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Case Report

Small bowel obstruction secondary to abdominal tuberculosis

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ABSTRACT

Tuberculosis (TB) remains a serious public health concern in developing countries to date. Gastrointestinal involvement secondary to pulmonary TB is seen in 55-90% of the adult population. Intestinal TB is prevalent in immunosuppressed patients in underdeveloped countries and constitutes 12% of extrapulmonary TB cases. However, it poses a diagnostic challenge due to its non-specific features and underlying complications. Intestinal TB often involves the GI tract, peritoneum, mesenteric lymph nodes, and solid viscera of the abdomen. Here we present a known case of TB in a 39-year-old female, non-compliant with anti-TB medications. She presented with complaints of diffuse abdominal pain, generalized weakness and constipation. She was suspected of having small bowel obstruction. On evaluation, the Mantoux test was positive and the spread of extrapulmonary TB in the form of multiple calcified granulomas was seen in solid visceral organs such as the liver and spleen, along with omentum and mesenteric lymph nodes, which we believed was a rare clinical presentation in Intestinal TB cases. The patient was surgically managed and discharged in stable condition.

Keywords: Intestinal TB, Tuberculosis, Solid viscera, Anti-TB medications, Crohn's disease, Immunosuppressed, Extrapulmonary TB, Mesenteric lymph nodes

INTRODUCTION

Tuberculosis (TB) is a resurgent global health concern in developing countries with an increasing number of immunocompromised patients due to poverty, drug resistance and non-compliance and lack of public awareness. It is a chronic granulomatous inflammatory disease caused by *Mycobacterium tuberculosis* (MTB), with 9.6 million cases reported worldwide.[1] Extrapulmonary cases are difficult to diagnose due to their non-specific presentations. Current literature shows abdominal TB can cause bowel obstructions due to strictures and adhesions.[2] Intestinal TB is common in young individuals less than 40 years old. There was a 25% decline in intestinal TB cases after the use of anti-TB medications.[3] The terminal ileum and caecum are the two most commonly affected areas of the GI tract due to increased fluid and electrolyte absorption rates.[4] The clinical presentation is very vague-it can present as a simple abdominal pain to severe peritonitis or small bowel obstruction, which makes the diagnosis very challenging.[5] Uncomplicated cases are medically managed, and surgical interventions are needed in case of peritonitis, intestinal obstructions and perforations.[6]

CASE REPORT

This is a case of a 39-year-old female with a childhood history of epilepsy on anti-epileptics. She had a history of tubercular pleural effusion 20 years ago and was on anti-TB drugs; however, she discontinued them after 3 months. She also mentions that she was diagnosed with TB positive sputum culture 7 years ago and was on anti-TB medications for 6 months. Now, she presented to the OPD with complaints of intermittent abdominal pain, abdominal distension, fatigue, low-grade fever, loss of

appetite and constipation for one week. Upon evaluation, she had a temperature of 97°F, a heart rate of 77 bpm, a blood pressure of 100/60 mmHg, and a respiratory rate of 20 CPM. Laboratory analysis showed Hb-12.3 g/dl, WBC-3900 cells/ul, platelets-2.01 lakhs, serum creatinine-1.0 mg/dl, PT/INR-11.4/0.98. Serum electrolytes were within normal limits. USG abdomen showed mild ascites with subacute intestinal obstruction. The Mantoux test was positive. Abdominal CT scan showed calcified nodules at the right pleural surface (Figure 1), the subcapsular surface of the liver and spleen (Figure 2 and 3), along with the serosal surface of the entire ileum and distal jejunum. She was initially diagnosed with subacute intestinal obstruction. A surgical gastroenterologist consultation was taken, and she was planned for exploratory laparotomy with omentectomy and adhesiolysis.

