

Evaluating Intestinal Blockage Caused by Tuberculosis

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Abstract

Introduction: Intestinal tuberculosis-related bowel blockage has been observed to be more common. This study aimed to identify the factors that led to these patients' outcomes, and we need to understand the clinicopathological features, surgical strategy, and outcomes of tuberculous intestinal obstruction in our local setting.

Methodology: This 2-year retrospective analysis included 46 patients (40 men, 6 women), or 4.5% of intestinal mechanical obstructions. The clinical picture of more than 80% of the patients included lower small intestine blockage, and 90.5% had advanced pulmonary tuberculosis.

Results: The ileocaecal area was the site of obstruction in 54.6% of cases. Intestinal TB in its hypertrophic form was the predominant lesion-producing obstruction (86.4%). Due to the lack of distinct symptoms and indicators, intestinal TB was difficult to diagnose as a cause of obstruction.

Conclusion: Leocolostomies were frequently employed (68.2%) in terms of management. However, the long-term outcomes could have been better. One drawback was the blind loop phenomenon. The safest and most efficient procedure can be resection.

Keywords: *Mycobacterium tuberculosis, gastrointestinal disorders, intestinal tuberculosis,*

ESR

Introduction

Tuberculosis causes are less common, but they occur frequently during the disease, whether or not it is treated. It is simple to confirm intestinal blockage, but because intestinal

tuberculosis lacks recognizable symptoms and indicators, it is frequently overlooked as a possible cause. When a blockage occurs, managing intestinal TB is very challenging and debatable [1].

A widespread and severe health issue worldwide is tuberculosis (TB), a contagious illness from *Mycobacterium tuberculosis*. Three million people die from this illness yearly, impacting approximately one-third of the global community [2, 3]. For these reasons- poor sanitation, misinformation, overcrowding, malnourishment, and coexisting diseases like AIDS- TB is the leading cause of death in developing countries [4].

Direct transmission from adjacent organs, hematogenous spread from an initial lung focus that reactivates later or miliary tuberculosis, lymphatic dissemination from infected nodes, ingestion of bacilli from contaminated sources such as milk products or sputum, and ingestion of bacilli from sources such as those listed above are the modes of infection for intestinal tuberculosis [5, 6].

The three main kinds of intestinal tuberculosis are fibrous stricturing, ulcerative, hypertrophic, or ulcerohypertrophic. The illness can mimic several gastrointestinal disorders, including colon cancer, inflammatory bowel disease, and other gastrointestinal disorders [7].

Aim of the Study

The objectives of this study were to characterize certain pathological and clinical features, evaluate the role of surgery, and suggest the best course of action for managing this condition.

Methodology

All patients with tuberculosis-related intestinal obstruction who were hospitalized at MKCG Medical College, Odisha, India over a two-year period were included in this study. The following criteria were used to choose the patients:

- (1) The first group selected was patients with intestinal obstruction syndrome (as demonstrated by operational findings or clinical-radiological features)
- (2) Patients who met one of the requirements: Histological evidence of tubercles with caseation necrosis and characteristic Mycobacterium tuberculosis bacilli stained with acid-fast stain in the lesion

We replaced criterion (2) with a positive response to antituberculosis medication for patients who received nonoperative care. These patients' case records were retrospectively examined for short- and long-term results, surgical findings, clinical presentation, and paraclinical data. Patients with intestinal tuberculosis that had their diagnosis verified by colonoscopic biopsies showing caseating granulomas, AFB on smear, or AFB on culture, as well as surgical patients who underwent surgical resection with a histological confirmation, were considered confirmed patients.

TB was identified using the removed specimen. Patients with presumed intestinal TB included those whose colonoscopy. Biopsies revealed either nongranulomatous or granulomatous chronic colon inflammation or ileum, extraintestinal tuberculosis present or absent, and antituberculous treatment response.

