

Crohn' disease or intestinal tuberculosis, diagnostic dilemma- a case series

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Abstract: In a developing country like India, which is endemic for tuberculosis, patients presenting with intestinal obstruction are often misdiagnosed as abdominal tuberculosis. Similarly, Crohn's disease with increasing incidence is being treated with anti tubercular therapy leading to late diagnosis with increased morbidity and mortality. I am hereby presenting a case series of 3 cases who were being mistreated as intestinal tuberculosis and were later diagnosed as Crohn's disease after surgical intervention. Such cases require a deep study, so that undue intervention and anti tubercular therapy can be avoided.

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I. Introduction

Crohn's disease is a chronic inflammatory condition of the gastrointestinal tract that can give rise to strictures, inflammatory masses, fistulas, abscesses, hemorrhage, and cancer. This disease commonly affects the small bowel, colon, rectum, or anus. Less commonly, it can also involve the stomach, esophagus, and mouth. Often the disease will simultaneously affect multiple areas of the gastrointestinal tract.¹

It is unclear how common Crohn's disease might have been prior to 1932, as it is likely that cases of Crohn's disease occurring in an era of limited abdominal surgery may have been mistaken for other processes such as tumor or intestinal tuberculosis. In 1913, Sir Kennedy Dalziel of Glasgow, Scotland, reported in the *British Medical Journal* on 13 patients and provided what is now recognized as a classical clinical and pathologic description of Crohn's disease.² Although not often cited, Dalziel's description predates the one by Crohn, Ginsberg, and Oppenheimer, and some have argued that the disease should be known by the eponym "Dalziel-Crohn's disease."

Intestinal tuberculosis (ITB) is caused mainly by *Mycobacterium tuberculosis*, and to a lesser extent by *Mycobacterium bovis*, the latter being less common in the western hemisphere due to pasteurization of milk, which is the main vehicle of transmission. Both have a predilection for the small bowel, particularly the terminal ileum, although any part of the gastrointestinal tract may be affected.³

Both ITB and CD are chronic granulomatous disorders with similarities that make the differentiation between these two entities very difficult but at the same time crucial, as the repercussions of a misdiagnosis carry grave consequence.⁴ There have been reports of misdiagnosing ITB as CD for as long as 7 years before the correct diagnosis was reached⁵. In China, Liu et al. has reported that up to 65% of CD had been misdiagnosed as ITB⁶.

This case series represents our experience with 3 patients presented with pain in abdomen and subacute intestinal obstruction, misdiagnosed as intestinal tuberculosis and ATT was unduly started. Due to no relief in symptoms exploratory laparotomy was done with resection and anastomosis. Post operative biopsy report came out to be suggestive of Crohn's disease. In India, being endemic for tuberculosis it is common to misdiagnose and treat these patients with anti tubercular drugs increasing the morbidity and mortality pertaining to late diagnosis.

II. Case Reports

Case 1

■ A 24 years old female presented with complaint of abdominal pain, on & off distension since 2yrs with cough, evening rise of temperature and significant weight loss for 1 year. Patient was admitted in Mahatma Gandhi Hospital multiple times and treated on lines of intestinal tuberculosis as per DOTS regime CAT-I. Took ATT treatment twice past 2 years. Abdominal distension increasing suddenly past 6 months causing respiratory distress. Also c/o passing dark coloured blood per rectally past 20 days.

■ No h/o malaena or haemetemesis or constipation or obstipation.

- **On Examination:** Patient was conscious, cooperative, well oriented to time, place and person. Abdomen was distended, tender, flanks full, umbilicus central and inverted. Fluid thrill present. On per rectal anal tone normal. No haemorrhoids or fissure or fistula. Finger blood tinged (dark coloured blood)
- **Investigations:** Severe anemia (Hb 5.4), ESR 49. X-ray chest showed pleural effusion. pleural fluid negative for AFB, predominantly lymphocytes and cell count 1000/cu.mm. LFT and RFT were normal with Deranged PT/INR
- **Special Investigation:** CECT whole Abdomen: pulled up caecum with stricture in distal caecum and proximal ascending colon causing severe obstruction and proximal small bowel dilatation with patulous ileo caecal valve, ascites and calcified mesenteric lymphadenopathy ? tubercular etiology.
- Because of bleeding per rectum colonoscopy could not be done.
- Decision for exploratory laparotomy was taken. Caecum was found inflamed along with obstruction of whole of lumen of proximal ascending colon with an ulcerative growth which bleed on touch with multiple ulceration in the whole length of large bowel. Right extended hemicolectomy was done with ileo-transverse anastomosis.
- Histopathology report of the resected specimen showed disproportionate inflammation of submucosa in the whole length with infiltration of acute inflammatory cells, areas of haemorrhage along with histiocytic cells, multinucleated giant cells and formation of giant cell granuloma. NO CASEATING NECROSIS SEEN. Lymph node showed granulomatous reaction. Features suggestive of CROHN'S DISEASE.



