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Case Report

Diagnostic predicaments in a case of Intestinal obstruction with strictures to distinguish intestinal Koch's and Crohn's disease

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ABSTRACT

Intestinal Tuberculosis (Koch's) has become a very common disease which pose a great diagnostic challenge because of its non- specific presentation and broad-spectrum features and lead to delays in diagnosis along with developments of complications. This 70 years old female patient presented with intestinal obstruction with multiple strictures. It was very tough to distinguish Tuberculosis from Crohn's Disease in this case as the sections for histology were continuously negative for Acid fast bacilli. This case demonstrates the diagnostic predicaments encountered to arrive at a diagnosis of Intestinal Tuberculosis.

1. Introduction

Differentiating abdominal intestinal koch's (Tuberculosis) and Crohn's disease (CD) is a very challenging problem in endemic countries like India where Tuberculosis (TB) is presenting with chronic abdominal pain.[1] Etiologies are different for both but they can show similar presentations which pose a diagnostic problem.[2] Most CDs respond to steroid treatment and has a progressive and relapsing course while steroid therapy will cause more harm for patients with Tuberculosis.[1] A tiny percentage of CD patients responds to Anti-Tuberculous Therapy also making the diagnosing again confusing.[1] Crohn's patients can be wrongly diagnosed as Tuberculosis because India is endemic country for TB and Anti-Tuberculous therapy is instituted inappropriately sometimes.[3] So it's very important to distinguish between the two diseases while diagnosing.

2. Case Report

70 years old female presented to the Casualty Department with complaints of 3 days of severe nausea and vomiting and colicky abdominal pain for 1 year. She has prior history of admission to hospital for similar complaints 1 year before. She had no past history of diabetes, hypertension, bronchial asthma, tuberculosis or contact with tuberculosis. She is P3L3 with history of tubectomy 30 years back. On examination, all vitals were stable. On per abdomen examination showed soft but diffuse tenderness present in the lower abdomen with no guarding, rigidity, organomegaly, palpable masses or evidence of free fluid in the abdomen. All other systems were within normal limits. On Investigation, pelvic sonography showed many small bowel loops fluid filled and distended with stretched out wall suggestive of intestinal obstruction along with three tight strictures in terminal ileum loop in the left iliac fossa up to ascending colon and ulceration of mucosa with moderate submucosal edema. Sonographic diagnosis was inflammatory bowel disease, suggestive of Crohn's disease. Enhanced Computed Tomographic also confirmed subacute

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intestinal obstruction secondary to small bowel perforation and multiple strictures.

A clinical diagnosis of subacute intestinal obstruction secondary to small bowel perforation secondary to multiple strictures was made and the patient underwent right hemicolectomy with illeo-transverse anastomosis.

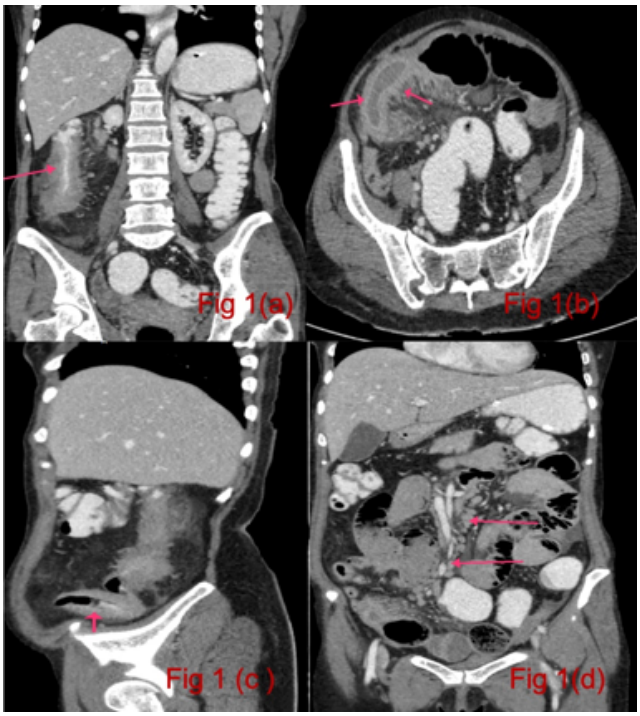

Fig. 1: a: Post contrast coronal reformatted image - circumferential wall thickening of 17 mm with luminal narrowing noted in right colon and caecum. Thickened wall shows near homogenous symmetric transmural enhancement; **b:** Axial post contrast CT images showing Proximal ileum- seen beneath the anterior abdominal wall in right iliac fossa extending over length of 60 mm, transmural, mural wall thickening (10 mm) showing homogenous symmetrical transmural enhancements and stratified mural hyperenhancement causing luminal narrowing. Prominent vasa recta and ill-defined soft tissue infiltrates in vicinity; **c:** Sagittal post contrast Images -Terminal ileum-extending over a length of 42 mm, circumferential wall thickening (10 mm) showing homogeneous symmetrical transmural enhancement causing luminal narrowing; **d**: Multiple prominent mesenteric Lymph nodes with mild free fluid.

We received the resected specimen of bowel measuring 16.5 cm in length and around 3.5cm in diameter and grossly multiple nodular areas were noted on the serosal side of the intestine with thickened walls on one side and dilated thinned out walls on another end with ulcerated and hemorrhagic mucosa. We also received a part of ileum where strictures were noted. A total of 20 lymph nodes were dissected out largest measuring 2 cm in diameter.

