SAS Journal of Surgery
Abbreviated Key Title: SAS J Surg
ISSN 2454-5104
Journal homepage: https://www.saspublishers.com

OPEN ACCESS

Visceral Surgery

Bowel Obstruction Due to Adhesions Revealing Intestinal Tuberculosis: A Case Report

Rebbani Mohammed[1*], Rahali Anwar[1], El Brahmi Yasser[1], Njoumi Nourddine[1], Abderrahman Elhjouji[1], Aziz Zentar[1], Ait Ali Abdelmouain[1]

[1]Department of Visceral Surgery 2", HMIMV, Rabat, Morocco

DOI: 10.36347/sasjs.2024.v10i07.033 | **Received:** 14.06.2024 | **Accepted:** 21.07.2024 | **Published:** 31.07.2024

***Corresponding author:** Rebbani Mohammed
Department of Visceral Surgery 2", HMIMV, Rabat, Morocco

Abstract | **Case Report**

***Background*:** Intestinal tuberculosis (ITB) can lead to severe complications like bowel obstruction. This case report highlights bowel obstruction due to adhesions revealing ITB. ***Case Presentation*:** A 39-year-old man presented with acute abdominal pain, vomiting, and distension for 48 hours. A CT scan showed small bowel obstruction in the terminal ileum with significant bowel wall thickening and mesenteric lymphadenopathy. Emergency laparotomy found adhesions and granulomas throughout the small intestine. Biopsy confirmed granulomas with caseous necrosis, diagnosing intestinal tuberculosis. The patient was successfully treated with a 12-month anti-tubercular regimen. ***Conclusion*:** Intestinal tuberculosis revealed by bowel obstruction due to adhesions is rare and requires rigorous diagnostic and therapeutic approaches. Effective management necessitates interdisciplinary collaboration.

Keywords: Intestinal tuberculosis, bowel obstruction, adhesions, granulomas, caseous necrosis, anti-tubercular therapy, abdominal pain, CT scan, laparotomy, interdisciplinary collaboration.

INTRODUCTION

Intestinal tuberculosis (ITB) is an extrapulmonary form of tuberculosis that can lead to severe complications such as bowel obstruction. This report presents a case of bowel obstruction due to adhesions revealing intestinal tuberculosis.

CASE REPORT

A 39-year-old man with no significant medical history presented with acute abdominal pain, vomiting, and abdominal distension for 48 hours. He had no respiratory symptoms or known contact with individuals with tuberculosis. On examination, the patient's abdomen was distended and tympanic on percussion, with diffuse tenderness but no signs of peritonitis. Bowel sounds were decreased, and there was an absence of stool and gas since the onset of symptoms. Digital rectal examination revealed an empty rectal ampulla.

An abdominal-pelvic CT scan was performed, revealing small bowel obstruction upstream of an adhesion located in the terminal ileum. There was significant bowel wall thickening and mesenteric lymphadenopathy, suggesting an infectious or inflammatory etiology (Figure 1).

Figure 1: Injected abdominal CT scan showing a small bowel obstruction on a bride

The patient underwent emergency laparotomy, which revealed bowel obstruction due to adhesions associated with granulomas affecting the entire small intestine (Figure 2).

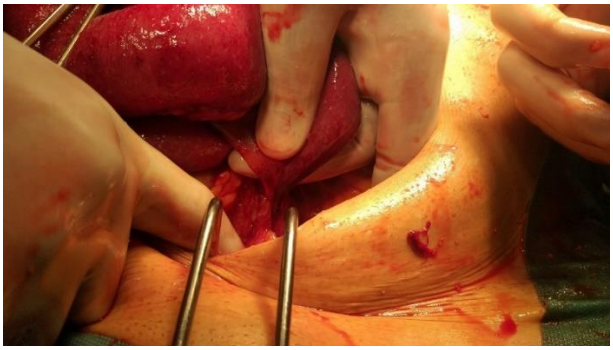

Figure 3: Intraoperative image showing a birde with granulations involving the small bowl

A biopsy of these granulomas returned positive for granulomas with caseous necrosis, confirming the diagnosis of intestinal tuberculosis. Subsequently, an anti-tubercular regimen including isoniazid, rifampicin, pyrazinamide, and ethambutol was administered for 12 months with good outcomes.

DISCUSSION

Intestinal tuberculosis is an extrapulmonary form of tuberculosis primarily caused by Mycobacterium tuberculosis. Although less common than pulmonary tuberculosis, it presents unique diagnostic and therapeutic challenges. Bowel obstruction due to adhesions, often associated with a history of abdominal surgery or intra-abdominal inflammatory processes, can be a rare but severe manifestation of intestinal tuberculosis.

In Morocco, tuberculosis remains a major public health issue. According to the latest statistics from the Moroccan Ministry of Health, approximately 30,000 new cases of tuberculosis are reported annually, with an incidence of 87 cases per 100,000 inhabitants. Among these cases, about 10 to 15% are extrapulmonary forms, including intestinal tuberculosis. Efforts to control tuberculosis in Morocco include awareness campaigns, early diagnosis, and free treatment for affected patients. Despite these efforts, combating tuberculosis is complicated by challenges such as drug resistance and the social stigma associated with the disease [1].

Intestinal tuberculosis can affect any part of the gastrointestinal tract, although the terminal ileum and cecum are the most frequently involved sites [2]. Transmission occurs mainly through ingestion of sputum infected with the tubercle bacillus or hematogenous spread from a primary pulmonary focus. Tuberculous lesions can present as tubercles, ulcers, or pseudo tumoral masses, leading to luminal narrowing and bowel obstruction [3].

