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An Unusual Presentation of Ileocecal Tuberculosis as Intussusception in an Adult: A Report of a Rare Case

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Abstract

Intussusception is a rare occurrence among adults and accounts for a small percentage of cases of bowel obstruction in adults. Unlike intussusception in children, in whom a lead point is often absent, many cases of intussusception in adults can be attributed to an identifiable pathological lead point, frequently in the form of a mass or neoplasm, an inflammatory process, or an infectious condition. A rare but important cause of adult intussusception is intestinal tuberculosis, particularly in areas of the world where this disease is prevalent. We present the case of a 46-year-old male patient who had abdominal pain, weight loss, decreased appetite, and a sensation of abdominal fullness. An abdominal CT scan with contrast demonstrated ileocecal intussusception along with circumferential enlargement of the terminal ileum and enlarged mesenteric lymph nodes. The patient underwent an exploratory laparotomy followed by right hemicolectomy and ileotransverse anastomosis. Histopathological evaluation of the resected tissue demonstrated caseating granulomatous inflammation and Langhans giant cells, both of which were highly suggestive of ileocecal tuberculosis. Following surgical resection, the patient received treatment with antituberculous medications, and at follow-up, he had a marked improvement in his condition. This case highlights the difficulty that can be encountered in diagnosing ileocecal tuberculosis presenting as adult intussusception and may prompt physicians in regions with a high prevalence of tuberculosis to consider tuberculosis in their differential diagnosis when evaluating patients for ileocecal masses.

Categories: Medical Education, Medical Simulation, Gastroenterology
Keywords: adult intussusception, caseating granuloma, gastrointestinal tuberculosis, ileocecal tuberculosis, intestinal tuberculosis, right hemicolectomy

Introduction

Intussusception occurs when one segment of the intestine invaginates into an adjacent segment, potentially causing obstruction, venous congestion, ischemia, or perforation. In adults, it is often associated with a pathological lead point, such as a tumor or inflammatory lesion. Clinical manifestations include abdominal pain, nausea, vomiting, abdominal distension, and altered bowel habits. It may occur in the small or large intestine and is classified as enteroenteric, ileocolic, ileocecal, or colocolic according to the segments involved [1,2].

Intussusception is predominantly a pediatric condition and is relatively uncommon in adults, accounting for 1% to 5% of all cases of intestinal obstruction and approximately 5% of all diagnosed intussusceptions [3]. In contrast to most cases of intussusception in children, in whom a specific cause cannot be determined (idiopathic), intussusception in adults may be caused by a lead point, such as a polyp, benign tumor, malignancy, Meckel's diverticulum, or lesion related to infection [4].

Intestinal tuberculosis is an important nonpulmonary form of tuberculosis, with the ileocecal region being the most commonly affected because of its large quantity of lymphoid tissue, long mucosal transit time, and increased absorptive capacity of the intestinal lumen [5]. The clinical presentation of tuberculosis infection in the intestinal tract is often nonspecific and may therefore be difficult to differentiate from other diseases, including Crohn's disease, colorectal malignancy, or other forms of inflammatory bowel disease [6].

According to the WHO Global Tuberculosis Report 2025, an estimated 10.7 million people developed TB worldwide in 2024, with India accounting for the largest share of cases [7]. Intestinal TB is an extrapulmonary manifestation that most frequently affects the ileocecal region, which accounts for approximately 44-84% of gastrointestinal TB cases in published series. This predilection is attributed to abundant lymphoid tissue and relative intestinal stasis. Common manifestations include abdominal pain, fever, weight loss, and altered bowel habits; complications include strictures, obstruction, perforation, and, rarely, intussusception [8,9].

The incidence of ileocecal tuberculosis causing intussusception in an adult is very low. Early diagnosis is

critical because delayed diagnosis can result in intestinal obstruction, intestinal perforation, or unnecessary major surgical procedures. We present a unique case of a 52-year-old male patient with ileocecal tuberculosis presenting with ileocecal intussusception that was treated successfully with surgery and antituberculous medications.