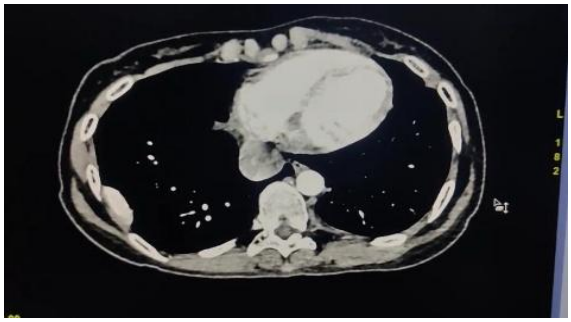

Figure 1: Calcified pleural based lesion on the right side.

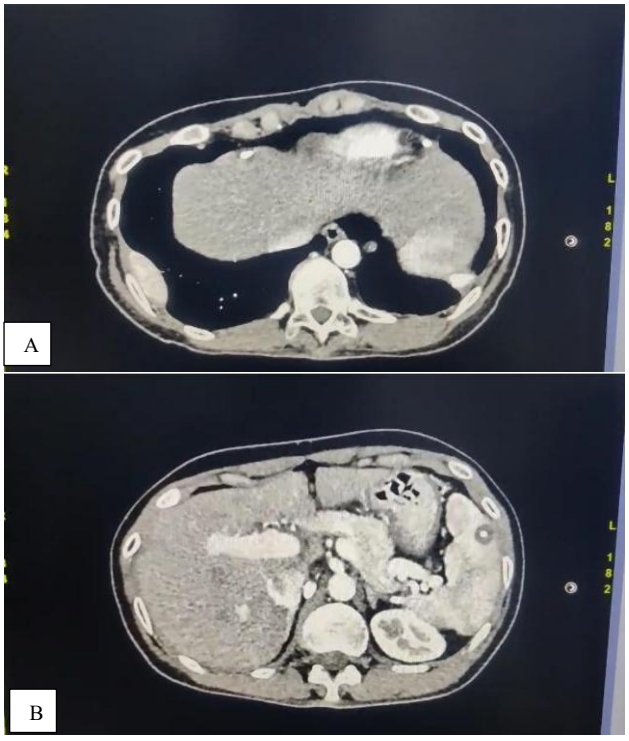

Figure 2 (A and B): Calcified Granulomas in the subcapsular surface of the liver and spleen with perilesional edema.

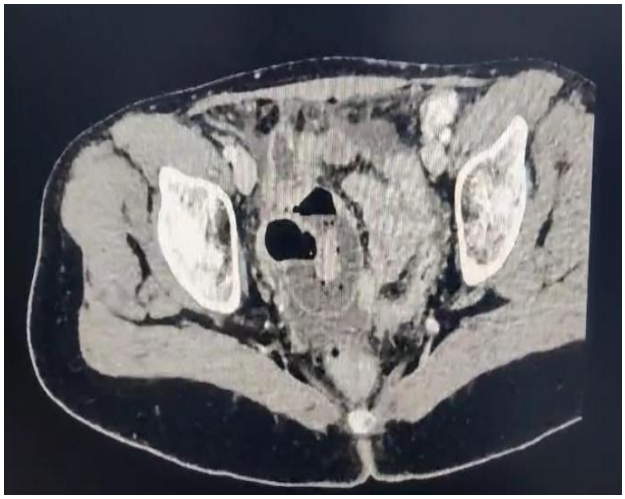

Figure 3: Dilated ileal loop in pelvis close to rectum.

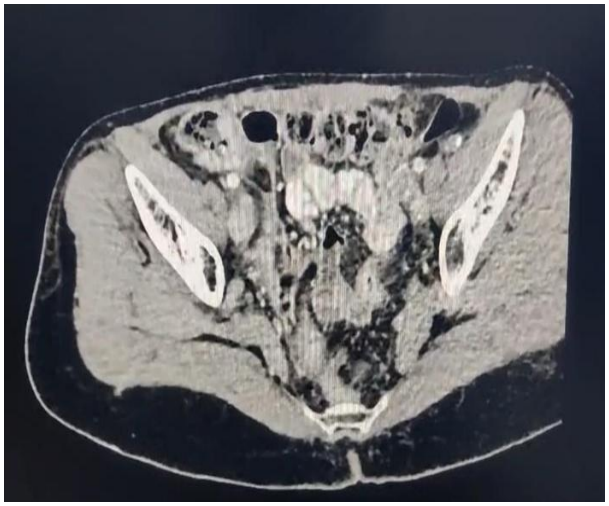

Figure 4: Bowel loops closely adherent to anterior abdominal wall.

