Case Report

Isolated Rectal Tuberculosis in Immunocompetent Host

Piyush Manoria, Abhishek Singhai[1], Hanni V Gulwani[2]

Bhopal Memorial Hospital and Research Centre, [1]Department of Medicine, All India Institute of Medical Sciences, [2]Department of Pathology, Bhopal Memorial Hospital and Research Centre, Bhopal, Madhya Pradesh, India

Abstract

Abdominal tuberculosis (TB) is the sixth most common site for extrapulmonary TB. Ileocecal region is the most common site for it, and its incidence reduces as we move proximally and distally from it. Isolated rectal TB in an immunocompetent person is very rare, and it usually mimics as rectal carcinoma. The yield of endoscopic biopsies for granuloma is low due to submucosal location of these lesions, and mostly, they are diagnosed after surgical intervention. We report a case of isolated rectal TB in a middle-aged female who present with chronic diarrhea and was diagnosed by the presence of epithelioid cells forming granulomas and acid-fast bacilli in rectal biopsy.

Keywords: Lower gastrointestinal tract, rectum, tuberculosis

Introduction

High prevalence and incidence of disease and a high rate of transmission of infection characterize tuberculosis (TB) situation in India. Extrapulmonary TB (EPTB) results from the hematogenous and lymphatic spread of *Mycobacterium tuberculosis* bacilli. This spread along with formation of antitumor necrosis factor alpha, interleukin 12, and interferon gamma leads to protective immunity against bacteria. Gradually encapsulated granuloma forms which contains viable bacilli. Although this can happen at any point after primary infection, it most commonly occurs years or decades later because of the alteration of responsible immune response mechanisms, such as extreme ages (children or elderly), concurrent medical conditions, or treatments entailing an alteration of cell-mediated immunity. Risk factors involved in the development of EPTB are mainly age, female gender, concurrent HIV infection, and comorbidities such as chronic renal disease, diabetes mellitus, or immunosuppression. Extrapulmonary sites of infection commonly include lymph nodes, pleura, and osteoarticular areas, although any organ can be involved. The diagnosis of EPTB can be elusive, necessitating a high index of suspicion.

Tuberculous enteritis can involve any aspect of the gastrointestinal tract although the ileocecal region is the most common site of intestinal involvement. The pathogenesis of tuberculous enteritis can be attributed to four mechanisms: ingestion of contaminated milk or food in the case of infection by *Mycobacterium bovis*, swallowing of infected sputum, hematogenous spread from active pulmonary or miliary TB, or contiguous spread from adjacent organs. The organism penetrates the mucosa and localizes in the submucosal lymphoid tissue, where it initiates an inflammatory reaction with subsequent lymphangitis, endarteritis, granuloma formation, caseation necrosis, mucosal ulceration, and scarring. The symptoms and signs of tuberculous enteritis are relatively vague and nonspecific. Nonspecific chronic abdominal pain is the most common symptom occurring in 80%–90% of patients.

Rectum is an uncommon site for TB even in highly endemic regions like India, and it usually coexists with pulmonary TB. Isolated rectal TB in an immunocompetent person is very rare, and very few cases have been reported worldwide.[1] We report a case of isolated rectal TB who masqueraded as rectal malignancy.

Address for correspondence: Dr. Abhishek Singhai, Department of Medicine, All India Institute of Medical Sciences, Bhopal, Madhya Pradesh, India.
E-mail: drabhisheksinghai@gmail.com

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Case Report

A 35-year-old female with no comorbidities and addiction came to the hospital with complaints of loose motions and pain in abdomen. She was having watery stools 8–10 times a day with nocturnal frequency of 3–4 times. It was associated with mucus in stools and tenesmus, and it persisted with fasting. Pain in abdomen was in the left lower quadrant of abdomen, intermittent, dull aching in nature and used to increase during defecation. She was also having significant loss of weight of 15 kg in 1 year. There was no similar illness in the past or family. There was no history of TB in family. Her obstetric history was normal but was having irregular menstrual period for 6 months.

Her body mass index was 18.1 kg/m^2. General and systemic examination was normal. Her complete blood count, renal function test, and liver function test were normal. Her erythrocyte sedimentation rate was high and measured 45 mm at 1 h. She was nonreactive for HIV, hepatitis B, and hepatitis C. Her chest X-ray and ultrasonography of the abdomen were normal. Inflammatory bowel disease, abdominal TB, and intra-abdominal malignancy were kept as differential diagnoses; therefore, colonoscopy and contrast-enhanced computerized tomography (CECT) scan of the abdomen were planned. Her colonoscopy was done which showed a large ulceroproliferative growth with luminal narrowing in the rectum starting at 3 cm and extending up to 13 cm from anal verge [Figure 1a]. Proximal to the growth mucosa appeared normal till cecum and terminal ileum [Figure 1b]. CECT scan of the abdomen and pelvis showed diffuse thickening of the rectum and anal canal with narrowing in the anorectum. The remaining region of the colon was normal in appearance both by colonoscopy and CECT scan. CECT scan also showed a normal ileocecal region. Screening of the chest by CT scan showed normal lung fields.

