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Tuberculosis of the appendix: a rare presentation of a common infectious disease

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ABSTRACT

Tuberculosis (TB) has existed for millennia and remains a major global health problem. It causes ill-health in millions of people each year and in 2015 was one of the top 10 causes of death worldwide, ranking above HIV/AIDS as one of the leading causes of death from an infectious disease. This is despite the fact that with a timely diagnosis and correct treatment, most people who develop TB disease can be cured. Tuberculosis is typically affects the lungs, but can also affect other sites. Although the ileocecal region is the most affected part in intestinal tuberculosis, acute tuberculous appendicitis is a rare entity. The diagnosis is usually made after histopathological examination of the appendectomy specimen. Anti-tubercular therapy must be started in the post-operative period. In Iraqi national TB control program, no case was reported previously.

Key words: tuberculosis, appendix, histopathology.

INTRODUCTION

TB is an infectious disease caused by the bacillus Mycobacterium tuberculosis. It typically affects the lungs (pulmonary TB) but can also affect other sites (extrapulmonary TB).[1] Tuberculosis is still a common infection.[2]

In 2015, there were an estimated 10.4 million new (incident) TB cases worldwide, of which 5.9 million (56%) were among men, 3.5 million (34%) among women and 1.0 million (10%) among children. People living with HIV accounted for 1.2 million (11%) of all new TB cases. [1]

Although the ileocecal region is the most affected part in intestinal tuberculosis,[2] Affliction of the appendix with the disease remains a rarity form of gastrointestinal tuberculosis.[3] The reported incidence of appendicular tuberculosis in all appendectomies performed varies from 0.1 to 3.0 %.[4]

The exact mechanism of involvement of the appendix remains unclear. The various ways by which the appendix can be involved are haematogenous, by infected intestinal contents, and by extension of disease from neighbouring ileocaecal region.[4]

Primary tuberculosis of the appendix has not a detectable focus as infection anywhere else in the body, and is extremely rare. This diagnosis can be made if there is an absence of any evidence of tuberculosis after thorough investigations or at laparotomy.[3,4] The mode of infection in these cases is considered to be ingestion of contaminated foods.[4]

As there are no pathognomonic clinical features of appendicular tuberculosis, a pre-operative diagnosis is difficult. The diagnosis is usually made after histopathological examination of the appendectomy specimen. Pre-operative diagnosis does not alter the management of these patients as treatment in patients presenting with signs and symptoms of appendicitis remains appendectomy. However, anti-tubercular therapy must be started in the post-operative period if the biopsy reveals tuberculosis.[5]

CASE PRESENTATION

A 40 year-old male from a rural area, west of Baghdad, came to the hospital with complaints of severe pain in his abdomen. His condition started as a low grade fever for 3 weeks mainly at night associated with night sweating for 1 week before his presentation to the hospital also he complained from nausea for a day.

Patient reported no significant past medical history of any chronic disease. On examination he had tenderness localized in right iliac fossa.

On investigation haemoglobin and total white blood cells (WBC) count were within-normal. Ultra Sound examination of abdomen showed mild thickened oedematous bowel loops, no free fluid, no dilatation and no other significant finding. Chest X ray showed no abnormality.

The patient was diagnosed as appendicitis. Appendicectomy was done. Post operatively patient did well . Histopathological examination have showed acute inflammatory cell infiltrate with numerous epithelioid cell granulomatous reaction involving the mucosa and the muscle wall with central necrosis (caseating epithelioid granulomas) with langhan's giant cells. Feature suggestive of tuberculosis of the appendix.

Patient was referred to the National Specialized Centre for Chest and Respiratory Disease, where registration was done for him as extrapulmonary TB case (TB of appendix). Patient started treatment 2 months as intensive phase with 4 tablets of combined fixed dose 4 drugs formula anti-TB medication (INH, Rifadin, Pyrazinmaide, and ethambutol), then followed by 4 months continuation phase with 4 tablets of combined fixed dose 2 drugs formula anti-TB medication (INH and Rifadin). The patient was doing well with his medication and he was healthy after follow up.

DISCUSSION

Tubercular appendicitis is a rare manifestation. Although ileocecum is involved in over 40% of cases of abdominal TB, the appendix is involved in only about 1%,[6] with occasional case reports in literature. It was early recognized by Corbin[7] in 1873 and by Deaver[2] in 1896.

TB may affect primarily all organs and tissues of the body. 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 Mycobacterium tuberculosis.[4]

The disease can present either as a chronic disease with recurrent episodes of fever, weight loss, right iliac fossa pain or as acute appendicitis, or as a latent type that is detected incidentally on histopathological examination.[3,8] The acute presentation occurs due to severe pyogenic infection that is superimposed on the tubercular appendix.[2] There are no clinical features that are pathognomonic of appendicular TB, diagnosis is usually made after histopathological examination of the appendectomy specimen. 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.[9] Histopathology shows caseating epithelioid cell granuloma with Langhan's giant cells.

CONCLUSION

Tuberculosis of appendix is not associated with specific clinical features, and diagnosis is made only after histopathological examination. Therefore, it is recommended that all appendicectomy specimens should be send to histopathological examination to exclude tuberculosis especially in countries endemic with tuberculosis like Iraq.

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Abbreviation list: Human Immunodeficiency virus (**HIV**), Tuberculosis (**TB**), White Blood Cells (**WBC**)

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