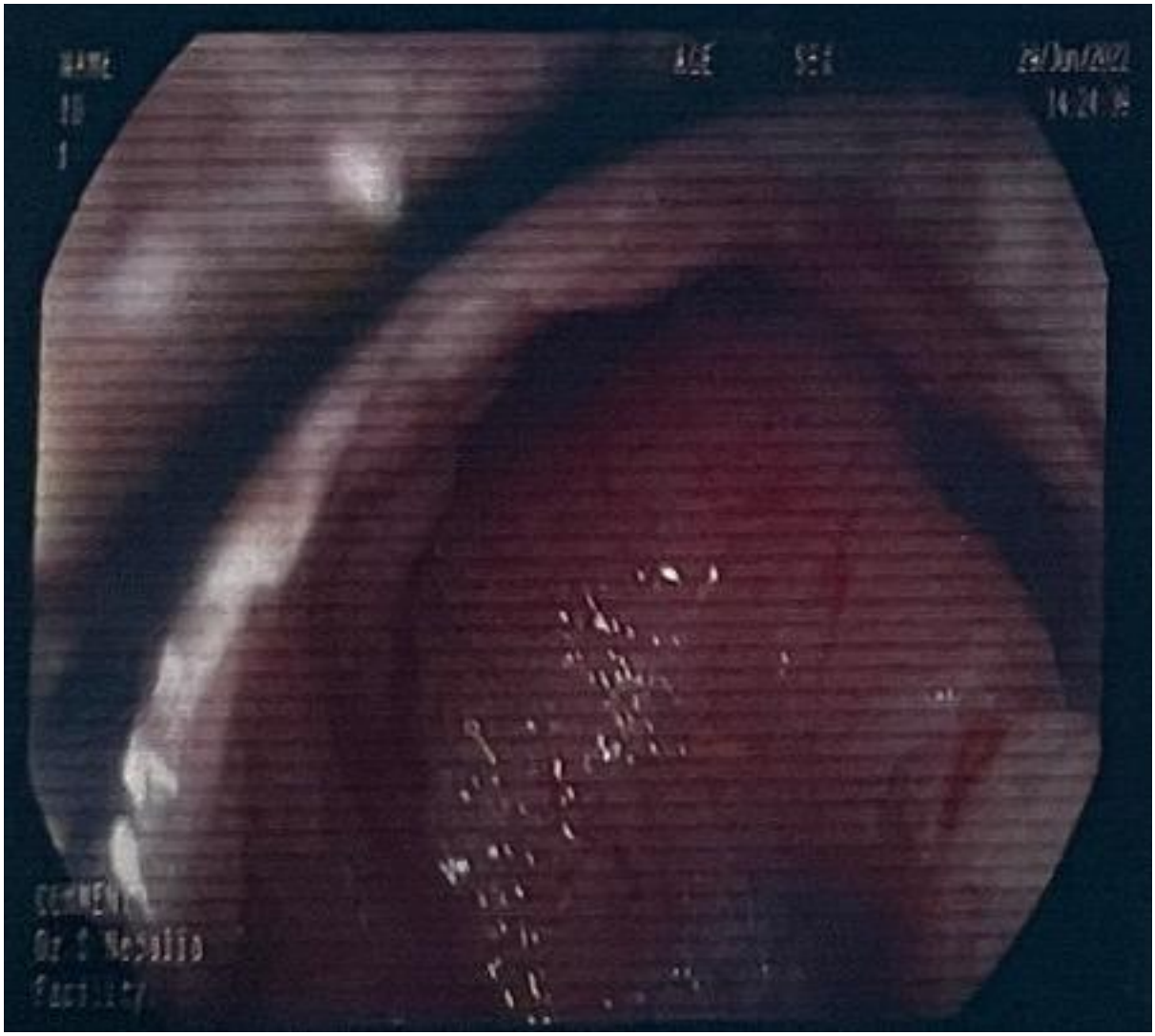

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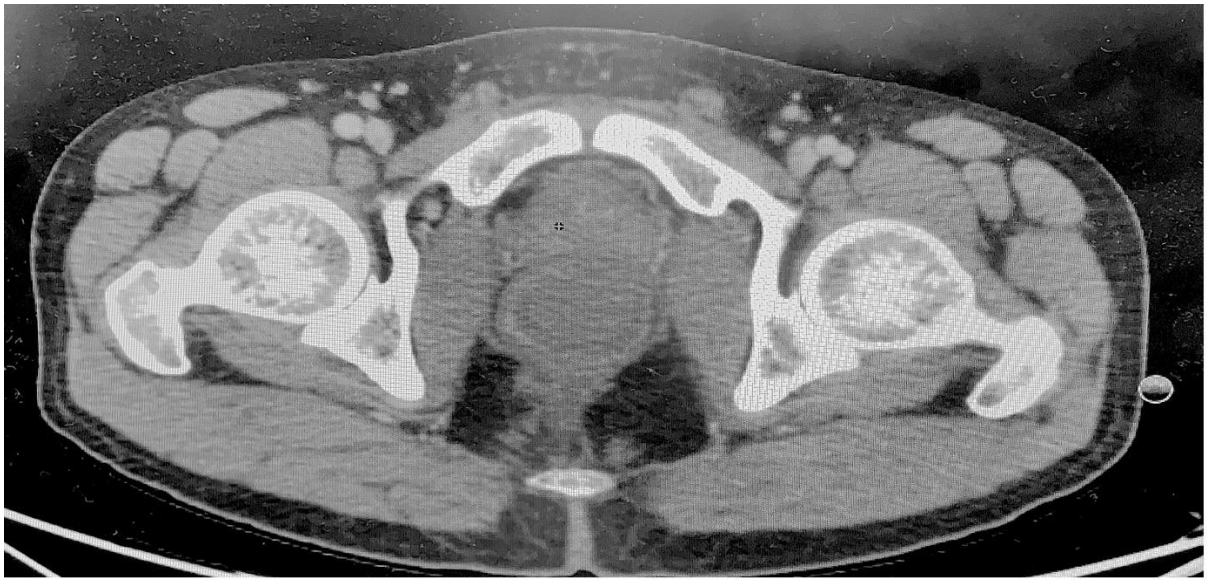
Figure 2



Treatment

Under general anaesthesia, the patient was placed in the modified lithotomy position and the rectum was examined using anoscope to expose the anorectal region. Approx 5x6 cm size tumour was seen arising from the anterior wall of the rectum from 9 O'clock to 4 O'clock position, having a short wide stalk. Lower margin of the tumour was visualised 2 cm above the dentate line. Full thickness, tumour bearing segment of the anterior rectal wall along with the surrounding perirectal fat were excised with electrocautery and Harmonic coagulation (Figure 3). To avoid subsequent rectal stricture formation, the defect in the anterior rectal wall was closed with interrupted 3-0 PDS sutures in a transverse fashion (Figure 4). He made an uneventful post operative recovery.

