Gastrointestinal Tuberculosis Presenting as Malnutrition and Distal Colonic Bowel Obstruction

Raja C. Chakinala  
New York Medical College

Zahava Farkas  
New York Medical College

Benjamin Barbash  
New York Medical College

Khwaja Haq  
New York Medical College

Shantanu Solanki  
New York Medical College

See next page for additional authors

Follow this and additional works at: https://touroscholar.touro.edu/nymc_fac_pubs

Part of the Medicine and Health Sciences Commons

Recommended Citation
Chakinala, R. C., Farkas, Z., Barbash, B., Haq, K., Solanki, S., Farooq, T., & Dworkin, B. (2018). Gastrointestinal Tuberculosis Presenting as Malnutrition and Distal Colonic Bowel Obstruction. Case Reports in Gastrointestinal Medicine, 2018, 2808565. https://doi.org/10.1155/2018/2808565

This Case Report is brought to you for free and open access by the Faculty at Touro Scholar. It has been accepted for inclusion in NYMC Faculty Publications by an authorized administrator of Touro Scholar. For more information, please contact touro.scholar@touro.edu.
Authors
Raja C. Chakinala, Zahava Farkas, Benjamin Barbash, Khwaja Haq, Shantanu Solanki, Taliya Farooq, and Brad Dworkin

This case report is available at Touro Scholar: https://touroscholar.touro.edu/nymc_fac_pubs/1361
Case Report

Gastrointestinal Tuberculosis Presenting as Malnutrition and Distal Colonic Bowel Obstruction

Raja Chandra Chakinala, Zahava C. Farkas, Benjamin Barbash, Khwaja F. Haq, Shantanu Solanki, Muhammad Ali Khan, Edward Esses, Taliya Farooq, and Brad Dworkin

1Medicine, New York Medical College, Westchester Medical Center, Valhalla, NY, USA
2Division of Gastroenterology and Hepatobiliary Diseases, New York Medical College, Westchester Medical Center, Valhalla, NY, USA
3Division of Gastroenterology, University of Tennessee Health Science Center, Memphis, TN, USA
4Department of Radiology, New York Medical College, Westchester Medical Center, Valhalla, NY, USA
5Department of Pathology, New York Medical College, Westchester Medical Center, Valhalla, NY, USA

Correspondence should be addressed to Raja Chandra Chakinala; rajachandra@gmail.com

Received 4 December 2017; Accepted 31 January 2018; Published 27 February 2018

Academic Editor: Olga I. Giouleme

Copyright © 2018 Raja Chandra Chakinala et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Gastrointestinal (GI) tuberculosis (TB) is rare and can occur in the context of active pulmonary disease or as a primary infection with no pulmonary symptoms. It typically presents with vague abdominal symptoms, making it difficult to discern from alternative disease processes. Although the ileocecal region is the most commonly affected site, tuberculous enteritis can involve any aspect of the GI tract. To demonstrate the importance of maintaining a high clinical suspicion for the disease, we present a case of GI TB presenting as severe malnutrition and segmental colitis of the left colon.

1. Introduction

Extrapulmonary TB occurs in approximately 20% of TB cases in immunocompetent patients, with tuberculous enteritis accounting for approximately 1–3% of TB cases worldwide. The bacterium is thought to enter the GI tract via hematogenous spread from active pulmonary TB, from swallowing infected sputum or from ingestion of contaminated food products [1–4]. The ileocecal region is the most commonly affected site; however, any portion of the GI tract can be involved. Penetration of the GI mucosa leads to an inflammatory reaction with subsequent granuloma formation, mucosal ulceration, and necrosis. As the signs and symptoms of tuberculous enteritis are typically vague, the diagnosis is often difficult to make and requires a high index of suspicion [2, 3].

