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Case Report

A rare case of primary tuberculous appendicitis in a secondary care hospital in eastern India: a case report

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ABSTRACT

Primary tuberculous appendicitis is described as a histological confirmation of appendicular tuberculosis with negative chest X-ray and no evidence of tuberculosis found elsewhere in the body, and constitutes only 0.1-3% of all appendicectomies. A 21-year-old male patient presented to the emergency of our secondary care hospital, complaining of recurrent colicky right lower abdominal pain, nausea, with two months of persistent loss of appetite, increased frequency of micturition, weight loss, malaise, and evening temperature rise. There was tenderness at McBurney's point with positive obturator test. Ultrasound of abdomen found enlarged appendix, further confirmed by Barium meal follow-through of abdomen. With a provisional diagnosis of recurrent acute appendicitis, the patient was taken for emergency open appendicectomy under spinal anesthesia. Intra-operatively, appendix in pelvic position, was thickened up to the base, approximately 4 cm in length, wholly adhered to the greater omentum, with no perforation, and no peri-appendiceal fluid collection. Microscopic examination showed epithelioid granulomas with Langhans' and foreign body giant cells. Foci of necrosis was present. Correlating with the clinical picture, intra-operative and histopathological findings, patient was definitively diagnosed with primary tuberculous appendicitis. The patient was started on anti-tubercular treatment for extrapulmonary TB and is currently followed up at the TB cell at our hospital. As tuberculosis is targeted for elimination under national tuberculosis elimination program (NTEP), we strongly recommend that all appendicectomy be followed by a histopathological examination to detect this rare tuberculosis.

Keywords: Appendicular tuberculosis, Gastrointestinal appendicitis, Primary tuberculous appendicitis, Extrapulmonary tuberculosis, National tuberculosis elimination program, Appendicectomy

INTRODUCTION

Extrapulmonary tuberculosis occurs when tuberculosis affects areas of the body other than the lung, such as the skin, joints, lymph nodes, abdomen or meninges.[1] The ileocecal area is the primary site of gastrointestinal tuberculosis, which in turn accounts for only 3% of extrapulmonary tuberculosis, ever since *Mycobacterium bovis* infections have been eliminated by milk pasteurization.[2] Close to the ileocecal region, an extremely rare condition is appendicular tuberculosis, that may present as acute appendicitis.[3] The diagnosis is only made following a histological analysis.[4] There are two types of tuberculous appendicitis: primary and secondary. Primary tuberculous appendicitis is described as a histological confirmation of appendicular tuberculosis with negative chest X-ray and no evidence of tuberculosis found elsewhere in the body, and constitutes only 0.1-3% of all appendicectomies.[4,5]

CASE REPORT

A 21-year-old male patient presented to the emergency of our secondary care hospital, complaining of recurrent

colicky right lower abdominal pain, nausea, with two months of persistent loss of appetite, increased frequency of micturition, weight loss, malaise, and evening temperature rise. He had constipation-predominant inconsistent bowel habits. No family history of tuberculosis was elicited. There was no history of respiratory distress, chronic cough, haematuria or pyuria.

On general examination, he was lethargic, afebrile, heart rate 102/min, respiratory rate 16/min with no palpable lymph node. Chest auscultation revealed only vesicular breath sounds. There was tenderness at McBurney's point with positive obturator test. There was no palpable mass, guarding or rebound tenderness. Baseline investigations were normal, but CRP was elevated (9.8 mg/dL). Chest X-ray and routine urine examination were normal. Ultrasound of abdomen found enlarged appendix, further confirmed by Barium meal follow-through of abdomen (Figure 1). Thus, with a provisional diagnosis of recurrent acute appendicitis, the patient was taken for emergency open appendicectomy under spinal anesthesia.

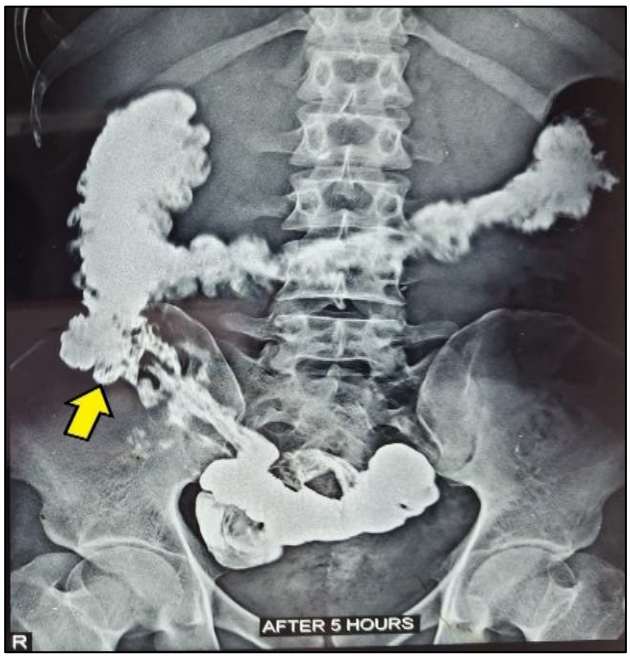

Figure 1: Barium meal follow-through of abdomen showing enlarged appendix (arrow).

Surgical management

McArthur's gridiron incision was extended to Rutherford Morison incision for better exposure of operative field. Intra-operatively, appendix in pelvic position, was thickened up to the base, approximately 4 cm in length, wholly adhered to the greater omentum, with no perforation, and no peri-appendiceal fluid collection (Figures 2 and 3). After appendicectomy with resection of a part of the greater omentum, the specimen was sent for histopathological examination. The patient was discharged after stabilization and 4 days of observation, with no post-operative complications.