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Figure 3

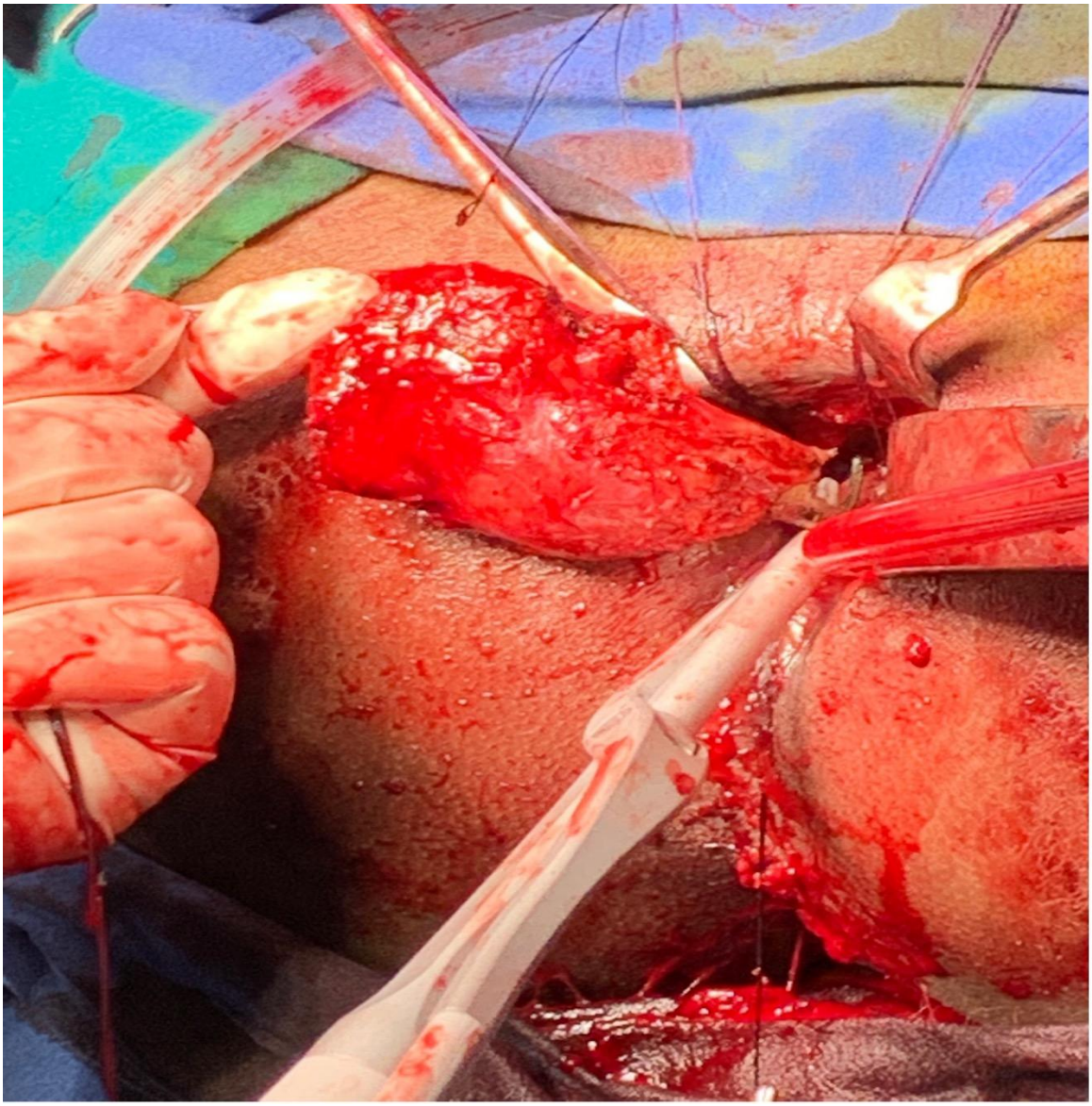