Case Presentation

A 46-year-old male patient presented with a three-week history of symptoms associated with intestinal obstruction, including progressively worsening, dull, aching pain in his lower abdominal region. The pain was mild in intensity, did not radiate, and worsened after eating but improved with rest. In addition, he had a three-week history of anorexia, ongoing weight loss, and abdominal distention. No fever, vomiting, or changes in bowel habits were reported. On physical examination, the patient was afebrile and hemodynamically stable. Examination of the abdomen revealed mild suprapubic tenderness without guarding, rigidity, organomegaly, or a palpable mass. The patient belonged to a middle-income household with overcrowded housing. There was no reported history of contact with a person diagnosed with tuberculosis. Previous tuberculosis and associated constitutional symptoms, including chronic cough, fever, night sweats, and weight loss, were not documented. All laboratory investigations were unremarkable, as shown in Table *1*.

Investigation	Patient Result	Reference Range (Adult Male)	Interpretation
Hemoglobin	14.5 g/dL	13.0-17.0 g/dL	Normal
Total leukocyte count (TLC)	7,200 cells/μL	4,000-11,000 cells/μL	Normal
Platelet count	260,000 /μL	150,000-400,000 /μL	Normal
Erythrocyte sedimentation rate (ESR)	10 mm/hr	0-15 mm/hr	Normal
C-reactive protein (CRP)	3.1 mg/L	< 5.0 mg/L	Normal
Serum creatinine	0.9 mg/dL	0.7-1.3 mg/dL	Normal
Alanine aminotransferase (ALT)	24 U/L	7-56 U/L	Normal
Aspartate aminotransferase (AST)	22 U/L	10-40 U/L	Normal
Serum sodium	139 mEq/L	135-145 mEq/L	Normal
Serum potassium	4.2 mEq/L	3.5-5.0 mEq/L	Normal
HIV serology	Non-reactive	Non-reactive	Non-reactive

TABLE 1: Patient's laboratory investigations

Initial chest and abdominal radiographs were normal. Colonoscopy with ileoscopy was performed to evaluate the ileocecal region and terminal ileum for a potential pathological lead point. Contrast-enhanced CT (CECT) of the abdomen demonstrated circumferential asymmetric wall thickening of the distal ileum with luminal narrowing and proximal dilatation of the bowel (Figure *1*). The terminal part of the ileum was thickened and telescoped into the cecum, consistent with ileocecal intussusception. Additionally, mesenteric lymphadenopathy and pericecal fat stranding were present. The presence of tree-in-bud nodules at the lung bases raised the possibility of active pulmonary tuberculosis (Figure *2*). In view of the associated intestinal obstruction and the need for definitive evaluation and management, operative intervention was undertaken.



FIGURE 1: Contrast-enhanced CT abdomen demonstrating ileocecal intussusception with thickened terminal ileum.

Red arrow identifies the ileocecal intussusception. Yellow arrow points to thickened terminal ileum.

