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Case Report

Paralytic Ileus in a Case of Disseminated Tb-A Case Report

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ABSTRACT

We present a case of disseminated TB who developed vomiting and obstipation while on antituberculosis therapy. Examination revealed distended and tender abdomen consistent with acute intestinal obstruction. Urgent CT done confirmed intestinal obstruction without any identifiable cut-off favoring adynamic obstruction. Since other causes of paralytic ileus had been reasonably excluded so a working diagnosis of IRIS was made. The patient was managed conservatively, started on IV dexamethasone and made an uneventful recovery. IRIS presenting as paralytic ileus is very rarely seen in practice. IRIS should be kept in the differentials of a TB case showing paradoxical worsening despite treatment after exclusion of other common causes.

Keywords: IRIS, Paradoxical Reaction, Paralytic Ileus.

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INTRODUCTION

Immune Reconstitution Inflammatory Syndrome (IRIS) also called paradoxical response refers to paradoxical worsening of symptoms in TB patients on ATT. Though predominantly seen in HIV/TB co-infected cases who develop this condition once ART is started the condition is also being observed in immunocompetent cases1. The case described was started ATT for disseminated TB when he developed acute paralytic ileus which responded to conservative treatment and IV steroids. Paradoxical reactions involving abdomen are rare and cases presenting with paralytic ileus are rarer still. This case underscores the importance of keeping IRIS in the differential of patients who worsen despite therapy.

CASE REPORT

A 27-year-old male patient without known comorbids presented with a three-month history of low-grade evening fever, intermittent abdominal pain and weight loss. There were associated night sweats, fatigue, and anorexia. He denied cough, arthralgias or rash. His past medical history was notable for an episode of brucellosis in 2022, successfully treated, and a hospital admission in 2023 for an undiagnosed febrile illness with a diffuse rash. He lived in a crowded but well-ventilated household, consumed unpasteurized milk often but had no known Tuberculosis contact. His examination findings revealed mild abdominal tenderness, firm mild hepatosplenomegaly, bilaterally decreased breath sounds consistent clinically with pleural effusion. Investigations revealed Hb 10 g/dL, MCV 75 fl, Ferritin 427 ng/ml consistent with anemia of chronic disease, positive Mantoux test (15 mm). A contrast-enhanced CT (CECT) scan demonstrated mediastinal and mesenteric lymphadenopathy, abdominopelvic ascites, and bilateral pleural effusions. Pleural fluid analysis showed an exudative lymphocytic effusion with elevated ADA levels suggestive of tuberculosis. Based on these findings, he was diagnosed with disseminated tuberculosis and initiated on a four-drug anti-tuberculosis therapy (ATT) regimen under directly observed therapy (DOT). By the 25th day of ATT, he developed acute onset diffuse abdominal pain with repeated vomiting and absolute constipation. His abdomen was slightly tender on palpation and bowel sounds were audible. His chest radiograph showed no air under diaphragm and abdominal x-ray showed prominent to dilated small bowel loops with air fluid levels (Figure-1B). CECT abdomen confirmed prominent small bowel loops with mesenteric adenopathy (Figure-1A). However, no definite cut-off could be identified. He was managed conservatively with nil per orum (NPO), nasogastric decompression, and intravenous analgesia. His investigations done during this episode showed CRP 13 mg/l (Normal: <6mg/l), normal complete blood count and electrolytes and negative HIV status. Surgical team was taken on board, and patient was started on conservative treatment for SBO to which he started

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responding. Based upon the clinical and radiological picture consistent with small bowel obstruction, absence of a definite cut-off on CT and recent initiation of ATT a diagnosis of paralytic ileus was made and IV Dexamethasone 4mg twice daily was added to the patient's regime. His symptoms resolved within two days of conservative treatment without the need for surgical intervention, and ATT was continued uninterrupted. The episode was suspected to be a manifestation of immune reconstitution inflammatory syndrome (IRIS). The patient remained stable on treatment with no further complications and continued under close monitoring.

