

# A rare cause of acute abdomen in adults: Parasitic infection-related acute appendicitis

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## ABSTRACT

*Ascaris lumbricoides* is a common parasitic disease all over the world, especially in less developed countries. Acute appendicitis related to parasitic infection is a rare condition. Parasitic infections should be kept in mind in patients who are admitted to the emergency department with acute abdomen, especially in endemic areas.

**Keywords:** Parasitic infections, *ascaris lumbricoides*, acute appendicitis

## INTRODUCTION

Appendectomy due to appendicitis is the most common emergency surgical procedure in the world (1). There are several reasons in the etiology of appendicitis. Acute appendicitis secondary to parasitic infection is a rare condition. The incidence of appendicitis due to *ascaris lumbricoides* ranges between 17-26% within appendicitis related to parasitic infections (2, 3).

## CASE PRESENTATION

A twenty-three year old female patient presented to the emergency service with complaints of abdominal pain and nausea that started one day ago. Her vital signs were in the normal range and in her physical examination; sensitivity and rebound tenderness were detected in the right lower quadrant. The patient underwent other systemic examinations and her past medical history was normal. As for the laboratory values of the patient, the hemoglobin value was 12.5 g/dL, leukocyte count 11.500/mm<sup>3</sup> and neutrophilia was identified as 89%. No impairments were identified in the biochemical parameters. The plain abdominal X-ray was normal. The patient had a suspected acute appendicitis in the abdominal ultrasonography scan; therefore, an abdominal computerized tomography was obtained that revealed the diameter of appendix as 7 mm. The patient's consent was obtained and she was taken to surgery with preliminary diagnosis of acute appendicitis. In the laparoscopic exploration, it was observed that the appendix was edematous and inflamed. The patient underwent laparoscopic appendectomy. She was discharged on day 2 after an uneventful recovery. The pathology result of the patient was reported as parasitic appendicitis secondary to *ascaris lumbricoides* (Figures 1, 2).

## DISCUSSION

*Ascaris lumbricoides* is a parasite that is white-reddish in color, in cylindrical shape and with a length of 15-35 cm, with humans being its main host. *Ascaris lumbricoides* is a parasitic disease that is commonly observed throughout the world, primarily in underdeveloped countries. According to various studies conducted in Turkey, its incidence is in a wide range, i.e., 0.25-96%, which varies per region (4). The humans are infected via the ingestion of eggs in which larvae have developed through the oral route. The patients are generally asymptomatic. The clinical presentation changes depending on the number of migrating larvae and adult parasites present in the intestine. Normally, those who settle in the small intestine, especially the jejunum may result in abdominal pain and in intestinal obstruction when they are numerous (5-7). The diagnosis is made by examination of the stool for eggs and parasites.

## CONCLUSION

Acute appendicitis secondary to parasitic infection is a rarely seen condition. The role of parasitic infection in appendicitis is still controversial. There is limited evidence that support the relation between acute appendicitis and parasites. Acute appendicitis may develop as a result of the obstruction of the lumen by an adult parasite, whereas it may also develop due to secondary infection by the egg. The mechanism responsible for this pathology is the lymphoid hyperplasia, which develops due to secondary infection (8-10). In our case, the reason for acute appendicitis was a secondary infection. We believe that parasitic infections, which may lead to acute abdomen such as intestinal obstruction and liver abscess, need to be identified via community screening measures before resulting in consequent morbidity and mortality.

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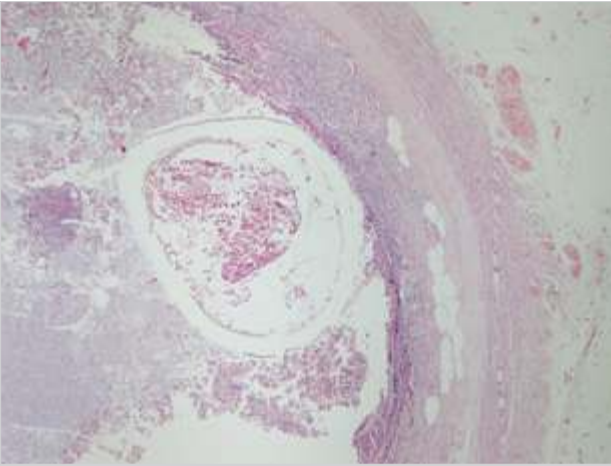


Figure 1. Ascaris lumbricoides (H&Ex10)

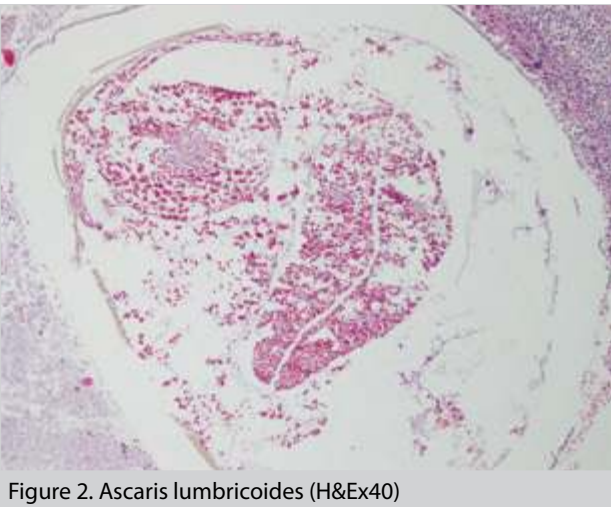


Figure 2. Ascaris lumbricoides (H&Ex40)

**Informed Consent:** Written informed consent was obtained from patient who participated in this case.

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