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RECTAL PERFORATION IN A PATIENT WITH CHRONIC MYELOID LEUKEMIA UNDERGOING IMATINIB THERAPY: A CASE REPORT

General Surgery

Dr. Mayank Singh Professor, Department Of General Surgery, MLN Medical College, Prayagraj, India.

Dr. Arun Kumar* Junior Resident, Department Of General Surgery, MLN Medical College, Prayagraj, India. *Corresponding Author

Dr. Archit Sabberwal Junior Resident, Department Of General Surgery, MLN Medical College, Prayagraj, India.

Dr. Shashi Prakash Junior Resident, Department Of General Surgery, MLN Medical College, Prayagraj, India.

Dr. Kritika Singh Junior Resident, Department Of General Surgery, MLN Medical College, Prayagraj, India.

ABSTRACT

Introduction: Rectal perforation is an unusual but critical condition, particularly among immunocompromised individuals. This case outlines a spontaneous rectal rupture in a patient undergoing treatment for chronic myeloid leukemia (CML) with imatinib. **Case Summary:** A 58-year-old male, under imatinib therapy for CML for one year, presented with acute abdominal distress. Radiological imaging indicated free intraperitoneal air suggestive of gastrointestinal perforation. During surgery, a 1.5 cm anterior rectal perforation was identified. A primary repair of rectal perforation with end loop sigmoid colostomy was performed, and the patient's postoperative course was without complications. **Conclusion:** Although rare, rectal perforation in patients with CML, particularly those on tyrosine kinase inhibitors, must be considered in cases of sudden abdominal symptoms. Immediate diagnosis and surgical intervention are vital to improving prognosis.

KEYWORDS

Chronic myeloid leukemia, Spontaneous rectal perforation, Peritonitis, Imatinib, Tyrosine kinase inhibitor, Emergency surgery.

INTRODUCTION:

Chronic myeloid leukemia (CML) is a hematological malignancy marked by the presence of the BCR-ABL gene, typically managed using tyrosine kinase inhibitors (TKIs), notably imatinib [1]. In May 2001, imatinib mesylate received FDA approval for chronic myeloid leukemia, establishing the drug as the earliest landmark success of targeted therapy in oncology [2].

While Some of the most frequently reported adverse effects seen in patients treated with imatinib include superficial edema, muscle cramps, Musculoskeletal pain, rash, fatigue, headache, gastrointestinal side effects including abdominal pain and joint pain in 10% of the cases. Less frequent side effects with reported incidence of 1-10% include pancytopenia, febrile neutropenia, flushing, and liver function test abnormalities [3].

TKIs can compromise immune function, elevating the risk of infection and gastrointestinal side effects.

Spontaneous Colorectal perforation, in the absence of common etiologies such as trauma or malignancy, is exceptionally rare [4].

This report details an atypical case of rectal perforation in a CML patient on imatinib therapy.

Case Report:

A 58-year-old man, with a one-year history of chronic-phase CML managed with daily imatinib (400 mg), arrived at the emergency department complaining of severe lower abdominal pain, fever, vomiting and obstipation over the past 4 days.

On assessment, the patient was febrile (38.5°C), tachycardic (HR 136 bpm), hypotensive (BP 90/60 mmHg), and displayed generalized abdominal guarding with rigidity.

Laboratory Values Showed:

Hemoglobin: 9.7 g/dL
WBC Count: 1500/mm³
Platelets: 47000/mm³
S.creat: 1.91 mg/L
S.urea: 74 mg/dL
S.Albumin- 3.49 g/dL
PT-INR -1.57 , viral markers – Negative

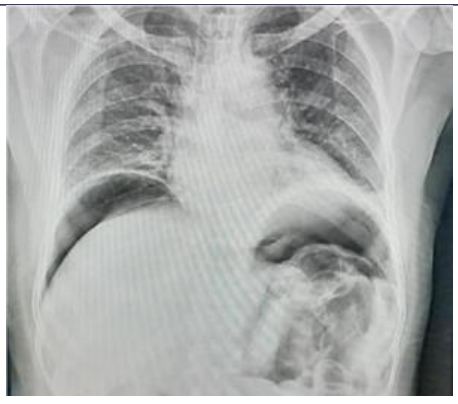

Figure 1. X- ray whole abdomen erect view showing free gas under diaphragm suggestive of GI perforation.

Abdominal X-ray erect revealed pneumoperitoneum [Figure 1]. Contrast-enhanced CT was not done due to unstable vitals. Patient was resuscitated and 6 units of random platelets were transfused. Following resuscitation, the patient underwent emergency exploratory laparotomy.

Figure 2: Rectal perforation of 1.5×1.5 cm of anterior rectal wall with protruding mucosa.

A 1.5× 1.5 cm perforation was identified on the anterior rectal wall, located approximately 8cm from the anal verge [Figure 2]. Feculent peritonitis was present. There were no signs of malignancy, ischemia, diverticulitis, or injury. Perforated Rectal margins were sent for histopathological examination. Intra-abdominal lavage was done using warm saline and 50 ppm hypochlorous acid, and primary repair of rectal perforation with diversion end loop sigmoid colostomy was performed with pelvic drain placement. Imatinib was stopped for 2 weeks.

Recovery was uneventful, and the patient was discharged on the postoperative day 5. Histopathological examination showed inflammatory changes without any malignant or leukemic cell infiltration.

DISCUSSION:

In patients with chronic myeloid leukemia (CML), gastrointestinal manifestations may present as abdominal pain, abdominal fullness, early satiety, largely attributable to splenomegaly with or without associated perisplenic inflammation or infarction.

Although uncommon, cases of gastrointestinal perforation linked to imatinib therapy have been documented, most often in the context of advanced gastrointestinal stromal tumors (GIST) [5].

While gastrointestinal adverse effects of imatinib are generally limited to mild symptoms such as nausea and diarrhea, uncommon but serious complications—including colitis and bowel perforation have been reported. Proposed underlying mechanisms involve mucosal weakening, inflammatory injury, or impaired vascular integrity.[6]

Spontaneous rectal perforation is exceedingly rare and typically linked to trauma, malignancy, or ischemia. In this patient, none of the conventional causes were evident. In CML patient, particularly those receiving TKIs such as imatinib mucosal immune defenses may be weakened, which can predispose them to gastrointestinal complications, including rare instances of perforation[4]. Reports in the literature indicate that bowel perforation is seen most frequently with agents such sunitinib and bevacizumab, particularly when used in the management of colorectal cancer, renal cell carcinoma, and other solid tumors [8-9].

Surgical intervention is essential in managing gastrointestinal perforations. In this case, primary repair of rectal perforation with end loop sigmoid colostomy was performed which was the appropriate choice due to fecal contamination and the patient's immunocompromised state.

CONCLUSION:

Rectal perforation in a patient with chronic myeloid leukemia receiving imatinib is highly unusual and warrants clinical vigilance. Prompt diagnosis and timely surgical intervention are key to achieving positive clinical outcomes in such patients. Clinicians managing patients on imatinib need to remain vigilant about the possibility of colorectal perforation as adverse effect.

Patient Consent:

The patient provided informed written consent for the publication of this case and any accompanying images.

Conflict Of Interest:

The authors declare no conflicts of interest.

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