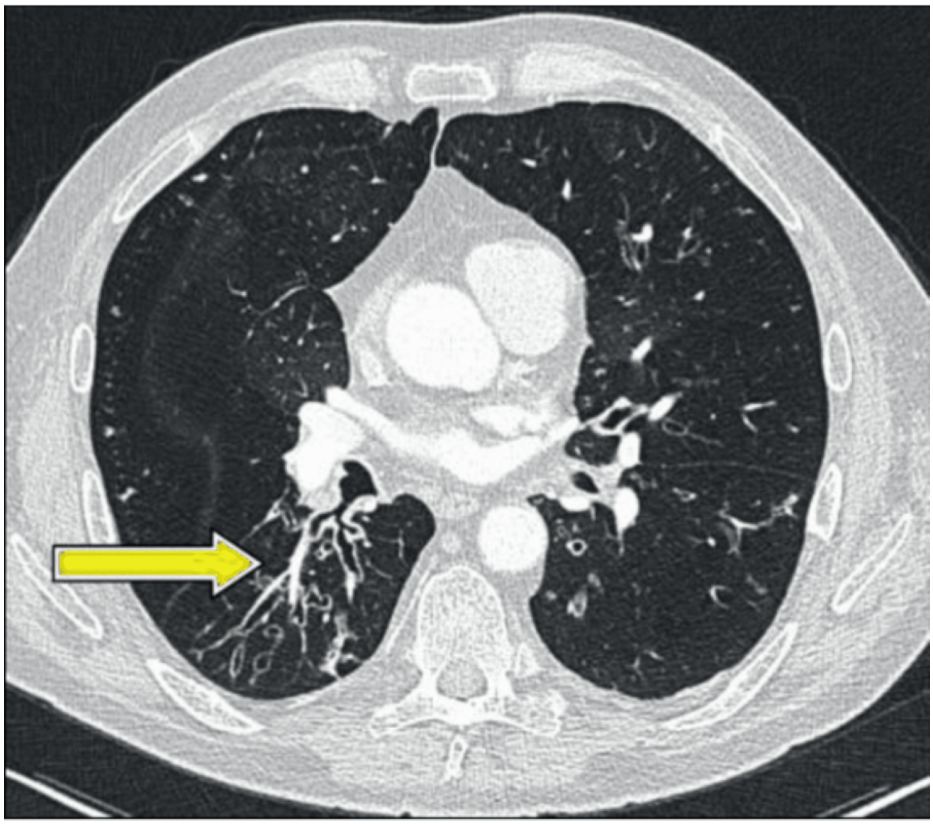


FIGURE 2: Computed tomography of the chest showing tree-in-bud nodules in the right lower lobe (yellow arrow), raising suspicion for active pulmonary tuberculosis.

Several pale-colored nodules were discovered on the peritoneum during exploratory laparoscopy, along with enlarged proximal bowel loops and a large ileocecal mass. The mass caused the ileocecal loop to intussuscept. Additionally, during surgery, a pulled-up cecum and a Meckel's diverticulum were found.

After careful examination of the patient's bowel, it was determined that a right hemicolectomy with an ileotransverse anastomosis was necessary. Approximately 15 cm of terminal ileum, one-third of the transverse colon, and the Meckel's diverticulum were resected (Figure *3*).



FIGURE 3: Resected specimen showing thickened ileocecal segment with intussusception.

Numerous caseating granulomas containing epithelioid histiocytes and Langhans giant cells, with a surrounding infiltrate of lymphocytes, were identified in this patient. These findings are consistent with tuberculous inflammation and rule out malignancy (Figure *4*).

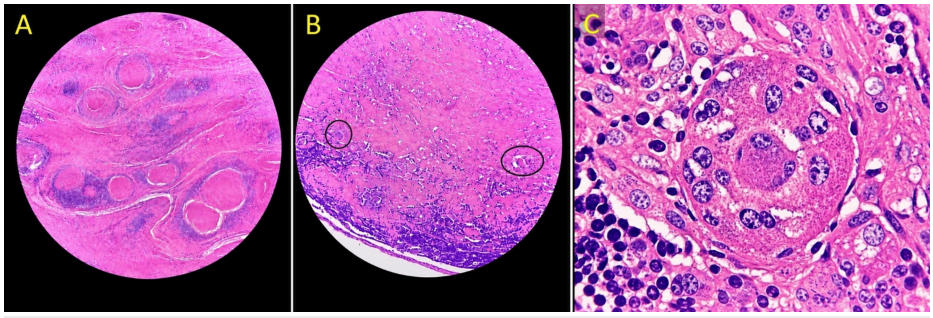


FIGURE 4: Histopathological findings supporting tuberculosis.

(A) Histopathological section demonstrating confluent necrotizing granulomatous inflammation. (B) Histopathological section demonstrating Langhans-type giant cells (circles) within granulomatous inflammation with surrounding inflammatory infiltrate. (C) Higher-magnification view highlighting the Langhans-type giant cells (encircled in panel B) surrounded by granulomatous inflammation and inflammatory infiltrate.

The postoperative recovery was uneventful, and the patient was discharged from the hospital 10 days after surgery, as planned. He was started on antituberculous treatment, which consisted of isoniazid, rifampicin, pyrazinamide, and ethambutol (HRZE). Treatment consisted of a two-month intensive phase (HRZE) followed by a four-month continuation phase (HR). When the patient returned three months later, he demonstrated marked improvement in his clinical symptoms, including weight gain and increased appetite.