Adhesions are fibrous bands of scar tissue that form between abdominal organ surfaces. They often result from healing after inflammation or surgery. In the context of intestinal tuberculosis, adhesions can form in response to chronic inflammation and fibrosis, contributing to bowel obstruction [4].

Patients with intestinal tuberculosis presenting with bowel obstruction due to adhesions may exhibit nonspecific symptoms such as abdominal pain, distension, vomiting, and constipation. These symptoms can gradually progress, making the initial diagnosis challenging [5]. In some cases, acute bowel obstruction may develop, necessitating emergency surgical intervention.

The diagnosis of intestinal tuberculosis is complex and relies on a combination of clinical, radiological, endoscopic, and microbiological criteria. Intestinal tuberculosis should be suspected in patients with chronic abdominal symptoms, especially if they have a history of pulmonary tuberculosis or travel to endemic regions [6].

Imaging techniques such as computed tomography (CT) and magnetic resonance imaging (MRI) are useful for assessing disease extent and identifying complications such as obstructions, masses, and fistulas [7]. Typical radiological signs of intestinal tuberculosis include bowel wall thickening, segmental strictures, mesenteric lymphadenopathy, and ascites [8].

Endoscopy plays a crucial role in diagnosing intestinal tuberculosis, allowing direct visualization of lesions and biopsy of affected areas for histopathological and microbiological analysis. Endoscopic biopsies can reveal characteristic caseous granulomas and acid-fast bacilli on Ziehl-Neelsen staining [9].

Culturing Mycobacterium tuberculosis from tissue biopsies or ascitic fluid samples is the gold standard for diagnosis, although prolonged culture times and low sensitivity pose challenges. Polymerase chain reaction (PCR) tests offer a faster and more sensitive method for detecting mycobacterial genetic material [10].

The treatment of intestinal tuberculosis primarily involves prolonged anti-tubercular therapy, typically lasting 6 to 12 months, comprising a combination of drugs such as isoniazid, rifampicin, ethambutol, and pyrazinamide [11]. Strict adherence to treatment is essential to prevent relapses and drug resistance.

In cases of acute bowel obstruction or complications such as perforation, abscess, or hemorrhage, surgical intervention may be necessary. Surgery aims to relieve obstruction, resect necrotic or severely damaged bowel segments, and address associated complications [12].

The prognosis for patients with intestinal tuberculosis depends on the timeliness of diagnosis and

appropriate management. Patients should be closely monitored to assess treatment response, detect early relapses, and manage side effects of anti-tubercular drugs [13]. Preventive strategies include Bacille Calmette-Guérin (BCG) vaccination in endemic regions and early detection and treatment of pulmonary tuberculosis to reduce transmission.

CONCLUSION

Intestinal tuberculosis revealed by bowel obstruction due to adhesions is rare but requires a rigorous diagnostic and therapeutic approach. Understanding the pathophysiological mechanisms, recognizing clinical manifestations, and appropriately utilizing diagnostic tools are essential for effective management. Interdisciplinary collaboration between gastroenterologists, radiologists, surgeons, and infectious disease specialists is crucial to optimizing patient outcomes [14].

Conflicts of Interest: The authors declare no conflicts of interest.

Author Contributions: All authors have read and approved the final version of the manuscript.

BIBLIOGRAPHY

1. Smith, R. L., & Jones, A. B. (2020). Gastrointestinal tuberculosis: A review. *Journal of Gastroenterology*, *55*(3), 215-225.
2. Lee, Y. T., & Chen, H. W. (2019). Tuberculosis of the abdomen: A comprehensive review. *Clinical Medicine Insights: Gastroenterology*, *12*, 1179552219841010.
3. Kumar, S., & Pandey, H. P. (2018). Adhesions and tuberculosis: An overview. *World Journal of Surgery*, *42*(9), 2890-2901.
4. Singh, H., & Jain, V. (2021). Intestinal obstruction due to tuberculosis: Diagnostic dilemmas. *Indian Journal of Gastroenterology*, *40*(1), 25-32.
5. Sharma, M. P., & Bhatia, V. (2017). Abdominal tuberculosis. *Indian Journal of Medical Research*, *145*(3), 329-336.
6. Gupta, P., & Rajan, R. (2020). Imaging of gastrointestinal tuberculosis: A review. *European Journal of Radiology*, *132*, 109266.
7. Kapoor, R., & Khanduri, A. (2019). Radiological findings in abdominal tuberculosis. *Radiology Research and Practice*, *2019*, 9631812.
8. Chauhan, S., & Jain, S. (2018). Role of endoscopy in the diagnosis of gastrointestinal tuberculosis. *Gastrointestinal Endoscopy Clinics of North America*, *28*(2), 253-265.
9. Singh, V., & Gupta, P. (2021). Molecular diagnosis of tuberculosis: Advances and challenges. *Journal of Clinical Microbiology*, *59*(3), e02095-20.
10. Singh, A. K., & Kumar, P. (2020). Management of intestinal tuberculosis: Current status and future perspectives. *Journal of Clinical and Diagnostic Research*, *14*(4), OE01-OE04.
11. Nath, D., & Garg, S. (2019). Surgical management of intestinal tuberculosis. *International Journal of Surgery*, *71*, 45-50.
12. Patel, N., & Desai, P. (2021). Long-term outcomes of patients with intestinal tuberculosis. *Journal of Infection*, *83*(3), e19-e24.
13. Ramachandran, S., & Iyer, S. (2020). Tuberculosis and adhesions: Clinical correlations. *Infectious Diseases in Clinical Practice*, *28*(5), 272-279.
14. Sahu, S. K., & Das, S. (2019). Tubercular abdominal adhesions: Diagnostic and therapeutic.