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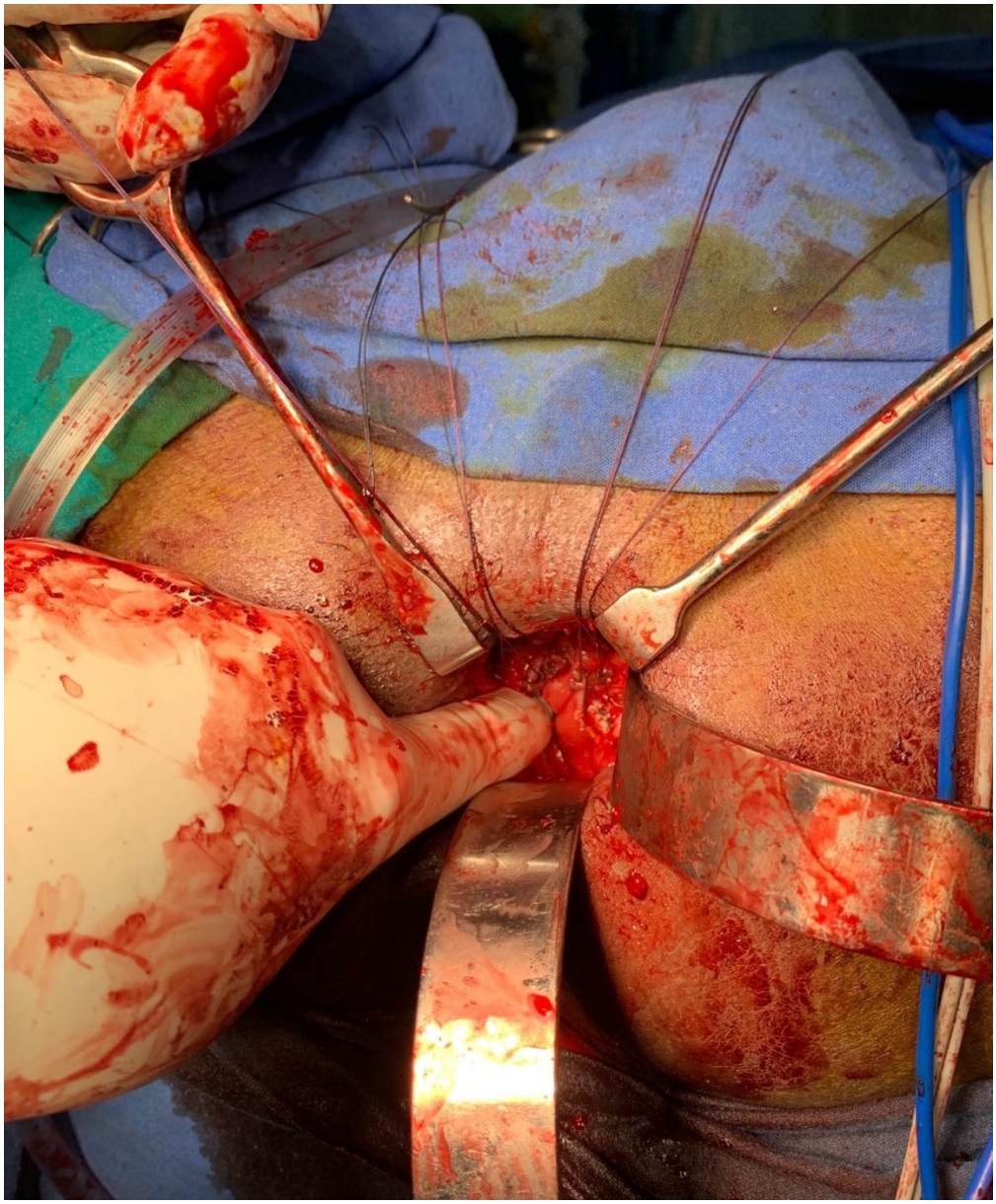
Figure 4