Discussion

Adult and pediatric intussusception differ in their causes, clinical presentations, and management. Almost all adults with intussusception have an identifiable cause, usually some type of bowel cancer when the intussusception occurs in the colon [10]. Tuberculosis is one of the less common inflammatory and infectious causes of adult intussusception but should be considered in endemic areas. The ileocecal region is most commonly affected by gastrointestinal tuberculosis because of its increased physiological stasis, abundance of lymphoid tissue, and increased absorptive capacity [11]. Tuberculous lesions can cause changes to the bowel, such as ulcerations, scarring/fibrosis, thickening of the bowel wall, and overgrowth of the bowel muscles, making the affected bowel segment a potential lead point for intussusception [12]. The signs and symptoms associated with adult intussusception tend to be nonspecific, including abdominal pain, fever, weight loss, loss of appetite, changes in bowel habits, and signs suggesting intestinal obstruction. Because these findings are similar to those associated with Crohn's disease and bowel cancer, the diagnosis of intussusception may be delayed [9].

Radiological imaging (particularly abdominal CECT) is important in diagnosing adult intussusception. The characteristic findings of intestinal tuberculosis on imaging studies include asymmetric bowel wall thickening, necrotic lymph nodes, ascites, and a displaced cecum. The classic "target sign" or "bowel-within-bowel" sign on imaging may indicate intussusception; however, X-rays and other imaging modalities cannot reliably determine whether a patient has bowel cancer [13]. Histopathological examination of the intestines is important in identifying the underlying cause of adult intussusception. The presence of caseating granulomas and Langhans giant cells is strong evidence for a diagnosis of intestinal tuberculosis [5]. Surgical intervention (e.g., resection) is required to treat adult intussusception if the patient presents with intestinal obstruction, if there are signs of lack of blood supply, if the intestines have ruptured, or if cancer is suspected. Our patient required a right hemicolectomy because malignancy could not be ruled out before surgery. Antituberculous medication is the most appropriate treatment following surgery to eliminate any remaining infection and prevent recurrence [14]. This case demonstrates the need for physicians to consider intestinal tuberculosis in patients in endemic countries who present with ileocecal masses or adult intussusception.

Although intussusception was the presenting manifestation, identifying the underlying etiology was essential for definitive diagnosis and treatment. Intussusception is generally diagnosed using clinical and radiological findings, whereas histopathological evidence of granulomatous inflammation, particularly caseating granulomas when present, may support the diagnosis of intestinal tuberculosis. However, granulomas are not invariably present or specific to tuberculosis; therefore, histopathological findings should be interpreted alongside microbiological or molecular results, when available, and the clinical context. Antituberculous therapy is the mainstay of treatment for uncomplicated intestinal tuberculosis. However, its role as an alternative to surgery in patients presenting with ileocecal intussusception and intestinal obstruction depends on the severity and persistence of obstruction, bowel viability, and the presence of other complications. In the present case, surgery was undertaken to manage the intestinal obstruction and evaluate the underlying ileocecal lesion. Whether surgery could have been avoided with earlier antituberculous therapy cannot be established from this case alone.

Conclusions

Intussusception in adults caused by tuberculosis of the ileocecal region is uncommon, but this condition represents a serious clinical problem as it may resemble cancer. Given that the clinical and imaging or radiologic data collected before surgery are often nonspecific, the diagnosis of this condition is difficult. When making a differential diagnosis of adult intussusception or masses located at the ileocecal junction in endemic areas, tuberculosis should be considered. If a patient is diagnosed with adult intussusception due to ileocecal tuberculosis early on and given appropriate surgical treatment and antituberculous therapy, there may be good-to-excellent clinical outcomes.

Additional Information

Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

Acquisition, analysis, or interpretation of data: Sushrut M. Fulare, Tummapala Sai D. Bharat, Gopalan Muralidharan

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Critical review of the manuscript for important intellectual content: Tummapala Sai D. Bharat, Gopalan Muralidharan

Disclosures

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