Differential diagnosis

Appendicular lump, neoplasm of appendix, and tuberculous appendicitis.

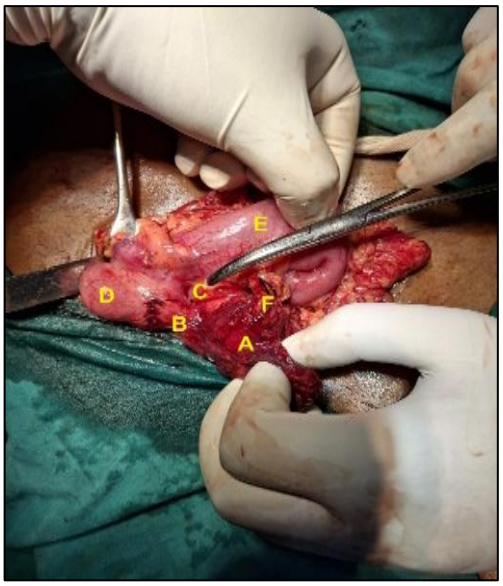

Figure 2: Intra-operative image of appendix.
A: Enlarged body of appendix covered with greater omentum; B: Base of appendix; C: Thickened mesoappendix; D: Caecum; E: Ileum; F: Resected part of greater omentum.

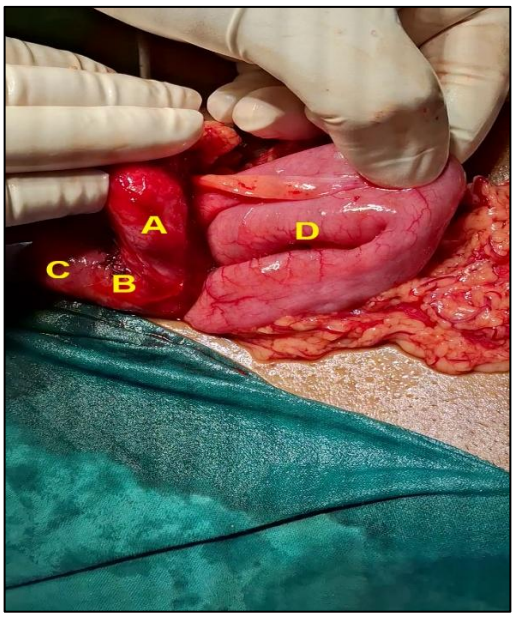

Figure 3: Intra-operative image of posterior (retrocecal) view of appendix.
A: Enlarged body of appendix; B: Base of appendix; C: Caecum; D: Terminal ileum

Histopathological examination

Gross examination showed length to be 3.8 cm, with whole appendix embedded in the greater omentum. Microscopic examination showed epithelioid granulomas

with Langhans' and foreign body giant cells. Foci of necrosis was present. The wall was densely infiltrated by inflammatory cells, which had extended into the peri-appendicular fibroadipose tissue and the adherent greater omentum. There was no evidence of malignancy. Granulomatous inflammation was detected, which suggested a possibility of mycobacterial infection.

Follow-up and further treatment

Sputum CBNAAT and urine CBNAAT yielded negative results. Contrast-enhanced CT scan of whole abdomen revealed dilated right distal ureter with narrowing at vesico-ureteric junction due to stenosis, and no significant ipsilateral hydronephrosis. The patient was referred to the urology department of a tertiary hospital for DJ stent placement of right ureter. Correlating with the clinical picture, intra-operative and histopathological findings, the patient was definitively diagnosed with primary tuberculous appendicitis. The patient was started on anti-tubercular treatment for extrapulmonary TB, and is currently followed up at the TB cell at our hospital.

DISCUSSION

The prevalence of tuberculous appendicitis in India is 2.9%.[6] Tuberculous appendicitis frequently manifests as a chronic type with an acute flare-up of tuberculous appendicitis. Tuberculous appendicitis was first reported by Corbin in 1873, way before the discovery of tubercle bacilli by Koch in 1882.[7,8] In 1917, Scott had suggested that it occurred predominantly in males (3:2) and young adults, this demographic being later corroborated.[7,9,10] Scott hypothesized four possible origins from where the bacilli maybe deposited in the appendix: (i) the intestinal tract itself, (ii) the peritoneum, (iii) the lymphatic system, and (iv) the bloodstream.[7]

There have been a varied range of symptoms reported. Ambekar and Bhatia examined a young female patient who reported tenderness in the right iliac fossa, was initially diagnosed appendicitis, but proved to have tuberculous appendicitis via histopathology, similar to that found by Maharjan.[2,11] Hubbard and Chlysta reported 34 tuberculous appendicitis cases mostly in young males, among whom 11 had typical tuberculosis symptoms, 25 had acute right lower quadrant pain, 7 had pulmonary lesions and only 6 patients had AFB under microscopy.[12] Wani et al in Srinagar, India studied 18 cases, all with complications like, intestinal obstruction and peritonitis, which was absent in our case.[13]

The histopathological examination in this case was done in a private setting since the facility was not available in our hospital. Other differential diagnosis for granulomatous appendicitis include sarcoidosis, parasite-related appendicitis, Crohn's disease, and inflammation by foreign bodies.[14] In our case, no parasite or foreign body was found, nor the foci of granuloma was non-caseating. Hence our treatment was given accordingly: only antitubercular drugs. Whereas corticosteroid therapy in such cases may result in death or overwhelming morbidity due to adverse drug interactions.[15,16]

CONCLUSION

The diagnosis of tuberculous appendicitis in a resource-limited setting was made only after a histopathological examination. As tuberculosis is targeted for elimination under NTEP, we strongly recommend that all appendicectomy be followed by a histopathological examination to detect tuberculosis, and anti-tubercular treatment should be started without delay.

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