Tubercular appendicitis: A rare cause of acute abdomen in children

Abstract

Acute appendicitis is the common cause of acute abdomen requiring emergency surgery in children. But the tubercular involvement of the appendix is rare, only occurring in about 1 to 2% of all appendicectomies. It is either secondary to tuberculosis elsewhere in the abdomen or it is an isolated involvement without any identifiable focus anywhere in the body. The presentation of this condition is nonspecific and histopathologic examination is often the only way to reach a diagnosis and to establish specific antitubercular therapy. The appendicular tuberculosis presenting with the signs and symptoms of acute appendicitis is a very rare occurrence and only few cases are reported in literature. This case is a rare one with acute presentation and is being reported to stress the point of histopathological correlation of all removed appendices because sometimes it can bring the surprise diagnosis of tubercular appendicitis as in the present case.

Key words: Acute Tubercular Appendicitis, Pain Abdomen Children.

INTRODUCTION

Acute appendicitis is the most common condition requiring emergency surgery in children. Primary bacterial infection and/or ischemia of appendix have been postulated as possible causes of appendicular inflammation. The tubercular involvement of appendix is very rare with a reported incidence of 0.08–2.9% of all appendectomies in all age groups[1,2]. It can be either an isolated involvement or secondary to intra-abdominal pathology. The presentation of tubercular appendicitis is nonspecific, and diagnosis is usually made only after histopathological examination. Appendicular tuberculosis (TB) presenting with the signs and symptoms of acute appendicitis is a very rare occurrence, and only a few cases are reported in adult population[3,4]. This case is being reported to highlight the fact that isolated tubercular involvement of appendix can have an acute presentation.

CASE REPORT

A 9-year-old male child was admitted in children ward with a history of nausea and pain abdomen for last 48 h. On examination, the child was febrile (101°F), and vitals were stable. Abdominal examination revealed rebound tenderness in the right iliac fossa making a clinical diagnosis of acute appendicitis. On investigation, the total leukocytic count was 13,000/cmm with a predominance of polymorphs. Ultrasonography of abdomen showed a tubular noncompressible structure having a diameter of 12 mm seen in the right iliac fossa suggesting...

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inflammation of the appendix. With a presumptive diagnosis of acute appendicitis, the patient was taken up for surgery. Abdomen was opened by standard gridiron incision, and the appendix was grossly inflamed, and cecal wall was normal. The appendix was removed, and the stump was left as such. The postoperative period was uneventful, and the wound was healthy without any discharge. The histopathological examination revealed TB of appendix [Figures 1 and 2]. The patient was investigated for pulmonary focus, but X-ray of chest was normal. However, his erythrocyte sedimentation rate was raised in the range of 65 mm in 1st h by Westergren method, but Mantoux test was negative. The patient has been put on 6 months regimen of antitubercular therapy and is on follow-up.

**DISCUSSION**

Acute appendicitis commonly occurs due to the culmination of pathological events of luminal obstruction, ischemia and microbial invasion of appendiceal wall and it needs urgent surgical intervention. However, the tubercular infection of the appendix with acute symptoms is very rare despite gastrointestinal TB being common in India.\(^5\) The reported incidence of appendicular TB in all appendectomies performed varies from 0.1% to 3.0%, with an incidence of 1.5–30% among patients who are known cases of TB.\(^6\) The autopsy figures among patients of TB also reveal appendicular involvement in about 30% of the cases.\(^6\)

The mode of tubercular invasion of the appendix remains unclear, and it is difficult to ascertain whether it is continuous pathology along with the ileocecal involvement or it is an isolated event. It is because in the majority of reports in the literature as well as the present case the diagnosis of appendicular TB has been made after the histopathological examination of the appendicectomy specimens. The various ways by which the appendix can be involved are—by infected intestinal contents, and by extension of disease from neighboring ileocecal or genital TB or hematogenous route.\(^1,2\)

There is still a debate in literature regarding its involvement because a few authors consider the hematogenous route to be the common mode of spread, whereas others feel that secondary involvement of the appendix is more common.\(^3,9\) Secondary involvement of the appendix can either occur as a local extension of ileocecal TB as retrograde lymphatic spread from distant lesions, or as appendicular serositis and periappendicitis in peritoneal TB.\(^9\) However, the relative infrequency of involvement of the appendix in intestinal/ileocecal TB has been explained by the minimal contact of the luminal mucosa of the appendix with the intestinal contents.\(^1,7\)

Primary or isolated TB of the appendix has no detectable focus of infection anywhere else in the body and is extremely rare.\(^7\) In the present case also the only the appendix was involved, and there was no other detectable focus anywhere in the body. The mode of infection in these cases is considered to be ingestion of contaminated foods.

Symptoms and signs of the tubercular appendicitis are nonspecific. The disease can have presentation: (i) As acute appendicitis as in the present case, (ii) a chronic disease with recurrent episodes of right iliac fossa pain, vomitings, and diarrhea (abdominal TB), (iii) a latent one when discovered incidentally and the appendix is normal in gross appearance, (iv) can present as enterocutaneous fistula.\(^8,9\) The acute presentation can occur due to severe pyogenic infection that is superimposed on the tubercular appendix. Since there are no pathognomic clinical features of appendicular TB, a preoperative diagnosis is difficult to make. Laboratory and radiologic findings of appendicular TB have a low specificity. The diagnosis is usually made after histopathological examination of the appendicectomy specimen. Histopathologic examination will show lymphoid hyperplasia with associated caseating granulomas as in the present case also. Moreover, the preoperative diagnosis does not alter the management of these patients as treatment in patients presenting with signs and symptoms of appendicitis remains appendectomy. However, antitubercular therapy must be started in the postoperative period if the biopsy reveals TB.

To summarize, it is recommended that histopathological correlation of all appendicectomy specimens must be routine as sometimes it can bring a surprise in the form of appendicular TB and inflammation of the appendix.

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Figure 1: Microphotograph showing mucosa of appendix infiltrating with epithelioid cell granulomas (H and E, ×40).

Figure 2: High power view revealing epithelioid cell granuloma with giant cells (H and E, ×100).
then patient/parents will have to be counseled for the need of antitubercular treatment as for the abdominal TB.

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Conflicts of interest
There are no conflicts of interest.

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