

Lower gastrointestinal bleeding as a rare manifestation of small bowel and colon tuberculosis: a case report

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Abstract

Tuberculous enteritis (TE) is an exceptionally rare cause of lower gastrointestinal (GI) bleeding, especially in elderly patients. Its clinical presentation can mimic more common conditions such as diverticular disease, malignancy, or inflammatory bowel disease, making early diagnosis challenging.

This case concerns an 89-year-old female patient who was transferred from the Internal Medicine Department to our clinic due to persistent lower GI bleeding.

The patient underwent two gastroscopies, which revealed no

significant findings, and two colonoscopies. The first colonoscopy showed diverticula in the descending colon, while the second identified a 1 cm ulcer with a whitish coating in the transverse colon. A computed tomography (CT) scan revealed pulmonary consolidation, atelectasis, and intraperitoneal fluid, along with sigmoid diverticula. Due to ongoing hemodynamic instability, the patient underwent urgent subtotal colectomy and terminal ileostomy. Intraoperative findings included blood clots filling the ileum and colon, wall thickening, multiple diverticula, and ascitic fluid. Histopathological analysis confirmed tuberculosis (TB) with the presence of epithelioid granulomas.

Introduction

Tuberculous enteritis (TE) is an exceptionally rare cause of lower gastrointestinal (GI) bleeding, often presenting diagnostic challenges due to its nonspecific symptoms and the overlap with more common gastrointestinal conditions. Small bowel and colon tuberculosis (TB) are rare causes of lower GI bleeding, with the presentation often resembling other, more common GI pathologies. TB in the gastrointestinal tract is usually found in the ileocecal region, but involvement of the colon, particularly when presenting with gastrointestinal bleeding, is uncommon. The management of such cases often requires a multidisciplinary approach, including endoscopy, imaging studies, histopathological examination, and surgical intervention in severe cases.

We present a rare case of lower GI bleeding due to small bowel and colonic tuberculosis in an elderly patient, highlighting diagnostic challenges and the multidisciplinary approach required for management. This case highlights the importance of maintaining a high index of suspicion, especially in elderly patients or those with potential risk factors for tuberculosis.

Case Report

An 89-year-old female patient was transferred to our department from the Internal Medicine Unit due to persistent lower GI bleeding. She presented with hematochezia, which had been ongoing for several days prior to admission. Despite conservative management and two gastroscopies, no significant findings were observed. Further investigation *via* colonoscopy revealed diverticula in the descending colon, while a second colonoscopy, advanced to the peripheral transverse colon, identified a 1 cm ulcer with a whitish coating in the transverse colon (Figure 1). Two hemostatic clips were placed to control the bleeding.

Additionally, a computed tomography (CT) scan of the thorax and abdomen revealed concerning findings, including consolida-

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tion in the lungs, atelectasis, pulmonary nodules, and intraperitoneal fluid collections, as well as sigmoid diverticula and other signs of systemic involvement (Figure 2).

Due to the patient's hemodynamic instability and continued GI bleeding, she was transferred to our department for further evaluation. The patient had a past medical history of hypertension, an unremarkable family history, and she had not mentioned any other episode of hematochezia, such as the one present. Upon examination, the patient was noted to be in significant distress with signs of sepsis, and urgent intervention was deemed necessary. After thorough evaluation, an urgent subtotal colectomy and terminal ileostomy were performed. Intraoperative findings included blood clots filling the last 50 cm of the ileum and the entire colon, along with palpable wall thickening in the terminal ileum, sigmoid, and descending colon, and multiple diverticula. Histopathological examination of the specimen confirmed the diagnosis of tuberculosis, revealing scattered epithelioid granulomas of tuberculous type.

Postoperatively, the patient was transferred to the intensive care unit, where she remained intubated and in a state of hemodynamic instability. Despite supportive care, her condition deteriorated, and she died three days after surgery due to septic shock and multi-organ failure.