Case 2

A 40 years old male with complaints of pain in right side of abdomen since 6 months with fullness in abdomen that increases after taking meals and associated with occasional vomiting was admitted in our hospital. Patient also gave history of passing hard pellet like stools though no history of bleeding per rectum. On examination patient was conscious, oriented to time place and person. Abdomen was distended, tenderness present in right iliac fossa and right lumbar region, umbilicus centrally placed and inverted, shifting dullness present. Per rectal- no abnormality detected.

CECT Whole abdomen was suggestive of presence of irregular circumferential wall thickening involving ascending colon extending to hepatic flexure with max thickness 21mm and length involved 5.4 cm, causing marked luminal narrowing with mild dilatation of colon proximal to it. Multiple enlarged lymph nodes noted in pre-paraortic and mesenteric region, largest in right iliac fossa 21*16mm.

Colonoscopy - ulceronodular growth at ascending colon

BIOPSY- Epithelioid cell granuloma with langhan's giant cells suggestive of tubercular pathology

ATT was started. But symptoms aggravated

USG Whole abdomen - SAIO

Barium Enema - circumferential thickening/mass in ascending colon causing marked luminal narrowing with abrupt cut off in distal part of ascending colon.

Exploratory Laparotomy was performed. Cecum was found to be inflamed with site of obstruction being ileocecal junction extending till cecum and part of ascending colon. Resection of affected segment with ileo-ascending colon anastomosis was done.

BIOPSY post-op – ulceration of mucosa with formation of deep penetrating ulcer lined by granulation tissue, marked congestion of vessels. Sub mucosa shows marked infiltration by chronic inflammatory cells

with formation of lymphoid follicles with prominent germinal centre. Serosal surface also shows infiltration by chronic inflammatory cells with formation of lymphoid follicles. Evidence of tuberculosis and malignancy not seen. Features suggestive of crohn's disease.

Case 3

A 48 years old male presented to casualty department with history of pain in abdomen, distension, vomiting and constipation 10 months back for which he was managed conservatively. Then he developed similar complaints 5 months back with weight loss and loss of appetite.

CECT whole abdomen- thickening of distal ileum, cecum and part of ascending colon with narrowing of lumen. Multiple enlarged mesenteric lymph nodes with largest measuring 2*2.6 cm. Suggestive of intestinal tuberculosis.

Anti tubercular Treatment was started by a registered medical practitioner. This time patient presented to us with pain in abdomen, distension, vomiting, constipation and respiratory distress for past 5 days. On examination abdomen was distended, shifting dullness was present.

USG was suggestive of intestinal obstruction with ascites.

When there was no response from conservative management, exploratory laparotomy was planned.

On Laparotomy, adhesions were found at terminal ileum and cecum with multiple strictures in ascending colon. Resection of distal ileum, cecum, ascending colon and part of transverse colon was performed with ileo-transverse anastomosis.

Biopsy report was suggestive of transmural edema, with monocytes infiltration and non caseating granulomas suggestive of crohn's disease.

III. Discussion

Crohn's disease and intestinal tuberculosis both being inflammatory conditions are difficult to differentiate. The ultimate course of these two diseases is very different. Along with an increase in the incidence of Tuberculosis, there has been a proportionate increase in the incidence of intestinal tuberculosis.^{7,8}