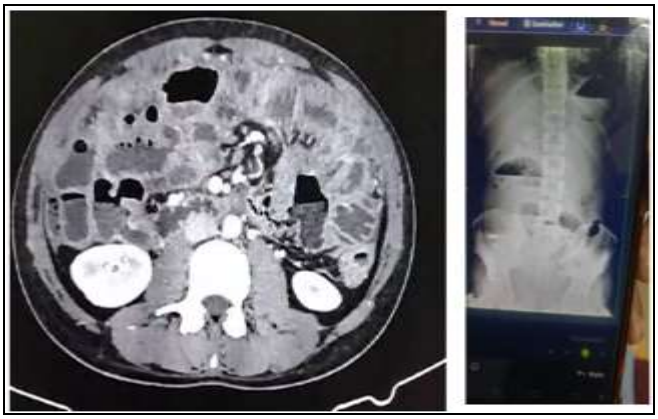


Figure-1A: CT scan showing thickened bowel loops without cut-off. Figure-1B: X Ray abdomen showing dilated gut loops

DISCUSSION

TB-IRIS is a condition where tuberculosis symptoms paradoxically worsen or reappear in patients receiving effective anti-tuberculous treatment potentially occurring both during and after completing anti-TB therapy. There are no uniform diagnostic criteria for this condition and its mainly a diagnosis of exclusion as other common differentials like superimposed infections, treatment failure, relapse and drug resistance, drug malabsorption especially in cases of diarrhea and relapse should be ruled out based upon a comprehensive clinical and lab work up.[2,3] A diagnostic criterion requiring initial improvement followed by paradoxical worsening and absence of other causes of deterioration has been suggested.[4] TB-IRIS also known as Paradoxical Reaction or PR is predominantly observed in cases with TB/HIV co-infection, but immunocompetent cases are also being sporadically reported. The frequency of PR in a study was 14.4 % and 3.8 % for HIV-positive and HIV-negative individuals respectively.[1] A paradoxical response occurs when a patient initially responds well to antituberculosis treatment but then experiences a worsening of existing tuberculosis symptoms or the appearance of new symptoms, as seen on clinical or radiological exams.[5] Rapid elimination of mycobacteria with anti-TB therapy can trigger a massive release of bacterial antigens, leading to an exaggerated inflammatory response termed hypercytokinemia or cytokine storm.[6] Incidence of IRIS varies from 6–30% in patients receiving antituberculosis therapy for tuberculous pleural effusion and lymphadenitis.[7] Given resource constraints this entity is rarely diagnosed in developing countries, so its true incidence remains elusive. The time of onset varies broadly from 2 weeks to 2 months. Sometimes it is associated with reversion of tuberculin test to positive and an increase in lymphocyte count.[5] Analyses of reactivation sites reveal that mostly the affected sites are CNS and lungs with IRIS occurring at the originally infected site in 75% or a different site in 25% cases.[5] Abdominal involvement is quite rare presenting in the form of abdominal pain consequent to peritonitis or mechanical intestinal obstruction due to lymph nodes or masses.[5,8] In a case series peritoneum as the site of paradoxical response was observed in two cases. One had multiple small bowel ulcers and mesenteric lymph nodes while the other developed terminal ileal thickening.[5] A study revealed that pseudo-obstructions are rarer still. Risk factors for PR include hypoalbuminemia, lymphopenia, anemia, lymphadenopathy, extrapulmonary disease, absence of non-HIV immunosuppression (diabetes mellitus, cancer, chronic renal failure or pregnancy), high pleural eosinophil and protein concentration.[1,9] Only one case of paralytic ileus as a manifestation of IRIS has been reported so far.[9] Our patient had disseminated TB and developed paralytic ileus most likely due to a paradoxical response as he had negative infectious screen, no dyselectrolytemias or thyroid issues and most importantly a mechanical obstruction was excluded by CT scan which did not reveal any cut-off. Positive aspect is that around 78% episodes recover.[5] In our case paradoxical response occurred with disseminated TB and patient's lymphocyte count remained static which does not exclude a paradoxical response.[7] As for the treatment like diagnosis there are no standard guidelines. Since Mycobacterium TB is the target of immune response so ATT should continue to decrease the antigenic load. Steroids are the drug of choice. Prednisolone in the dose range of 0.5mg/kg/day for 2 weeks followed by

progressive taper. 23% cases recover spontaneously without any treatment.[3] TNF-alpha antagonists are second line option in case of treatment failure with steroids.[10] We conclude that IRIS should be included in the differential of cases with paradoxical worsening of Tuberculous symptoms after the initiation of ATT.

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Authors' Contribution

Following authors have made substantial contributions to the manuscript as under:

MFBH & HZ: Data acquisition, data analysis, critical review, approval of the final version to be published.

HT & MSJ: Study design, data interpretation, drafting the manuscript, critical review, approval of the final version to be published.

YJ & MH: Conception, data acquisition, drafting the manuscript, approval of the final version to be published.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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