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## Rectal tuberculosis in an HIV-infected patient: case report

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### ABSTRACT

The gastrointestinal (GI) tract has been increasingly affected by tuberculosis, especially in immunocompromised patients. Although strict rectal involvement is rare, the GI site mostly affected is the ileocecal region. Thus, tuberculosis should always be considered in the differential diagnosis of perianal and rectal lesions, and more so in patients infected by the HIV virus. The authors report the case of a 32-year-old man presenting a long-term history of fever, night sweats, weight loss, bloody diarrhea, fecal incontinence, tenesmus, and rectal pain. HIV serology was positive. The patient underwent anoscopy and biopsy, which disclosed the diagnosis of rectal tuberculosis. Thus the patient was referred to an outpatient clinic to follow the standard treatment.

### Keywords

Tuberculosis; Proctitis; Diarrhea; Acquired Immunodeficiency Syndrome.

### INTRODUCTION

Worldwide, tuberculosis remains the major cause of morbidity and mortality, by infectious disease, affecting approximately 30-50% of the world's population (3 billion people), which corresponds roughly to 8–10 million people a year, more than 3 million in Sub-Saharan Africa, and 5,000 deaths per day (2.3 million per year). The HIV pandemics, lack of adherence to national tuberculosis control programs, and worsening of economic situations, are among various contributing factors for the high incidence of tuberculosis.<sup>1</sup>

In 2013, 71,123 new cases of tuberculosis were diagnosed in Brazil, corresponding to the incidence

rate of 35.4/100,000 inhabitants. Among them, 85.7% presented pulmonary involvement and 65.2% of them were bacilliferous.<sup>2</sup>

The resurgence of tuberculosis, with the HIV pandemics, brought a new spectrum of clinical presentation,<sup>3</sup> with increased incidence of extrapulmonary manifestations reaching up to 50%.<sup>4</sup> AIDS patients are particularly susceptible to extrapulmonary tuberculosis, with the incidence occurring up to 76% in some series. In this setting, the lymphatic, urinary, digestive, and central nervous system are mostly affected,<sup>5-8</sup> while the terminal ileum

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and the cecum are predominantly involved in the gastrointestinal (GI) tract.<sup>3</sup>

Due to the increasing number of new cases of tuberculosis, and the varied forms of GI presentation,<sup>9</sup> tuberculosis should always be considered in the differential diagnosis of perianal and rectal lesions, like fistulas and abscesses, which are unresponsive to conventional treatment. This will avoid delay in diagnosis and treatment.

## CASE REPORT

A 32-year-old Caucasian man sought medical care, complaining of a 2-month history of rectal pain, tenesmus, bloody diarrhea with mucus, anal incontinence, nocturnal sweating, fever, weight loss (15% of his regular weight) and non-specific back pain. He had been diagnosed with an anal fissure and was referred to a proctologist. His past medical history was unremarkable; he denied tabagism, alcoholic consumption, or illicit drug abuse. At hospital admission, examination revealed an ill-looking and emaciated patient. Respiratory and cardiovascular examinations were normal; however, the abdomen was diffusely tender, mainly in the hypogastric region, without signs of peritonism or viscera enlargement. No lymphadenopathy was found.

Laboratory examination was normal except for a microcytic and normochromic anemia (hemoglobin = 10.2 g/dL; reference value; 13-15 g/dL). HIV serology was positive. Plain chest radiography was normal. The abdominal ultrasonographic examination revealed moderate hepatic steatosis, concentric thickening of

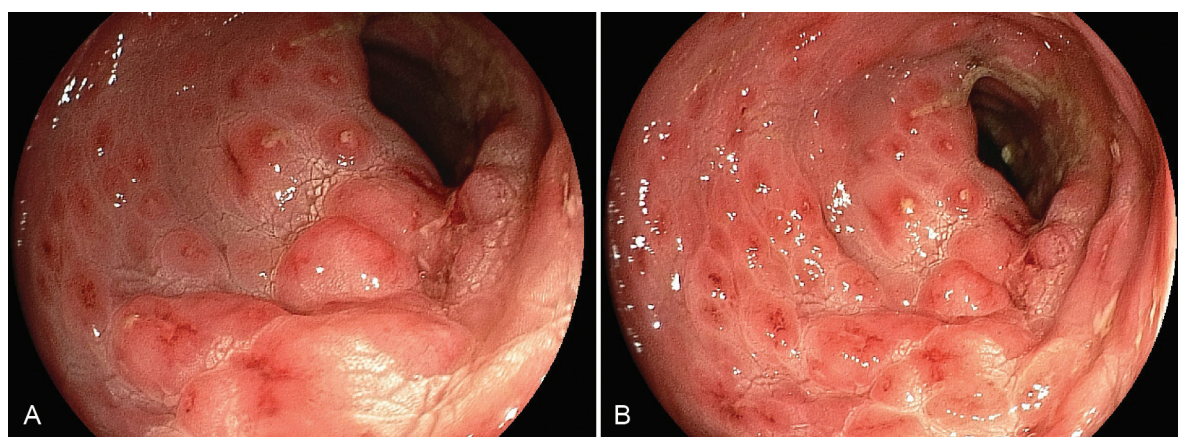
the sigmoid and rectal wall, which was associated with increased echogenicity of the surrounding adipose tissue.