The procedure was done under general anesthesia-there were multiple adhesions present in the omentum and anterior abdominal wall. Multiple whitish nodules present on serosal surface extending from mid-jejunum to IC Junction, distal descending colon, sigmoid colon and peritoneal surface of urinary bladder. Distal ileal loops adjacent to the rectum got attached to the rectum, causing mild obstruction. Small nodules were present in the omentum, and she underwent omentectomy. A 3×3 cm caseating nodule (Figure 5) was present at the mesenteric surface, resulting in dense adhesion. Adhesiolysis was done. Intraoperative biopsy was taken and sent for further evaluation. Post procedure, the patient was hemodynamically stable. She was treated with IV fluids, IV antibiotics, protonics, anti-TB drugs and other supportive medications.

Histopathologic evaluation showed a gross specimen of omentum measuring 14×7 cm with yellowish small grey areas (Figure 6) measuring 0.2 cm and small areas of calcification measuring 0.4×0.3 cm.

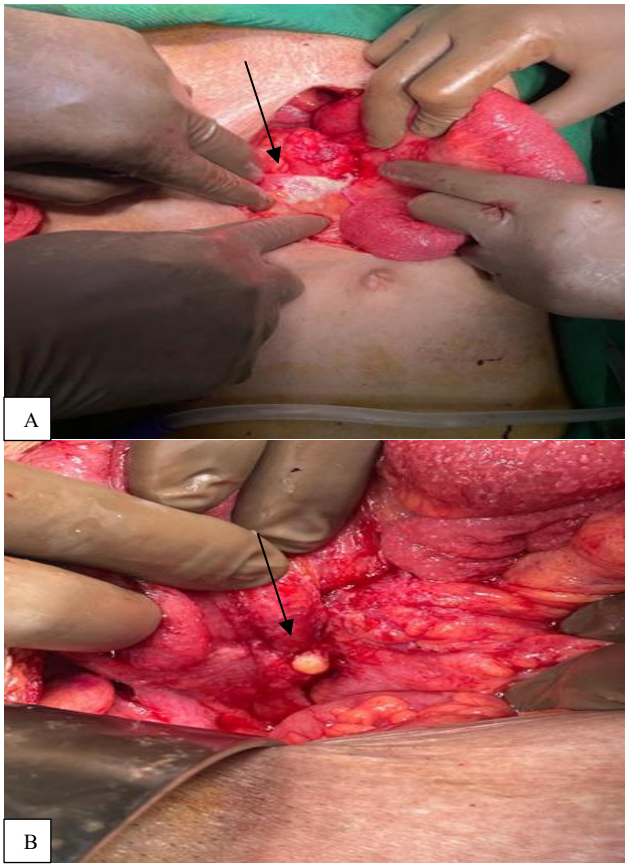

Figure 5 (A and B): Gross specimen showing 3×3 cm caseating nodule at mesenteric surface and a 0.4×0.3 cm calcified nodule at the serosal surface of ileum.