Results

During this time, there were 1026 cases of intestinal blockage. TB caused intestinal obstruction in 46 cases (4.5%). Intestinal blockage caused by tuberculosis accounted for 50% of the 92 cases of intestinal TB that needed surgery within the same time frame. 95.6% of the patients were older than 30. The ratio of females to males was 7:1 (Table 1).

Table 1- Age distribution in 46 patients

<i>Age</i>	<i>Number of cases</i>
21-30	2

31-40	12
41-50	10
51-60	16
61-70	6

Fourteen patients had previously contracted tuberculosis, including six cases of pulmonary, four cases of pulmonary and intestinal, two of intestinal, and two of peritoneal. Before being admitted, twenty-four additional individuals were unaware they were suffering from pulmonary tuberculosis. Four patients had never experienced TB before, and four others had never had a chest X-ray. Eight patients experienced persistent diarrhoea- only six experienced weight loss and a nightly moderate fever.

The median time between the onset and admission was three days; the range was one day to 7 days. Most cases had a history of colicky stomach discomfort, vomiting, and abdominal distension. 82.6% had noticeable cachexia (Table 2).

Table 2- Clinical features

<i>Symptoms and signs</i>	<i>Number of cases (%)</i>
Vomiting	69.6
Failure to pass flatus	56.5
Abdominal distension	82.6
Colicky abdominal pain	74
Marked cachexia	82.6

Mass in the right lower quadrant	4.3
Mild fever	52.2

38 individuals (90.5%) of 42 who underwent chest X-rays had advanced pulmonary tuberculosis. According to an abdominal plain film, 40 out of 46 patients (87%) had mechanical intestinal obstruction- most of the instances involved obstruction in the small intestine's lower portion. In 42 out of 46 individuals (91.3%), the erythrocyte sedimentation rate (ESR) was increased.

Eighty-six percent of cases had macroscopic signs of the hypertrophic form of intestinal tuberculosis (tumor-like mass or thicker wall). In one instance, the small intestine had 12 strictures. In another instance, the ascending colon and distal small intestine were shortened by 1 m.

Conservative management was only effective for two patients. In the other 44 instances, ileocolostomies were performed in 30 cases (68.2%), small bowel segmental resection in 12 instances, and two cases of right hemicolectomy. Emergency laparotomies were conducted following the patient's resuscitation with intravenous hydration, nasogastric suction, and broad-spectrum antibiotics. All the other patients, except for four, were treated with antituberculosis medication. Early outcomes were positive. No patient passed away. Wound infections affected four people. For follow-up, we were unable to reach 14 patients.

Following up on 22 ileocolostomy cases revealed the following: blind loop syndrome in six cases (four of which required reoperation), suspicion of blind loop syndrome in four cases, and return of intestinal TB in four cases. As a result, it was determined that at least 10 instances (45.4%) had poor long-term outcomes. Eight cases (36.3%) with good long-term outcomes were identified, but four had pulmonary TB that returned. After undergoing

resection, four of the four patients were observed and found to be relatively stable. and the other two patients experienced a significant relapse of intestinal tuberculosis due to their refusal to receive postoperative antituberculosis therapy.

Discussion

Between 12% and 60% of cases of intestinal blockage are caused by tuberculosis [1]. In India, various kinds of abdominal TB account for between 3% and 20% of all intestinal blockages [1, 6]. In our analysis, there were 4.5% cases of intestinal blockage brought on by tuberculosis. The most common intestinal TB complication, according to Paustian and Marshall [2], Bhansali [4], Das and Shukla [5], and Paustian and Bockus [6], is intestinal obstruction.

Numerous experts claim that between 52% and 85% of cases of intestinal TB occur in the ileocaecal area [6, 7]. The most prevalent variety is hypertrophic, which might clog the intestine because it tends to narrow the lumen. Our findings agreed with additional research- It's also possible for secondary lesions to grow at different locations in the stomach and potentially block later, in addition to the original obstructive lesion. Choosing the length of the intestine to resect or the site of the anastomosis to the small bowel might occasionally be challenging [7].