A digital rectal examination evidenced diffuse and hardened rectal mucosa showing irregular lumpiness without bleeding. Initially, a neoplastic lesion was the first diagnostic suspicion; therefore, an anoscopy was performed, which disclosed a grainy, friable rectum without easy bleeding, mucus or pus. Biopsies were performed. Complementary colonic examination was undertaken with rectosigmoidoscopy, which revealed diffuse hyperemia and edema of the rectal mucosa, speckled by multiple and small ulcerous lesions in a sort of "cobblestone" pattern (Figure 1). In the proximal rectum, a 1.5 cm-wide deep ulcer covered by fibrin was also present (Figure 2).

The histological examination revealed a marked chronic inflammatory process with epithelial ulceration and multiple histiocytes aggregates showing a granulomatous sketch (Figure 3). Acid-fast bacilli were positive by Ziehl-Neelsen stain (Figure 3D).

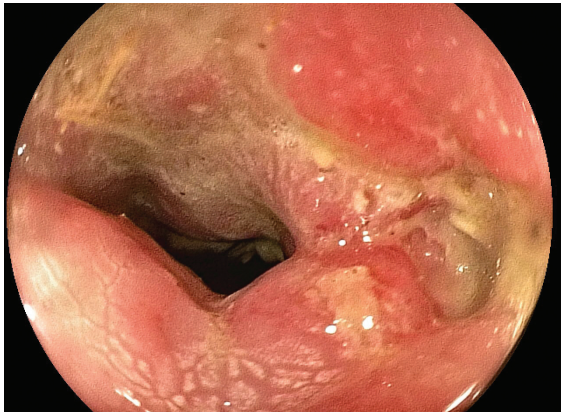
## DISCUSSION

Intestinal tuberculosis predominantly involves the ileocecal region.<sup>10</sup> Although the remaining colonic segments are rarely involved, the ascending, transverse, and sigmoid are the most affected.<sup>11-13</sup> Rectal involvement is even rarer and is often not well characterized.<sup>14</sup> Mukewar et al.<sup>15</sup> described a series comprising 37 cases of colonic tuberculosis in which only 5% showed rectal involvement.



**Figure 1. A, B** - Endoscopic view of the rectum showing hyperemia and edema of the rectal mucosa, speckled by multiple and small ulcerous lesions in a sort of "cobblestone" pattern.

The colonic infection is almost invariably secondary or concomitant with pulmonary disease. It is believed that swallowing the infected sputum is the route of GI infection. Approximately 20–25% of the GI tuberculosis cases present concomitantly pulmonary infection.<sup>11</sup> Isolated forms arise by contaminated milk ingestion (although this is rare these days due to the milk pasteurization process), hematogenic