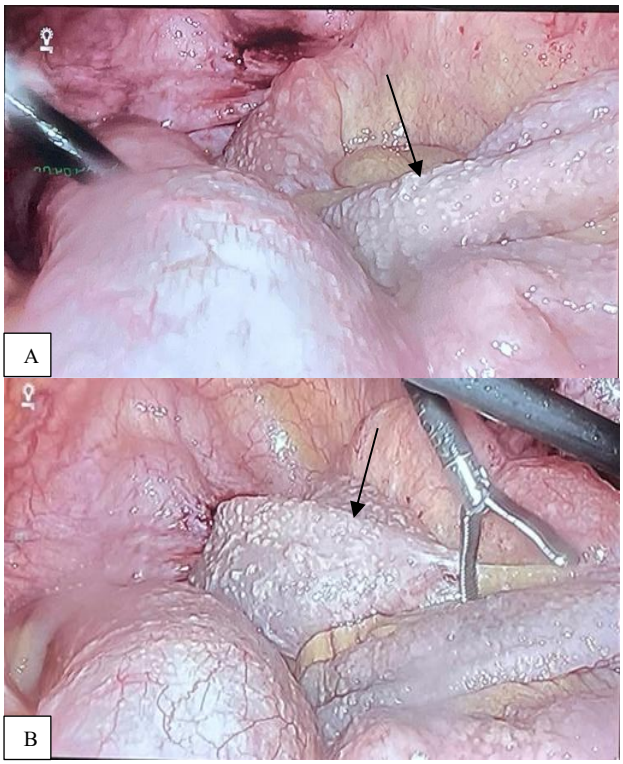

Figure 6 (A and B): Gross specimen of omentum showing yellowish grey areas with multiple adhesions.

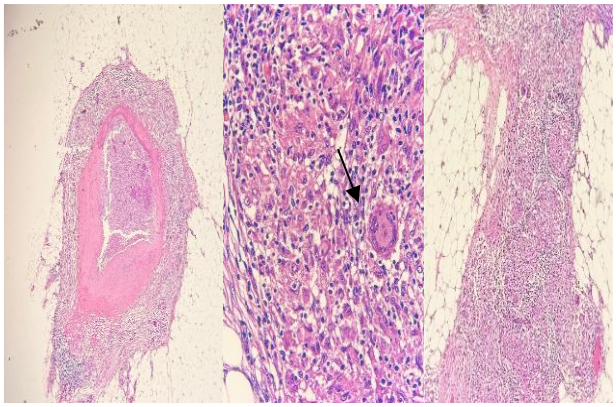

Figure 7: Histology specimen showing caseating granuloma with Langhans giant cells in the center.

Microscopic examination (Figure 7) showed omental tissue with well-formed granulomas comprising epitheloid cells, admixed with Langhans-type giant cells and lymphocytes. Few granulomas showed central necrosis. She had a smooth hospital course and was discharged on 3rd post-operative day with ATT medications. She was seen in OPD a month later with her symptoms resolved and compliant with anti-TB medications.

DISCUSSION

Intestinal TB remains a diagnostic challenge and patients often end up having surgery. Ileocecal TB is the most common form of intestinal TB with 52-85% of cases worldwide.[7] This form of TB is often confused with other inflammatory and neoplastic conditions of the bowel and patients are treated with steroids, which cause disease progression and increased mortality.[8] It is important to distinguish these diseases from abdominal TB; an early diagnosis is needed for timely intervention. Major risk factors associated with abdominal TB are latent TB, tobacco smoking, diabetes, HIV infection, IV drug abuse, malignancy, malnutrition and renal insufficiency.[9] An abdominal CT scan remains the gold standard diagnostic modality for intestinal TB. This is followed by NAAT/AFB sputum cultures for treatment. Diagnosis is always done by both radiographic and histopathologic studies. Histologically, the hallmark of TB is caseating necrotic granulomas with Langhans giant cells. According to Kentley et al the rate of diagnosis of intestinal TB from histologic specimens is 54% and microscopic analysis is 18-50%.[10] Medical management with ATT remains the first-line treatment. However, exploratory laparotomy is necessary in 20-40% of patients presenting with an acute abdomen.[11] The ATT regimen is similar to that of pulmonary TB and a six-month regimen is to be advised.[12] Our patient, however, had a histopathologic specimen showing caseating granulomas in the entire ileum and mid-jejunum, so she underwent exploratory laparotomy eventually. Since the culture findings for MTB take six weeks, she was started on ATT and advised to follow up.

CONCLUSION

Intestinal TB is often confused with other intestinal conditions, such as inflammatory bowel disease (IBD), malignancies, and small bowel obstructions. Multidisciplinary assessment for such cases is needed for proper diagnosis and timely interventions. Although evidence-based anti-TB medication is the mainstay of treatment, surgery may be required on an elective basis. Patients must be educated on the severity of the conditions, risks involved and the importance of drug compliance.

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