The non-specific accurate diagnosis is difficult due to intestinal tuberculosis symptoms and indications and intestinal obstruction caused by tuberculosis. Hoon et al [9]. reported on the clinical diagnosis of abdominal TB. a 34% accuracy rate, while Das and Shukla [5] reported a 50% accuracy rate. Only 54.5% of our cases received an accurate clinical diagnosis. It was not difficult to determine the existence of intestinal obstruction when it occurred based on clinical and radiographic evidence. Still, it was more challenging to determine the etiology of tuberculosis, particularly in individuals who had no prior history of the disease or whose

chest X-ray came out normal. Diarrhea, fever, and malaise is not common in medical history. It is not advisable to use the tuberculin test in an emergency.

The history revealed colicky abdominal pain, which could indicate a partial intestinal obstruction but can also indicate intestinal obstruction from other causes, particularly malignancy. Abdominal distension rarely makes a mass in the right lower quadrant noticeable. Feces cannot be tested for microorganisms when there is an intestinal blockage. Apart from high ESR and abnormal chest X-rays, there is no value in doing laboratory testing. Understanding TB is essential for an early diagnosis. When dealing with patients with intestinal blockage of unknown origin, surgeons must keep tuberculosis in mind [8]. In light of our expertise, we draw attention to the following typical diagnostic traits:

Clinical manifestation of a patient who has never had a laparotomy and who is experiencing a low-intestinal blockage. A partial intestinal obstruction may have been the cause of the patient's symptoms weeks or months prior. Any prior treatment for pulmonary or intestinal tuberculosis or medical history of tuberculosis.

Advanced pulmonary tuberculosis is visible on chest radiography at admission, and patients are frequently severely underweight or highly emaciated. Intestinal obstruction is confirmed by abdominal plain film, usually with low occlusion in the small intestine. ESR goes up.

It is debatable how to treat intestinal blockage brought on by tuberculosis. Bhansali [4] suggested watchful and conservative care with patient review every six hours. Elective surgery is done after two to four weeks if the obstruction does clear up. According to Sherman et al. [10], surgery should only be performed if a blockage continues because 50% of their cases improved after medical supervision. 39% of the abdominal pain reflects that in our cases, the colons still contained gas and feces. This implies there was still room for conservative management because the obstruction was not entirely blocked.

However, several writers recommend surgical therapy because the blocked lesion is frequently hypertrophic [10, 11]. Many authors claim that this kind does not react well to medical treatment [12, 13]. Another advantage of surgical intervention is the availability of specimens for accurate pathological diagnosis.

Butler [11] continued to advise an ileocolostomy for ileocaecal blockage brought on by TB as late as 1953. Many surgeons have chosen to do this straightforward operation. We frequently employed this technique because we believed undernourished individuals could not withstand a more invasive surgery. With this straightforward treatment, every patient healed and experienced no early problems.

Ileocaecal tuberculous lesions were proposed for excision by Rankine [12], and Recio [13], and they advised against doing a bypass procedure unless it was essential. Right hemicolectomy was found for lesions affecting the terminal region of the ileum and caecum. It has been found by Addison [7], Abrams and Holden [14], Vanderpool and O'Leary [15] and Awasthi et al [16] to be safe and efficacious. Excision of the stenosed area and associated tuberculous mass is preferred if other intestinal regions are implicated.

Conclusion

It is rare for tuberculosis to cause intestinal blockage. In the ileocaecal region, it frequently happens. The most frequent reason for blockage is hypertrophic intestinal TB. The clinical manifestation of low-intestinal obstruction, which affects individuals with advanced pulmonary tuberculosis, is frequently used to make the diagnosis.

These patients typically have severe malnutrition; abdomen plain films show intestinal blockage, and the ESR increases. Surgery aids in clearing obstructions and, after a pathological examination, offers a conclusive diagnosis. Resection might be the most effective and safest procedure for both short- and long-term outcomes. However, ileocolostomy is straightforward and appropriate in acute cases.

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