



A 32-Year-Old Woman with Intestinal Bleeding

Piero Tartaro^{1*} and Tiffany Chan²

¹Division of Gastroenterology, Sunnybrook Health Sciences Centre, Canada

²Department of Medicine, University of Toronto, Canada

Abstract

We present a case report of a patient from the Philippines who presented with acute onset lower gastrointestinal bleeding, diagnosed with intestinal tuberculosis. This case highlights one of the atypical presentations of extra-pulmonary tuberculosis. Diagnosis requires endoscopic evaluation not only for histopathology but tissue culture, in order to distinguish this from other mimickers like inflammatory bowel conditions. Although more common in countries known to have a high burden of disease, including the Philippines, abdominal intestinal tuberculosis should be considered in the differential diagnosis of patients presenting with vague abdominal pain, rectal bleeding, and caseating granulomas on histopathology.

Keywords: *Mycobacterium tuberculosis*; Intestinal tuberculosis; Lower gastrointestinal bleed

Case Presentation

A 32 year-old previously healthy female presented to the emergency department (ED) with a two-day history of hematochezia. She took no medications and had immigrated to Canada from the Philippines 8 years prior. She initially noticed bright red blood mixed with normal bowel movements, followed by loose bloody stools. On the background of this was a two-month history of intermittent right lower quadrant abdominal pain, associated with unintentional weight loss but no fevers or night sweats. There was no recent travel history or antibiotic use. She denied extra-intestinal manifestations of inflammatory bowel disease, including uveitis, aphthous stomatitis, rashes, or arthritis.

On presentation, she was hemodynamically stable and afebrile. Physical examination revealed mild right lower quadrant abdominal tenderness with deep palpation, but was otherwise unremarkable. Initial laboratory investigations demonstrated a microcytic anemia (hemoglobin level 99g/L, MCV 77.6), normal white blood cell count ($7.5 \times 10^9/L$) and platelets ($166 \times 10^9/L$), normal inflammatory markers (erythrocyte sedimentation rate 16mm/h and C-reactive protein 1mg/L), and normal liver profile (aspartate transaminase 15U/L, alanine transaminase 8U/L, and alkaline phosphatase 36U/L). Of note, she had presented to a different ED the day prior and her hemoglobin was noted to be 116g/L. Abdominal X-ray was normal. Given the drop in hemoglobin, the patient was admitted to hospital for further investigations, including a colonoscopy, by the Gastrointestinal (GI) team.

Diagnosis

Colonoscopy revealed discrete ulcers in the cecum and ascending colon, without intervening mucosal changes (Figure 1). There was no evidence of active bleeding and only one 8mm ulcer in the ascending colon had a small blood clot within in. The terminal ileum and remaining segments of colon were endoscopically normal (Figure 2). Multiple biopsies were taken and the histopathology of the ulcer edges revealed mild to moderate chronic colitis with necrotizing granulomas. The patient had no recurrence of lower GI bleeding (LGIB) during her hospitalization and was subsequently discharged home with outpatient GI follow-up.

The colonic ulcer biopsies were negative for acid fast bacilli (AFB) on smear microscopy, but subsequent tissue cultures were positive for *Mycobacterium tuberculosis* (TB) complex. The patient was referred to an infectious disease specialist and empirically started on rifampin (RMP) 600mg daily, isoniazid (INH) 300mg daily, pyrazinamide (PZA) 900mg daily, ethambutol (EMB) 675mg daily, and pyridoxine (vitamin B6) 50mg daily. Additional investigations, including three consecutive expectorated sputum samples, chest X-ray, and HIV testing, were all negative. On further questioning, it was discovered that her father had been previously treated for TB and she in fact had a positive Mantoux skin test in 2014 that was not further investigated or treated.

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*Correspondence:

Piero Tartaro, Division of
Gastroenterology, Sunnybrook Health
Sciences Centre, Room HG64, 2075
Bayview Avenue, Toronto, Ontario M4N
3M5, Canada, Tel: 416 480-6799;
E-mail: piero.tartaro@sunnybrook.ca

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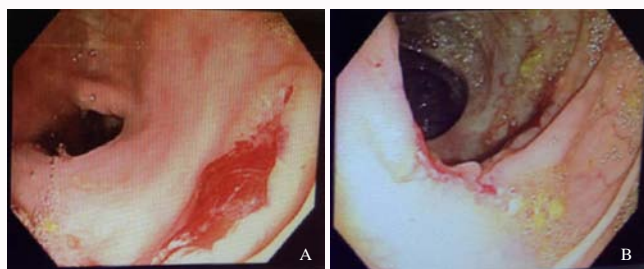


Figure 1: Ascending colon ulcer with adherent clot, zoomed in (A) and zoomed out (B).

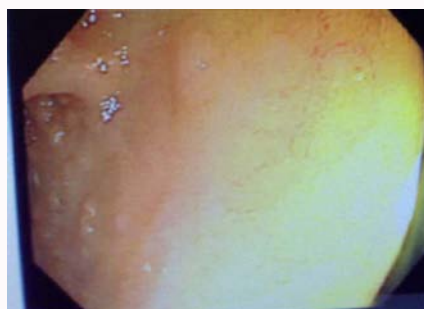


Figure 2: Normal terminal ileum.

Final sensitivities revealed a fully susceptible organism. The ethambutol was discontinued and the patient completed a two-month course of rifampin, isoniazid and pyrazinamide, following which she began a four month course of rifampin and isoniazid. Clinically, she remained well with no further episodes of LGIB and had no adverse reactions to her medications.