Histopathological examination of the biopsy from the rectal growth revealed multiple epithelioid cells attempting to form granuloma. Ziehl–Neelsen staining demonstrated the presence of several acid-fast bacilli (AFB) [Figure 2]. Therefore, a final diagnosis of rectal TB was made, and the patient was started on standard four drugs antitubercular therapy (ATT). She responded to the treatment well and became asymptomatic after 2 months of therapy.

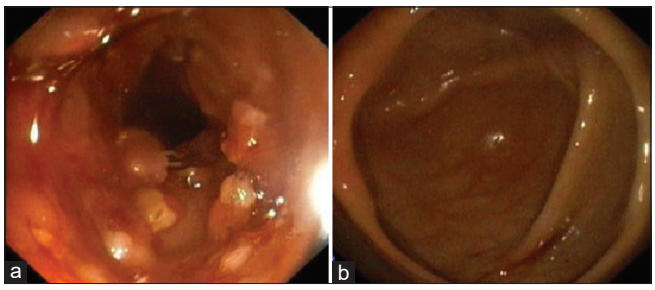

Figure 1: (a) Colonoscopy image showing ulceroproliferative lesion involving rectum, (b) colonoscopy image showing normal cecum and ileocecal valve

Discussion

EPTB accounts for 15% of cases of TB. Abdominal TB is the sixth most common cause of it. TB can involve any part of gastrointestinal tract from esophagus to anal canal; however, most commonly, it involves the ileocecal region.[2] Rectal TB is very rare, and it mostly occurs along with pulmonary TB. Anorectal TB accounts for <2% of all cases of abdominal TB.[3] Most of the primary infections are hyperplastic or hypertrophic type, and secondary infections tend to be ulcerative type.[4] It can occur through contaminated food, swallowed phlegm, and lymphohematogenous dissemination of bacilli from infected site or through direct seeding from infected adjacent organs such as ovary or anus.[5] It usually presents with pain in abdomen, altered bowel habits, hematochezia, and constitutional features. Delay in its diagnosis can lead to intestinal obstruction, anorectal abscess, or rectal fistula. Puri *et al*. have shown in their study of eight patients of isolated rectal TB that 88% of patients present with hematochezia, 75% with constitutional features, and 37% with constipation.[6] It usually mimics rectal malignancy, but it can also be misdiagnosed as inflammatory bowel disease, solitary rectal ulcer syndrome, stercoral ulcer, and other granulomatous infections. In endoscopy, it mimics like malignant rectal lesion and most of them has tight stricture within 10 cm of anal verge. Only histopathology can prove its diagnosis, but its yield is low due to predominant submucosal involvement. Granulomas are reported in 8%–48% of patients and caseation in one-third of these cases.[7] Positive rate of the presence of AFB is variable in various studies. The yield of mycobacterial culture is 0%–69% and of polymerase chain reaction is 20%–64% in gastrointestinal TB. Diagnosis is delayed in these cases as symptoms are nonspecific and biopsies are often negative. Mostly, these patients undergo surgical interventions and diagnosis is made in surgical specimen. We were lucky to get granulomas and AFB in endoscopic biopsies, which lead to early diagnosis and treatment. Treatment is with the conventional four-drug ATT for at least 6 months with 2 months of intensive therapy. Surgery is needed if symptoms

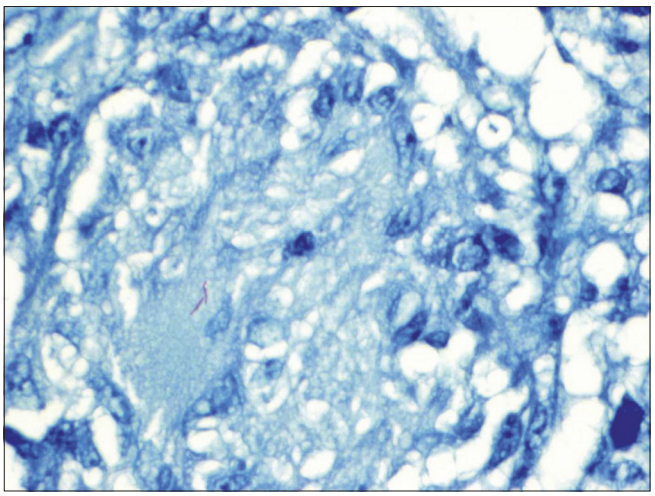

Figure 2: Ziehl–Neelsen stain showing the presence of scattered acid-fast bacilli (×100, oil immersion)

of intestinal obstruction persist, if stenosis persists after 3–6 months of ATT, if lesion is difficult to differentiate from malignancy, or when malignancy and TB coexist.[8]

Conclusion

Physicians should consider TB as one of the differential diagnoses in ulceroproliferative lesions involving any part of the gut even in immunocompetent state. Rectal TB can also present as a case of chronic diarrhea, and a high index of suspicion should be kept for it as delay in diagnosis can increase morbidity and mortality from it.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that her name and initial will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Research quality and ethics statement

The authors followed applicable EQUATOR Network ("http://www.equator-network.org/) guidelines, notably the CARE guideline, during the conduct of this report.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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