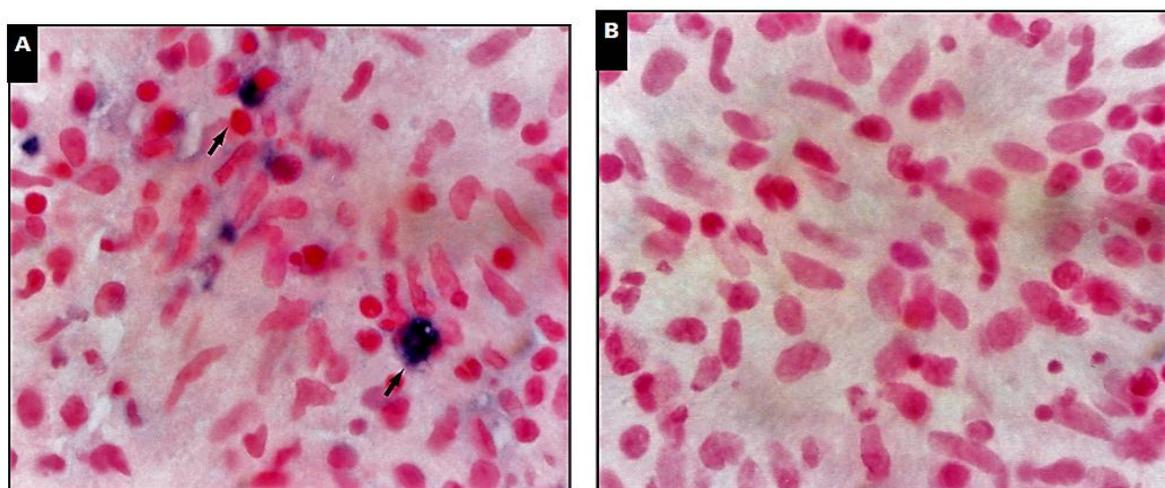
Whereas TB is an entirely curable disease, CD, is a progressive and relapsing illness. While most CDs respond to mesalamine preparations, immunotherapy or steroid treatment, a small proportion even respond to antituberculous therapy (ATT). Steroid therapy on the other hand will do more harm than good in individuals with intestinal TB.⁹

Differences between intestinal tuberculosis and crohn's disease

Intestinal Tuberculosis	Crohn's Disease
Any age group	Second to third decade and sixth decade
Duration of illness- 6-7 months	>12 months ¹⁰
Clinical Features- Fever Ascites Extra pulmonary tuberculosis	Abdominal pain Diarrhea Hematochezia ^{10,11}
Family history of tuberculosis	Family history of IBD
Culture- Demonstration of acid-fast bacilli in intestinal biopsy smears	Absent here ¹⁰
Endoscopy- Transverse ulcer Nodularity Hypertrophic lesions	Aphthoid ulcer Cobblestone appearance ¹²
Biopsy- AFB positive Transverse ulcers, ill defined sloping edges, caseating granulomatous inflammation ¹³	AFB negative Linear ulcers, transverse sinus, cobblestone appearance, fat wrapping, non-caseating granulomatous inflammation, fistulae, sinuses, extraintestinal abscesses ^{14,15}
Radiology- Terminal ileum with ileocecal valve is the most common site Skip lesions- rare Type of enhancement- homogenous Mural stratification- common Perianal fistula- uncommon Inter-bowel fistula- rare Strictures- concentric Increased mesenteric vascularity- uncommon mesenteric nodes- large, necrotic	Terminal ileum with sparing of ileo-cecal valve ¹⁶ Common Stratified rare common common eccentric with sacculations common small, homogenous ¹⁷

Serological test for IBD is being investigated as diagnostic markers for IBD. Sensitivity of positive ASCA for diagnosis of CD reaches up to 76%, whereas it is 98% in various trials¹⁸. IgA ASCA and IgG ASCA are considered to be 95% specific for diagnosis of CD when individually tested, but 100% when tested in combination^{18,19}. These data come from countries where tuberculosis is uncommon and control population in these studies did not include patients with GITB. In the previous study, we found that (1) serological markers were not significantly different between CD and GITB; and (2) prevalence of positive ASCA was much lower in patients with CD than the reported incidence from Western countries²⁰. A recent study by another centre in India showed that ASCA was not helpful in differentiating CD from GITB⁶.

In a study in situ PCR showed the presence of M tuberculosis DNA in 6 of 20 mucosal biopsy specimens from patients with intestinal TB and 1 of 20 biopsy specimens from patients with CD. In TB, positivity was found in sites with and without granulomatous inflammation. In CD, positive staining was localized to a granuloma. It is possible that in situ PCR has the potential to be helpful in at least a subset of difficult biopsy specimens in which TB and CD cannot be differentiated.²¹



A, In situ polymerase chain reaction stain for Mycobacterium tuberculosis showing cytoplasmic positive staining in cells (arrows) within an area of obvious granulomatous inflammation as demonstrated by the typical nuclei of epithelioid histiocytes, from the colonic mucosa of a patient with Crohn disease ($\times 1,000$). B, Negative control with no primers ($\times 1,000$).

IV. Conclusion

Due to the clinical, radiological and histological similarities between the crohn's disease and intestinal tuberculosis, guidelines should be made for the management of granulomatous diseases of intestine to prevent misdiagnosis and overt use of antitubercular drugs. In a developing country like India, sometimes antitubercular drugs are started just to avoid a series of expensive investigations leading to increased morbidity and mortality. A guideline based approach will prove more economic, diagnostic and beneficial for the patients.

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