Figure 1. Second colonoscopy: ulcer with whitish coating in the transverse colon.

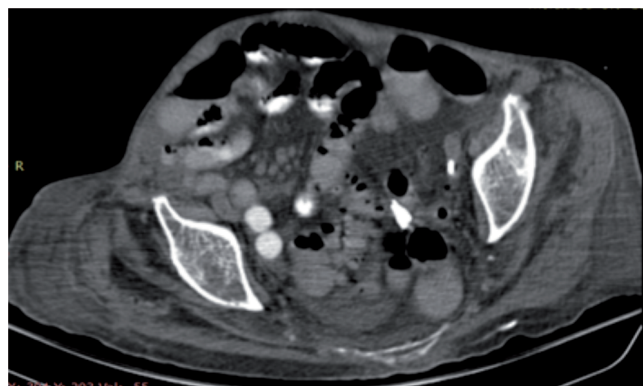


Figure 2. CT abdomen.

Discussion

Tuberculosis of the small bowel and colon is a form of gastrointestinal tuberculosis, most commonly affecting the terminal ileum and the ileocecal region. This distribution is due to several anatomical and physiological factors, including a relatively narrow lumen, slow transit time, minimal digestive activity, and abundant lymphoid tissue, particularly Peyer's patches, which facilitate the uptake and colonization of *Mycobacterium tuberculosis*. The primary pathophysiological mechanism involves ingestion of infected material, such as sputum from patients with active pulmonary tuberculosis or, less commonly, contaminated milk containing *Mycobacterium bovis*. Once the bacilli reach the intestinal mucosa, they penetrate through microabrasions or M cells and establish infection in the submucosal lymphoid tissue. Within 2 to 4 weeks, granulomatous inflammation develops, often with central caseation. This can lead to mucosal ulceration, transmural inflammation, and progressive tissue destruction. Hematogenous spread from a distant primary focus, such as the lungs, can also seed the intestinal tract, particularly in immunocompromised individuals. In this route, bacilli are delivered *via* the systemic circulation and localize in the vascular-rich areas of the small bowel and colon. Lymphatic spread from infected mesenteric or retroperitoneal lymph nodes is another recognized pathway. This can result in serosal involvement and may lead to strictures, adhesions, and segmental thickening of the bowel wall. As the disease progresses, chronic inflammation can lead to complications such as fibrosis, stricture formation, obstruction, fistulae, or perforation. Tuberculous colitis can mimic other chronic inflammatory conditions such as Crohn's disease, due to overlapping features like skip lesions, ulcers, and transmural involvement.¹⁻³

The clinical presentation of intestinal TB is typically nonspecific and insidious, contributing to frequent diagnostic delays. Patients commonly present with chronic abdominal pain, often localized to the right lower quadrant, along with constitutional symptoms such as fever, night sweats, anorexia, and unintentional weight loss. Changes in bowel habits are also common, including diarrhea, constipation, or alternating patterns. In some cases, patients may develop abdominal distension secondary to ascites or, less commonly, experience gastrointestinal bleeding.^{1,4,5} Advanced disease may result in complications such as intestinal obstruction, perforation, fistula formation, or strictures. A palpable mass in the right lower abdomen may mimic malignancy or inflammatory bowel disease. Although pulmonary TB may coexist, fewer than 25% of patients with intestinal TB have concurrent active pulmonary disease, and in many cases, intestinal TB may be the only evident site of infection.^{1,5}

