

# Tuberculous Appendicitis

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## Abstract

A 12-year-old female patient presented with clinical signs and symptoms of acute appendicitis over duration of one day. Histopathology analysis of the appendectomy specimen revealed the presence of caseating epithelioid granulomas formed of lymphocytes, fibroblasts, epithelioid histiocytes and Langhan's giant cells, characteristic of tuberculous granuloma. We describe this case.

## CASE REPORT

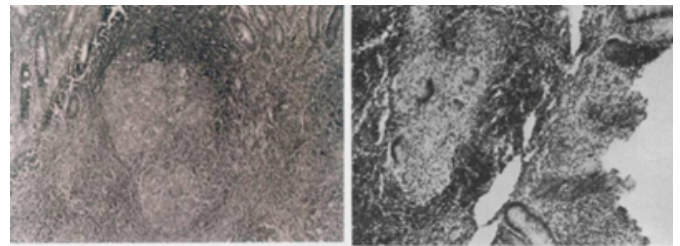
A 12-year-old female patient presented with clinical signs and symptoms of acute appendicitis over duration of one day. General examination revealed tenderness and rebound localised to the McBurney's point. Routine hematological and biochemical investigations were within normal limits except for raised total leucocyte count (16,000/ml). She was diagnosed as acute appendicitis and taken up for appendectomy in the emergency. Surgery was unremarkable, the appendix turgid, and showing signs of inflammation. She was discharged on the next day. On brief post operative follow-up, she developed an incisional hernia at the appendectomy site that was repaired electively later.

Histopathology analysis of the appendectomy specimen revealed the presence of caseating epithelioid granulomas formed of lymphocytes, fibroblasts, epithelioid histiocytes and Langhan's giant cells, characteristic of tuberculous granuloma (Figure 1,2,3). A blood sample was also taken for PCR-TB and a positive result was within hand in 14 days later.

The patient started anti-tuberculous therapy soon after the pathological report reached the surgical ward. Efforts to detect a primary focus of tuberculosis elsewhere in the body were unsuccessful. The patient is presently well on a follow up of one year.

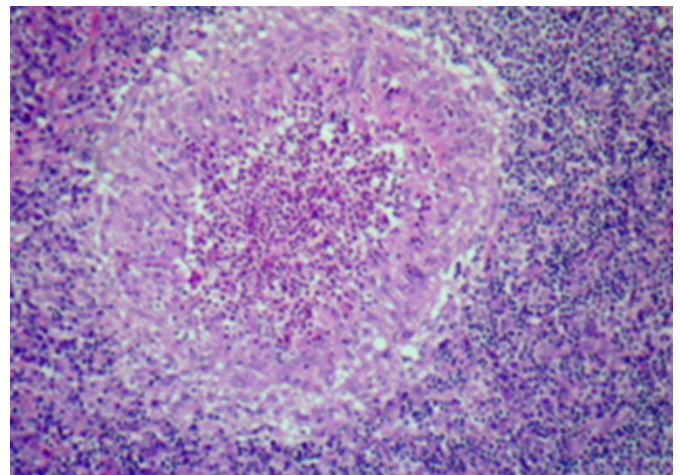
## Figure 1

Figure 1: Photomicrograph showing multiple epithelioid cell granulomas in the submucosa. The overlying mucosa is focally ulcerated. (H & E  $\times$  40)



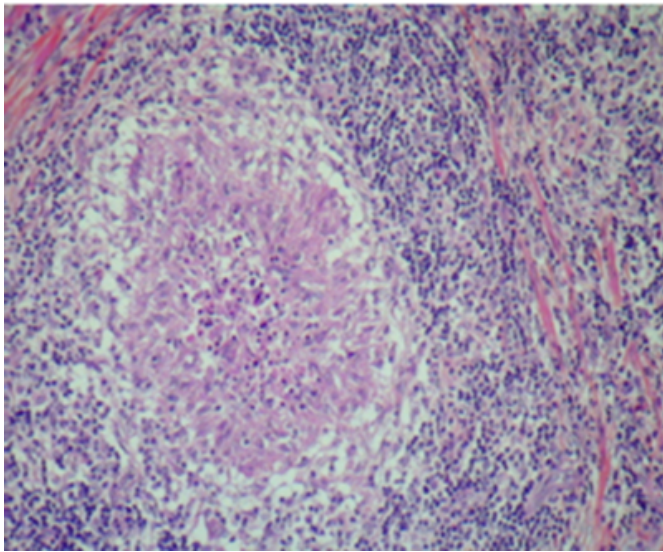
## Figure 2

Figure 2: Higher magnification of a submucosal epithelioid cell granuloma. (H & E  $\times$  200)



### Figure 3

Figure 3: Another epithelioid cell granuloma in submucosa of the appendix. (H & E × 200)



### DISCUSSION

Despite tuberculosis being not uncommon in Egypt, affliction of the appendix with the disease remains a rarity [1]. The reported incidence of appendicular tuberculosis in all appendectomies performed varies from 0.1 to 3.0 %, with an incidence of 1.5 to 30 % among patients who are known cases of tuberculosis [2]. Autopsy figures among patients of tuberculosis also reveal appendicular involvement in about 30 % of the cases [2]. A few authors have reported up to 46 to 70 % involvement of the appendix in patients with intestinal tuberculosis [3].

The exact mechanism of involvement of the appendix remains unclear. The various ways by which the appendix can be involved are – hematogenous, by infected intestinal contents, and, by extension of disease from neighboring ileocaecal or genital tuberculosis [2]. A few authors consider the hematogenous route to be the common mode of spread, whereas others feel that secondary involvement of the appendix is commoner [1]. Secondary involvement of the appendix can either occur as a local extension of ileocaecal tuberculosis, as retrograde lymphatic spread from distant lesions, or as appendicular serositis and periappendicitis in peritoneal tuberculosis [1]. However, despite the ileocaecal junction being the most common site of involvement in intestinal tuberculosis, the relative infrequency of involvement of the appendix in intestinal/ileocaecal tuberculosis has been explained by the minimal contact of the luminal mucosa of the appendix with the intestinal contents [1,4]. Primary tuberculosis of the appendix has no

detectable focus of infection anywhere else in the body, and is extremely rare. Ideally, to make the diagnosis of primary appendicular tuberculosis, a post mortem would be required, but for clinical purposes, this diagnosis can be made if there is an absence of any evidence of tuberculosis after thorough investigations or at laparotomy [1,2]. The mode of infection in these cases is considered to be ingestion of contaminated foods [2].

The disease can present either as a chronic disease (commonest presentation) with recurrent episodes of right iliac fossa pain, vomitings and diarrhoea, as acute appendicitis, or as a latent type that is detected incidentally [1,2]. 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 tuberculosis, if present [2]. The presence of chronic abdominal pain of long duration in young adults, pulmonary tuberculosis, poor nutritional status and loss of weight, and the presence of chronic diarrhoea have been said to be indicative of tuberculosis of the appendix [4,5], but these symptoms are of doubtful value, especially in Egypt, where tuberculosis and amoebiasis are not rare diseases [4].

As there are no pathognomic clinical features of appendicular tuberculosis, a pre-operative diagnosis is difficult. The diagnosis is usually made after histopathological examination of the appendectomy specimen and the most confirmatory test is PCR-TB analysis; although is expensive but it is the most sure method. 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-tuberculous therapy must be started in the post-operative period if the biopsy reveals tuberculosis.

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