Discussion

Tuberculosis (TB) is a multi-systemic bacterial infection caused by *Mycobacterium tuberculosis* and affects approximately one-third of the world's population. In 2013, 9 million individuals were infected with TB worldwide, most of whom had lived in one of the 22 countries (including the Philippines) known to have a high burden of disease [1]. According to the WHO 2015 global TB report, there were 243,379 new cases of TB, of which 4,161 were extra-pulmonary cases in the Philippines [2]. Furthermore, there were 108 HIV-positive TB patients in 2014, a nearly 4-fold increase compared to 2013. The rise in prevalence of HIV-positive patients may be a contributing factor in the resurgence of TB across these nations. The correlation between HIV and TB infection is well recognized in developed countries, with TB becoming an index disease to screen for HIV, thereby identifying undiagnosed HIV patients and initiating early anti-retroviral therapy as needed.

While pulmonary TB is the most common manifestation of disease, extra-pulmonary TB may occur as a part of primary or reactivated infection. Abdominal TB is the sixth most common type of extra-pulmonary TB after lymphatic, genitourinary, bone and joint, miliary, and meningeal involvement. It may be acquired through hematogenous spread, direct invasion from adjacent organs, swallowing infected sputum, or ingesting contaminated food [3]. It subsequently infects multiple organs including the GI tract, peritoneum, mesenteric lymph nodes, liver, spleen, and pancreas.

In a recent retrospective review article that identified 57 patients with abdominal TB in a developed country, the most common area

of involvement was the GI tract and 66% of patients had evidence of bowel thickening on their CT scan [4]. Although our patient did not undergo abdominal CT scan, her primarily site of involvement on endoscopy was her GI tract. Intestinal lesions have been shown to occur in the ileocecal region in up to 75% of cases, thought to be secondary to the area's minimal digestive activity and increased physiological stasis, higher fluid and electrolyte absorption, and greater lymphoid tissue [3].

In our patient, her chief complaint of hematochezia would have initially favoured a diagnosis of hemorrhoids, which is the most common cause of rectal bleeding in patients under the age of 50 [5]. However, significant lower GI bleeding resulting in an acute drop in hemoglobin is uncommon with hemorrhoids, and usually causes bright red blood coating the stool rather than being mixed in with stool as seen in our patient. Clinical manifestations of intestinal TB are non-specific, including abdominal pain, anorexia, nausea, vomiting, weight loss, fever, intestinal obstruction, perforation peritonitis, and ascites [3]. It is a common mimicker of other inflammatory bowel conditions, particularly Crohn's disease (CD), given the similarities in clinical presentation and pathology [6]. Our patient's age, female gender, and chronic right lower quadrant pain associated with weight loss would have made CD a more likely diagnosis over intestinal TB, especially given that it is more commonly encountered in North America. Furthermore, patients with CD can present with sudden and brisk hematochezia when an intestinal ulcer erodes into an artery, whereas intestinal TB presenting with LGIB is rare. A 2009 literature review found only 10 cases of intestinal TB presenting with LGIB [7], most often from the ileocecal region.

Both diseases are characterized by chronic granulomatous inflammation, but Crohn's disease is typically non-caseating while intestinal TB is caseating [6,8], the latter of which we saw on our patient's pathology. Ultimately, distinguishing between these two diseases is essential for management. Unnecessary anti-TB drugs could cause toxicity and delays treatment of the actual disease, while incorrect treatment with steroids and immunosuppressive agents could cause fatal dissemination of TB [6].

The diagnosis of intestinal TB is most often made after endoscopic evaluation and biopsy of the affected area. While our patient had evidence of right-sided colonic ulcers, she did not have other typical features of intestinal TB including inflammatory strictures or hypertrophic lesions [6]. Histopathologies of the involved areas, as described above, often shows non-specific findings and are present in less than one-third of intestinal TB cases [6]. Smear microscopy with auramine staining is the most widely used test for detection of AFB [9]. Its limitations lie in its variable sensitivity depending on the type of specimen, patient population, and experience of the microscopist [10]. Furthermore, the presence of AFB in biopsies has only been reported to be positive in 5-11% of intestinal TB cases [8,11]. This is consistent with our patient's findings of a negative AFB smear and positive TB culture. Thus, mycobacterial culture is the gold standard in making a diagnosis but may take up to 8 weeks, especially if there is a low burden of disease [10]. Ultimately, difficulties in clinical diagnosis, lack of specific biologic markers, and long incubation time for cultures often leads to a delay in diagnosis and definitive treatment.

Treatment of intestinal tuberculosis depends on the clinical presentation and associated complications. Patients who develop bowel obstruction, perforation, intestinal ischemia, or severe

bleeding often require urgent exploratory laparotomy, followed by post-operative anti-tubercular drugs [7]. Otherwise, management is predominately medical. A large prospective cohort study in India found that follow-up colonoscopy to document endoscopic resolution was unnecessary, as it did not provide any additional changes to management in those patients who successfully completed treatment and remained asymptomatic [9].

Conclusion

We presented a case report of intestinal tuberculosis in a previously healthy woman from the Philippines with hematochezia. Her clinical presentation, although non-specific, was atypical for intestinal tuberculosis given the lower GI bleeding. Endoscopic evaluation with biopsy and tissue culture was ultimately required for definitive diagnosis. Abdominal intestinal tuberculosis, although uncommon, should be considered in the differential diagnosis of patients presenting with vague abdominal pain and rectal bleeding, with caseating granulomas on histopathology.

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