2. Case Report

A 36-year-old woman who emigrated from the Ecuador in 2002 presented to the emergency department with a one-year history of intermittent abdominal pain, diarrhea, and a 70-pound weight loss. She had no reported medical history, recent travel outside of the US, or known sick contacts. She appeared cachectic with diffuse muscle wasting and had a body mass index (BMI) of 14. Initial labs were notable for a white blood cell count 4.5k/mm$^3$, hemoglobin 8.8 g/dL, iron 17 mcg/dL, TIBC 47 mcg/dL, ferritin 123 μg/L, C-reactive protein 9.4 mg/dL, HIV negative, anti-nuclear antibody screen negative, anti-myeloperoxidase antibody negative, anti-perinuclear-3-antibody negative, and albumin 1.8 g/dL. Computed tomography (CT) of the chest and abdomen showed several right-sided pulmonary nodules, a large left-sided pleural effusion, and diffuse small and large bowel wall thickening with enlarged mesenteric lymph nodes. EGD revealed atrophic mucosa throughout the stomach and proximal duodenum. Esophageal, gastric, and duodenal biopsies were unrevealing. Colonoscopy showed circumferential friable ulcerated mucosa in the descending colon (Figure 3). The colonoscope was not advanced beyond this area. Biopsies showed necrotic tissue that was negative for...
Figure 1: CT demonstrating concentric bowel wall thickening in the region of the splenic flexure (blue arrow) with sparing of the region of the hepatic flexure (yellow arrow). The patient later developed colonic obstruction at both sites.

Figure 2: CT demonstrating distal luminal narrowing of bowel loops at both the splenic flexure (red arrow) and hepatic flexure (yellow arrow) with associated bowel wall thickening and edema.

Acid-fast bacilli (AFB). Extensive autoimmune and infectious workup was unrevealing. Mycobacterium tuberculosis (MTB) polymerase chain reaction from an induced sputum sample was positive. Stool culture was positive for acid-fast bacilli. Soon after antituberculin therapy was initiated she developed a large bowel obstruction with segmental colitis and strictures at multiple areas including the splenic and hepatic flexures as seen on CT scan (Figures 1 and 2), and she required a subtotal colectomy with end-ileostomy. Pathology of the resected colon showed confluent necrotizing granulomatous inflammation with transmural colonic wall involvement and stricture at the splenic flexure, as well as necrotizing granulomas of the surrounding lymph nodes, consistent with tuberculosis (Figures 4 and 5). There was no inflammation or pathology in the terminal ileum. She was continued on antituberculin therapy and was discharged to a rehabilitation facility with improvement in her symptoms and malnutrition.

3. Discussion

TB enteritis typically presents with vague clinical, radiographic, and histopathologic findings that mimic malignancy and inflammatory bowel disease [5]. Maintaining a high...
index of suspicion is key as the diagnosis is difficult to establish and one-year mortality rates are as high as 20 percent [2, 3, 6]. Diagnosing exclusive intestinal TB is difficult and often made by combining clinical suspicion, stool and tissue AFB staining, and tissue histology. A presumptive diagnosis of TB enteritis can also be made in the setting of active pulmonary TB together with clinical, endoscopic, and/or radiographic findings of intestinal TB.

Chronic abdominal pain is the most common symptom along with anorexia, fatigue, night sweats, diarrhea, or blood in the stool. Routine lab work is usually nonspecific showing mild anemia and elevated inflammatory markers. Mycobacterial cultures of the sputum or stool yield positive results approximately 50% of the time. In cases of intestinal TB, AFB and MTB culture positivity on intestinal biopsies is rarely found, in only 17% and 29% of cases, respectively, in one large study [7].

The most common radiographic finding is concentric mural thickening of the ileocecal region with or without proximal intestinal dilatation [5, 8, 9]. The ileocecal region accounts for almost 64% of cases of GI TB. The affinity of MTB for this site may be due to relative stasis and abundant lymphoid tissue in this area. As in the above reported case, bowel obstruction is the most common complication. Our patient had segmental colitis with involvement of the splenic flexure, an atypical presentation of GI TB.