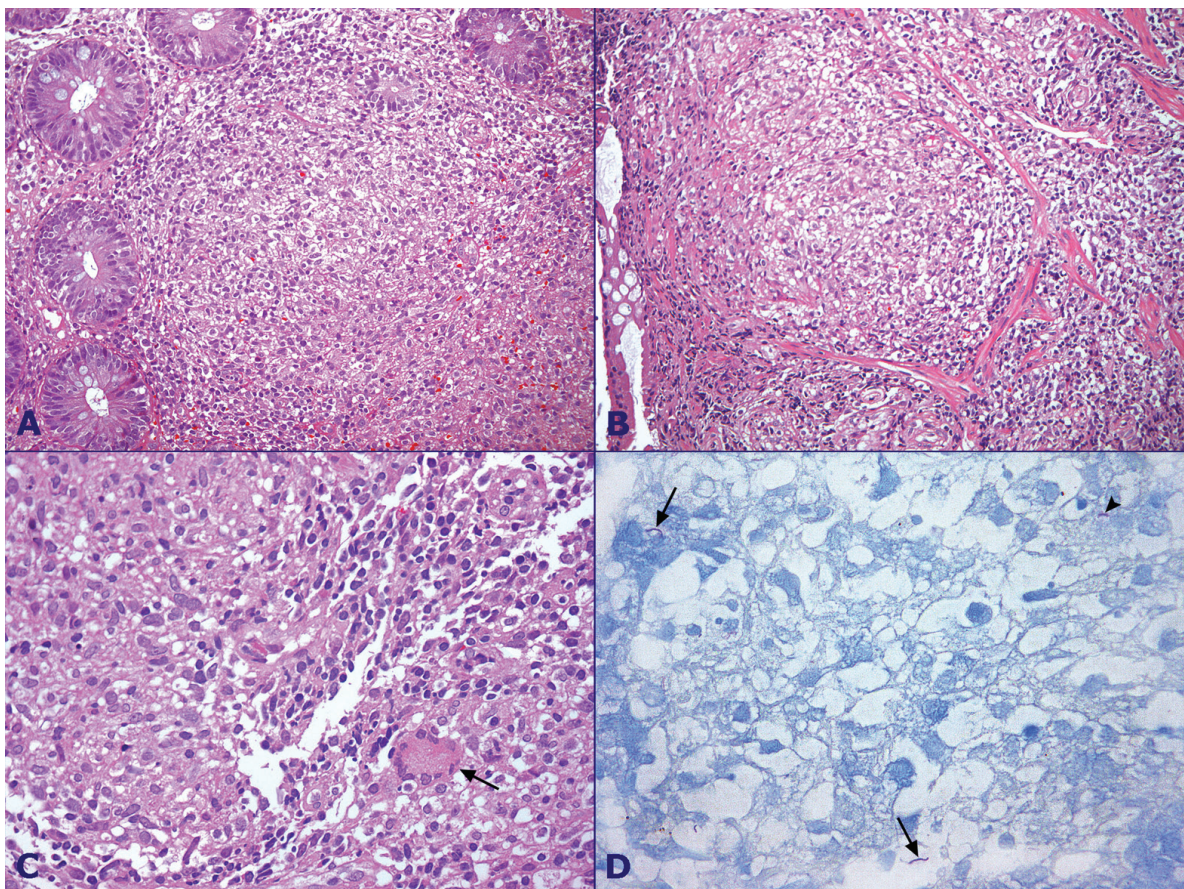
**Figure 2.** Endoscopic view of the rectum showing an isolated deep ulcer covered by fibrin.

dissemination, and the implanting of contiguous foci.<sup>6,7,16-20</sup>

Rectal tuberculosis is clinically varied. The most frequent symptoms are hematochezia, mucoid diarrhea, recurrent perianal fistulas (usually deep and presenting a purulent wound bed), diarrhea, constipation, tenesmus, and constitutional symptoms.<sup>11,21-23</sup>

The role of the flexible colonoscopy/rectosigmoidoscopy in the diagnosis of rectal/colonic tuberculosis is well established.<sup>12,24</sup> Superficial ulcers with irregular borders, nodularity, anorectal fistulas, and short and annular stenosis are the most frequent findings.<sup>12,25,26</sup> The differential diagnosis of this kind of rectitis involves Crohn's disease (cobblestone pattern lesions, linear ulcers that are also called aphthoid ulcers), or ulcerative colitis (continuous mucosa involvement with micro ulcers, pseudopolypoid, and submucosa vascular pattern derangement).

The histological finding of granulomatous chronic inflammation with caseous necrosis is highly characteristic of tuberculosis, although the positive



**Figure 3.** Photomicroscopy of the rectal mucosa. **A, B, C** - Ill-defined confluent granulomas without caseous necrosis within the rectal submucosa. In **B** - epithelioid cells (arrow) and a giant multinucleated cell (arrowhead) are shown. (H&E, 200X, 200X, and 400X, respectively); **D** - Acid-fast bacillus (arrow) (Ziehl-Neelsen, 1000X).

culture for *Mycobacterium tuberculosis* and/or the presence of acid-fast bacilli by Ziehl-Neelsen staining are the gold-standard diagnostic methods. However, superficial biopsies may not reveal the presence of bacilli, and the positivity of cultures can reach up to 36% of the cases.<sup>26</sup>

The differential diagnosis includes Crohn's disease and malignancies. Unawareness of this entity remains the main cause of extensive surgical resection for presumed neoplasias.<sup>21,24,27</sup>

The treatment for anal and rectal tuberculous lesions should include conventional surgical treatment and a current anti-tuberculous drug regimen, which changes the prognosis of the rectal disease.<sup>28</sup> Surgery may be indicated in cases of sepsis, persistent stenosis after 3–6 months of treatment, difficulty in differentiating from neoplasia, or when malignancy coexists.<sup>29</sup> Currently in Brazil, the recommended treatment involves isoniazid and rifampin for 6 months plus pyrazinamide and ethambutol during the first 2 months.<sup>30</sup> Relapses in immunocompetent patients are rare after the specific anti-tuberculous treatment; therefore, early diagnosis is the cornerstone to prevent recurrences, as well as surgeries, of a curable disease.<sup>31</sup>

Rectal tuberculosis, although uncommon, has increased in incidence in immunocompromised patients. Therefore, the consideration of this diagnosis, in the differential diagnosis of perianal and rectal lesions that are unresponsive to conventional therapies, will avoid delay in diagnosis, treatment, and unnecessary surgical procedures.

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