Outcome And Follow-Up

Histopathology revealed a 40×35×30 mm low-grade spindle cell neoplasm, possibly a GIST with mitotic activity of 1-2/50 HPF. Resected margins and serosa were free of tumour. Three months following surgery no recurrence was identified.

Discussion

Neoadjuvant treatment is a promising concept that has been successful in a variety of solid tumours[7]. It can shrink the tumour and reduce the extent of resection and the attendant risk of subsequent surgery. Previous studies of rectal GIST have shown that neoadjuvant therapy in GIST has a response rate of 42–100%, a sphincter-preserving rate of 33–100% and an R0 resection rate of 77–100%. 5-year overall survival (OS) rate can reach upto 90%.

In non-metastatic resectable colorectal GIST, surgery is the standard of care and it can be achieved in 95% of the cases[8,9]. In colorectal GIST, principle of surgery is wide resection of the tumour with negative margins. Usually, segmental resection of colon or rectum is enough because lymphatic and skip metastasis in GIST are very rare. Lymphadenectomy or total mesorectal excision (TME) is unnecessary in majority of the rectal GISTs.

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Such an approach (limited segmental bowel resection) is advantageous with regard to shorter hospital stay, early post operative recovery and lower perioperative morbidity, including a better defecation function.

In our case, permanent colostomy of an abdomino-perineal resection (APR) was avoided. Trans-anal local excision has primarily been reported as an acceptable surgical option in small rectal GIST (<3 cm), provided R0 resection margins can be achieved and if the sphincters are not involved [(10).] Large tumour size or high location (>8 cm from anal verge) pose strong limitation for a trans-anal excision.

Local recurrence is one of the major concerns after surgery for rectal GIST. It has been reported in 77% and 31% of cases after local excision and radical resection, respectively[(11).]

With the introduction of tyrosine kinase inhibitors (TKI), unresectable lesions could be down staged with subsequent R0 resection in over 80% of patients by instituting neoadjuvant therapy[(12,13).] Furthermore, local excision is a less morbid surgery with better anticipated postoperative functional outcomes.

Conclusion:

Treatment of a rectal GIST depends on its size and exact location. Neoadjuvant imatinib can decrease the size and facilitate a more conservative surgical resection. Trans-anal surgery is an effective approach because of the inherent advantage of less morbid surgery, sphincter preservation, short operation time, less blood loss, rapid recovery, and low complication rate.

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