Primary Tuberculosis of the Appendix: A Rare Cause of a Common Disease

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INTRODUCTION

Tuberculosis (TB) is a major public health problem in developing countries like India. India accounts for one-fifth of the global TB incident cases.[1] Gastrointestinal TB accounts for 3% of extra pulmonary TB, the most common site of involvement being the ileocaecal region. However, involvement of the appendix, lying so close to the ileocaecal region is rare. Primary TB of the appendix presenting as appendicular abscess is rarer with incidence of 0.1-0.6%.[2] Because of its rarity and absence of any specific clinical and radiological finding, diagnosis is made only after histopathological examination of the appendectomy specimen. In our review of cases, for 3 years, we report our experience with tuberculous appendicitis in a tertiary center in a nation where TB is still endemic.

CASE REPORT

A 20-year-old male patient presented to our outpatient department with complaints of colicky type of pain in right lower abdomen, associated with vomiting and fever since 5 days. On examination, patient was febrile and his vitals were normal. The physical examination showed marked tenderness in right iliac fossa. On initial work up, patients leukocyte count was 17,600/mm³. Since these symptoms were consistent with appendicitis, patient was taken for emergency surgery. On laparotomy, a diffuse inflammatory mass and abscess of the appendix [Figure 1] was found and appendectomy was done. Exploration of the bowel and mesentery, through the grid iron incision showed normal ileum, cecum, and mesentery. In post-operative period, he had wound infection, which was managed by regular dressing. Histopathological examination of the appendix revealed caseating epithelioid granulomas and lumen filled with neutrophilic infiltrates [Figures 2 and 3]. Patient was later evaluated for primary source of TB else where in the body. Computed tomography (CT) abdomen and pelvis showed normal bowel loops and mesentery [Figure 4]. Chest X-ray and colonoscopy [Figures 5 and 6] were normal. Three consecutive early morning sputum sample were negative for acid fast bacilli. Tuberculin skin test was negative and erythrocyte sedimentation rate (ESR) was 80 mm/h. Patient was started on standard anti-TB drugs, course similar to pulmonary TB.

DISCUSSION

Tubercular appendicitis is a rare manifestation, with occasional case reports in literature. It was first recognized by Corbin[3] in 1873. In 1896 Deaver[4] reported 16 cases of tubercular appendicitis in his series of 7610 appendectomies, Mayo in 1905 reported 29 (1888 appendectomies), Allen reported 2 (89 appendectomies), and Scott[5] in 1917, 1 case out of 179 appendectomies. In recent studies, Shah et al.,[5] reported 10 cases of tubercular appendicitis over a period of 10 years, Dymock et al.,[6] 2 cases in an analysis of 1000 appendectomy specimens. In a review of 2921 appendectomies carried out in a tertiary center in India, only 2.3% of cases were tubercular appendicitis.[5]
practice, for 4 years, we reported one case of tuberculous appendicitis out of 229 cases operated for appendicitis.

TB may affect primarily all organs and tissues of the body. The most common forms of non-pulmonary TB are TB of bones...
and joints (30%), urinary system (24%), lymph nodes (13%),
sexual organs (8%), cerebrospinal meninges (4%), and
alimentary system (3%). Appendicular TB can occur as a
primary or secondary form: The first form is due to a primary
infection of the intestinal mucosa by Mycobacterium bovis; the
second form is usually a consequence and complication of
primary pulmonary TB by M. tuberculosis. The infection of
appendix by tuberculous bacillus can occur by local extension
of ileocaecal or genital TB, hematogenous spread from a
distant focus and contact with infected intestinal contents
due to ingestion of food contaminated with tubercle bacilli.[3]

The disease can present either as a chronic disease with
recurrent episodes of fever, weight loss, right iliac fossa
pain or as acute appendicitis, a latent type that is detected
incidentally.[5,6] The acute presentation occurs due to severe
pyogenic infection that is superimposed on the tubercular
appendix. This type of presentation is seen during the
quiescent phase of pulmonary TB, if present.[3] The
presence of chronic abdominal pain of long duration in
young adults, pulmonary TB, poor nutritional status and
loss of weight, and the presence of chronic diarrhea have
been said to be indicative of TB of the appendix,[5,9] but
these symptoms are of doubtful value. Since there are no
clinical and radiological features that are pathognomonic
of appendicular TB, diagnosis is usually made after
histopathological examination of the appendectomy
specimen.