The diagnosis of intestinal TB requires a comprehensive and integrated approach. Clinical suspicion must be supported by laboratory evaluation, imaging studies, endoscopic findings, and, whenever possible, histopathological confirmation. Hematologic investigations often reveal nonspecific findings such as anemia, elevated erythrocyte sedimentation rate (ESR), and hypoalbuminemia. Evaluation of ascitic fluid can provide important diagnostic clues in suspected cases of tuberculous peritonitis. The fluid typically exhibits elevated protein levels and a predominance of lymphocytes, which are characteristic of tuberculous etiology. Additionally, cytological examination and microbial cultures of the ascitic fluid are essential in ruling out alternative causes of peritonitis, such as malignancy or bacterial infection. Polymerase chain reaction (PCR) testing for *Mycobacterium tuberculosis* can serve as a valuable adjunct in the initial diagnosis of intestinal tuberculosis. However, it is not suitable for monitoring treatment

response, as PCR cannot distinguish between viable and non-viable bacilli; therefore, positive results may persist even after successful completion of therapy. Importantly, PCR may assist in differentiating intestinal tuberculosis from conditions with similar clinical and endoscopic features, such as Crohn's disease. In particular, multiplex PCR assays targeting multiple *M. tuberculosis* gene sequences have demonstrated improved sensitivity and specificity, further enhancing their utility in distinguishing tuberculosis from other inflammatory bowel disorders.³

Imaging modalities play a crucial role in the diagnostic workup. Ultrasonography may reveal peritoneal thickening, ascites, bowel wall thickening, and lymphadenopathy. CT, particularly CT enterography, provides detailed visualization of bowel wall abnormalities, asymmetric thickening of the ileocecal region, mesenteric lymph nodes with central necrosis, and associated complications such as strictures or fistulas.^{1,3,5} Endoscopic evaluation, particularly colonoscopy, is a critical diagnostic modality. Colonoscopy may reveal ulcers, strictures, nodularity, or inflammatory masses; however, these findings are not pathognomonic and can closely resemble Crohn's disease or malignancy. Histopathological examination of biopsy specimens remains the gold standard for diagnosis. The hallmark feature is the presence of large, coalescent caseating granulomas in the mucosa and submucosa. In some cases, tissue acquisition may require image-guided percutaneous biopsy or surgical intervention via laparoscopy or laparotomy when less invasive techniques fail to provide a diagnosis.^{1-3,5} In cases where diagnostic uncertainty remains despite thorough evaluation, and clinical suspicion is high, a therapeutic trial of antitubercular therapy (ATT) may be initiated. A favorable clinical response, typically observed within two to four weeks, may support the diagnosis retrospectively, though this approach should be used cautiously and only after excluding other differential diagnoses such as malignancy or inflammatory bowel disease.⁵

Intestinal tuberculosis is primarily managed with medical therapy, and most cases respond well to antituberculous treatment. The standard regimen includes isoniazid, rifampicin, pyrazinamide, and ethambutol for two months (intensive phase), followed by isoniazid and rifampicin for four additional months (continuation phase). Although some clinicians extend treatment to 9-12 months in complex or disseminated cases, current evidence supports the efficacy of the 6-month regimen in most patients. Mucosal healing is typically observed within the first two months, but residual complications such as strictures or hypertrophic lesions may persist.^{1,3}

Endoscopic balloon dilatation can be considered for managing isolated strictures, particularly in the ileum or duodenum, and may

prevent the need for surgery. Surgical intervention is reserved for complications such as non-resolving obstruction, perforation, fistula, or abscess formation. Surgical options include bypass procedures, radical resection of involved segments, or conservative approaches such as strictureplasty, with the latter being preferred due to better preservation of bowel length and fewer complications. The choice of procedure depends on the location and severity of the disease, as well as the patient's nutritional and general health status.^{1,3}

Conclusions

Tuberculous enteritis is a very rare cause of lower gastrointestinal bleeding. While the ileocecal region is most commonly affected, TB can involve any part of the gastrointestinal tract. A high index of suspicion, particularly in at-risk populations, is essential for timely diagnosis. A comprehensive evaluation, including imaging, endoscopy, histopathology, and molecular testing, plays a critical role in distinguishing intestinal TB from other gastrointestinal disorders. Most patients respond well to antituberculous therapy, with surgery reserved for complications such as obstruction, perforation, or non-resolving strictures. Early recognition and appropriate management are crucial to prevent morbidity and reduce the risk of mortality associated with untreated disease.

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