

# Amoebic Appendicitis - A Rare Entity

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## Abstract

Appendectomy Is the most common surgical procedure performed in routine general surgical practice. However, not all the appendices removed, are submitted for histopathological examination in this part of the world. We reviewed 1400 appendices received by our department from within our hospital and from outside the hospital. Of these 13 cases were reported as amoebic appendicitis. These patients did not have any different clinical presentation from the patients who were reported as acute appendicitis without amoebae. Microscopically these appendices had minimal neutrophil polymorph infiltration accompanied by tissue necrosis and amoebic trophozoites within the appendiceal wall. After histological diagnosis, different tests (IHA and stool examination) were done to exclude a possibility of secondary involvement of the appendix, on 8 patients from our hospital which were negative, thus confirming that these patients had primary appendiceal involvement. Hence we recommend that all the appendices removed should be subjected for histological examination, since this may help in subsequent management of these patients (JPMA 44:92, 1994).

## Introduction

Appendectomy is one of the most common surgical procedures performed. A number of microorganisms have been implicated in the causation of the disease, including bacteria and occasionally parasites, especially in the tropics. These parasites include helminths and rarely amoebae. Very few reports have been published on amoebic appendicitis in the literature<sup>1-4</sup>. It is considered to be a rarity in a routine surgical pathology practice. We report 13 cases of amoebic appendicitis in a series of 1400 appendices submitted for routine histopathological examination.

## Materials and Methods

One thousand four hundred appendices were submitted for routine histopathological examination. The material included all the appendices from our hospital which are routinely submitted for histopathological examination and specimens from other hospitals in the city where routine submission of the appendices is not mandatory. The specimens were received in 10% buffered formalin. Three sections, one each from the tip, middle and the base, were taken from each appendix. All the sections were routinely processed and stained with hematoxylin and eosin stain (H&E). Periodic acid schiff (PAS) was done to clearly visualize the amoebae in the appendices, whenever seen or suspected on routine H&E staining.

## Results

Out of 13 patients (6 males, 7 females), 8 were inpatients of our hospital and 5 from other hospitals in Karachi on whom very limited clinical information was available. Their ages ranged from 14-60 years. Eleven patients presented with classical signs and symptoms of acute appendicitis whereas two presented with perforation and diffuse peritonitis. All the patients had leucocytosis in the range of 18,000- 20,000/cmm with marked neutrophilia and toxic granulation. Only one of 8 peritoneal fluid

cultures grew *E. coli*. Grossly the appendices measured 3 cm to 8.4 cm with average diameter of 1.2 cm. Microscopically the appendices showed necrosis with edema, congestion and infiltration with few polymorphonuclear leukocytes and numerous eosinophils and evidence of excessive mucin secretion. The amoebae were present on or just beneath the surface of the ulcerated mucosa and submucosa. They were recognized in H&E preparations because of their rounded contour and large size relative to the other cells. The PAS reaction was done to demonstrate them clearly. In some cases amoebae were seen in the wall and lumen of the blood vessels present in the mucosa and submucosa. Many of the trophozoites also showed ingested red blood cells.

Indirect hemagglutination test (IHA) in the serum was sent in two patients immediately after the histological diagnosis of amoebic appendicitis. In one patient it was strongly positive with 1:1024 dilution (control 1:32) whereas in the other case it remained negative. No evidence of extra-intestinal disease was found in the patient with positive IHA. One diabetic patient presented 2 weeks post-operatively with a liver abscess. No IHA studies were performed but aspirate from the abscess was consistent with amoebic liver abscess. The stool examination for amoebae, performed in 8 patients after the histological diagnosis, did not reveal either amoebic trophozoite or cysts.

## Discussion

Primary amoebic appendicitis is a rare entity and occasional case reports have been published before<sup>1,3,4</sup>. Recently a large series was published from India<sup>2</sup> in which 17 cases were reported, however, it was not specified whether the entity was primary or secondary to colonic involvement. In our series of 1400 appendices, 13 cases had primary amoebic appendicitis in which no evidence of colonic involvement was found. The patient with amoebic appendicitis diagnosed histologically had similar clinical presentation as the classical suppurative appendicitis and careful investigation failed to reveal any colonic involvement. The peripheral blood showed leucocytosis with neutrophilia. It was only on careful histological examination of the sections that a diagnosis of amoebic appendicitis was made. In tropical countries like Pakistan where intestinal amoebiasis is common, primary amoebic appendicitis though rare is not unusual.

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