Microscopy examination: Multiple sections from intestinal walls showed mild chronic inflammation, fibrosis

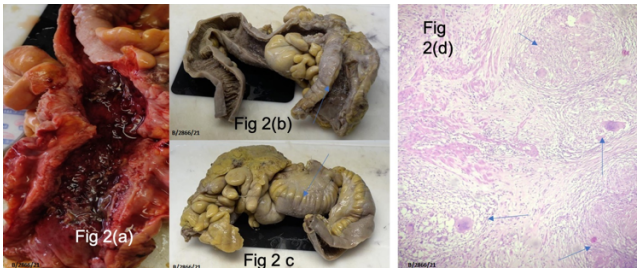

Fig. 2: a: Shows ulcerated mucosa of the resected bowel before fixation in 10% formalin; **b:** shows thickened wall and ulcerated mucosa on one end; **c:** shows multiple nodular areas on the serosal side of the intestine; **d:** H&E (10x) showing well formed epithelioid granulomas.

along with ill-formed epitheloid granulomas [Figure 2d]. The sections from mesenteric fat & lymph nodes from mesentery also showed well formed epithelioid cell granuloma comprised of epithelioid cells, lymphocytes and Langhan's type of giant cells. ZN stain was negative for AFB.

A final diagnosis of chronic granulomatous inflammation of intestine involving mesenteric lymph nodes suggestive of intestinal Koch's was made. The patient was registered in direct observed treatment short course (DOTS) category -1 as anti-tuberculosis drug treatment as per Revised national TB control program (RNTCP) in India for 9 months and showed improvement.

Informed consent of patient is taken for the publication and research purpose.

3. Discussion

Intestinal Tuberculosis (Koch's) has become a very common disease which pose a great diagnostic challenge because of its non- specific presentation and broad-spectrum features and led to delays in diagnosis along with development of complications.[4] Crohn's disease is considered as a great mimicker of Abdominal TB. Abdominal TB is less common compare to 1 to 3 % cases of all TB cases and 11% of extrapulmonary TB.[5] Intestinal TB is caused by Mycobacterium tuberculosis and also by Mycobacterium bovis in few cases.[6]

Patients presenting with multiple strictures and perforation are common to both.[1] In the current case also, the patient presented to the casualty department with complications of multiple strictures leading to intestinal obstruction which can be a sequela of both Crohn's disease as well as Intestinal Tuberculosis.

Radiologically contrast-enhanced computed tomography scan shows prominent pericolic or perienteric vasculature in increased number with tortuosity and widely spaced vasa recta of the ileum as vascular jejunization of the ileum also called as comb sign. The other radiological signs in Crohn's

disease are abrupt tapering of lumen, right angle branching and early, dense venous opacification of the inetstinal wall.[7] While in Tuberculosis, the ileocaecal and adjacent medial wall of the caecum becomes asymmetrically thickened, progressive disease shows grossly thickened wall, adherent intestinal loops, enlarge regional lympnodes and thickened mesenteric that form a soft tissue mass.[8] In our case, Computed Tomography showed features such as symmetrical transmural enhancements and stratified mural hyperenhancement causing luminal narrowing prominent vasa recta and ill-defined soft tissue infiltrates in vicinity suggestive of Crohn's disease. But wall thickening and mesenteric lymph nodes enlargement which directed the differential diagnosis more in favor of Intestinal Tuberculosis compare to Crohn's disease.

Mesenteric thickening, adherent loops of intestine, large lymph nodes, wall thickening, stricture and stenosis are most common features of Intestinal Tuberculosis. While in Crohn's disease non-healing fistulae are more common.[9] In the present case there are extensive ulcerations, thickening of the wall and multiple small strictures of colon and ileum were directing towards inflammatory bowel disease but serosal nodules and lymph nodes of 2cm in diameter were pointing towards diagnosis of Tuberculosis on gross examination.

On microscopy, in Crohn's disease the granulomas would be more frequent in rectosigmoid area and are small, ill-defined and sparse granulomas but in tuberculosis these are usually more than 400um in size and present at more than four sites.[10] In the current case, we observed many granulomas in one field in all sections of intestine especially where serosal nodules were prominent as well as granulomas were seen in all lymph nodes even though stain for Acid Fast Bacilli were continuously negative. The histologic hallmark of Intestinal Koch's is caseating granulomas in submucosa with positive acid-fast bacilli.[1] But in many cases of abdominal TB, Mycobacterium Tuberculosis can be frequently negative.[3] In our case also, Ziehl - Neelsen stain was negative for Acid fast bacilli which caused dilemmas in diagnosis to differentiate Koch's from Crohn's.

The predictors to differentiate Crohn's from Intestinal Tuberculosis in this case were favoring tuberculosis more than Crohn's though the Ziehl - Neelsen stain was negative. A final diagnosis of Intestinal Koch's was made for this patient and Anti-Tuberculous therapy was started right away with which the patient showed great improvement.[11]

It has become very tough to distinguish Intestinal Tuberculosis and Crohn's as they have similar clinical, radiological, pathological and endoscopic features. Even though many efforts have been made, no clear-cut features are yet available to differentiate both.

4. Conflict of Interest

The authors declare no relevant conflicts of interest.

5. Source of Funding

None.

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