Circumferential ulcers surrounded by inflamed mucosa are common colonoscopic findings in GI TB. Classically reported histopathologic findings include large, confluent granulomas with caseating necrosis; however, caseating granulomas and acid-fast bacilli are found in less than 33% of cases. In a significant number of cases (44.5%), granulomas were seen in a submucosal location, and the predominant type of inflammation seen in the lamina propria was lymphoplasmacytic [1]. Antimicrobial therapy (RIPE: rifampicin, isoniazid, pyrazamide, and ethambutol for two months followed by rifampicin plus isoniazid for an additional six months) remains the mainstay of the treatment for GI TB; however, surgical or endoscopic intervention is often required in cases complicated by perforation or obstruction [10]. In one study, colonoscopic follow-up after 2-3 months of anti-TB therapy showed complete healing of the ulcers and erosions [11, 12].

Our immunocompetent patient with disseminated TB presenting with exclusive GI symptoms was found to have left-sided and later right-sided colon involvement leading to bowel obstruction. This is an atypical manifestation of tuberculosis with a rare clinical presentation. It is essential to maintain a broad differential diagnosis when evaluating a patient with vague symptoms and nonspecific test results, while paying close attention to patient demographics and risk factors.

Disclosure

The abstract of this case report was presented as a poster at World Congress of Gastroenterology at ACG 2017 Conference in Orlando, Florida.

Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

Authors’ Contributions

Brad Dworkin is the article guarantor.

References

[1] P. B. Tripathi and A. D. Amarapurkar, “Morphological spectrum of gastrointestinal tuberculosis,” *Trop Gastroenterol*, vol. 30, no. 1, pp. 35–39, 2009.
[2] J. B. Marshall, “Tuberculosis of the gastrointestinal tract and peritoneum,” *The American Journal of Gastroenterology*, vol. 88, no. 7, pp. 989–999, 1993.
[3] K. D. Horvath and R. L. Whelan, “Intestinal tuberculosis: return of an old disease,” *American Journal of Gastroenterology*, vol. 93, no. 5, pp. 692–696, 1998.
[4] U. Debi, V. Ravisankar, K. K. Prasad, S. K. Sinha, and A. K. Sharma, “Abdominal tuberculosis of the gastrointestinal tract: revisited,” *World Journal of Gastroenterology*, vol. 20, no. 40, pp. 14831–14840, 2014.
[5] P. Lakhe, A. Khalife, and J. Pandya, “Ileocecal and transverse colonic tuberculosis mimicking colonic malignancy – A case report,” *International Journal of Surgery Case Reports*, vol. 36, pp. 4–7, 2017.
[6] P. Y. Lin, J. Y. Wang, P. R. Hsueh et al., “Lower gastrointestinal tract tuberculosis: an important but neglected disease,” *International Journal of Colorectal Disease*, vol. 24, no. 10, pp. 1175–1180, 2009.
[7] Y. J. Lee, S.-K. Yang, S. J. Myung et al., “The usefulness of colonoscopic biopsy in the diagnosis of intestinal tuberculosis and pattern of concomitant extra-intestinal tuberculosis,” *The Korean journal of gastroenterology*, vol. 44, no. 3, pp. 153–159, 2004.
[8] E. J. Balthazar, R. Gordon, and D. Hulnick, “Ileoceleal tuberculosis: CT and radiologic evaluation,” *American Journal of Roentgenology*, vol. 154, no. 3, pp. 499–503, 1990.
[9] M. A. Almadi, S. Ghosh, and A. M. Aljebreen, “Differentiating intestinal tuberculosis from crohn’s disease: A diagnostic challenge,” *American Journal of Gastroenterology*, vol. 104, no. 4, pp. 1003–1012, 2009.
[10] S. Kedia, R. Sharma, V. Sreenivas et al., “Accuracy of computed tomographic features in differentiating intestinal tuberculosis from Crohn's disease: A systematic review with meta-analysis,” *Intestinal Research*, vol. 15, no. 2, pp. 149–159, 2017.
[11] S. Shah, V. Thomas, M. Mathan et al., “Colonoscopic study of 50 patients with colonic tuberculosis,” *Gut*, vol. 33, no. 3, pp. 347–351, 1992.
[12] J. F. Alvaraes, H. Devarbhavi, P. Makhija, S. Rao, and R. Kottoor, “Clinical, colonoscopic, and histological profile of colonic tuberculosis in a tertiary hospital,” *Endoscopy*, vol. 37, no. 4, pp. 351–356, 2005.
Submit your manuscripts at
www.hindawi.com