Based on histopathology, TB appendix can be described
as ulcerative (commonest form), hyperplastic and
ulcer-hyperplastic form. Other causes of granulomatous
appendicitis include parasite-related appendicitis,
Crohn’s disease, sarcoidosis and foreign body-induced
inflammation.[7] Signs and symptoms are nonspecific
and similar to those of several other chronic abdominal
diseases or it may simulate an acute appendicitis such as
the present case. The diagnosis of a secondary localization by
a pulmonary infection is usually simpler since the radiological
aspects of pulmonary TB are often characteristic. Further
evaluation is required to rule out primary intestinal TB.
High levels of adenosine deaminase (ADA) in the ascitic
fluid in peritoneal TB have been shown to be compatible
with the diagnosis of TB[8,9] with high sensitivity (100%) and
specificity (97%). Ultrasound abdomen scan can be
useful in detecting ascites and mesenteric lymph nodes.[10]

Determination of serum CA-125 concentration can be
used in tuberculous peritonitis, not only to make an accurate
diagnosis and ascertain the activity of the disease but also
to follow the response to treatment.[10] The most accurate
diagnostic alternative to surgery is endoscopic biopsy of
the lesions, which depends on the localization of lesions.
Histopathology shows caseating epithelioid cell granuloma
with Langhan’s giant cells.

Surgery followed by anti-tubercular therapy is the treatment
of choice. Supplement with corticosteroid is required if
associated with peritoneal TB. Standard anti-TB treatment
with four antituberculous drugs (isoniazid 5 mg/kg/day,
rifampicin 10 mg/kg/day, pyrazinamide 30 mg/kg/day,
and ethambutal 20 mg/kg/day) for two months followed by
isoniazid and rifampicin for 4 months is advocated.

REFERENCES

1. Available from: http://whoindia.org/en/Section3/Section123.htm.[Last
accessed on 2012 Dec.]
2. Bobrow ML, Friedman S. Tuberculous appendicitis. Am Surg 1956;91:389-93.
3. Scott JR. Tuberculosis of the Appendix. Ann Surg 1917;66:648-53.
4. Deaver JB. A treatise on appendicitis. Philadelphia: P. Blakiston and Son;
1896. p. 186.
5. Shah RC, Mehta KN, Jalunhwala JM. Tuberculosis of the appendix. J Ind
Med Assoc 1967;49:138-40.
6. Dymock RB. Pathological changes in the appendix. A review of 1000 cases.
Pathology 1977;9:331-9.
7. Gupta SC, Gupta AK, Keswani NK, Singh PA, Tripathi AK, Krishna V.
Pathology of tropical appendicitis. J Clin Pathol 1989;42:1169-72.
8. Singh MK, Arunabh, Kapoor VK. Tuberculosis of the appendix: A report
of 17 cases and a suggested aetio-pathological classification. Postgrad Med
J 1987;63:855-7.
9. Drissen EM, Zollinger R. Acute tuberculous appendicitis. Ann Surg
1935;101:740-5.
10. Rasheed S, Zinicola R, Watson D, Bajwa A, McDonald PJ. Intra-abdominal
and gastrointestinal tuberculosis. Colorectal Dis 2007;9:773-83.
11. Riquelme A, Calvo M, Saleh F, Valderrama S, Patilto A, Arellano M, et al.
Value of adenosine deaminase (ADA) in ascitic fluid for the diagnosis of
 tuberculous peritonitis: A meta-analysis. J Clin Gastroenterol 2006;40:
705-10.
12. Dinler G, Sensoy G, Helek D, Kalayci AG. Tuberculous peritonitis in
children: Report of nine patients and review of the literature. World J
Gastroenterol 2008;14:7235-9.
13. Mas MR, Gomert B, Saglamkaya U, Yamanel I, Kuzhan O, Ateykan U.
CA-125: A new marker for diagnosis and follow-up of patients with
tuberculous peritonitis. Dig Liver Dis 2008;32:957-7.

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