

Case Report

Ascaris lumbricoides, an uncommon cause of appendicitis

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ABSTRACT

Appendicitis is the first cause of acute abdomen. There are many causes of appendicitis, one of them is parasites, and, *Ascaris* is the most common helminth infection in tropical countries (Asia, Africa, South America). *Ascaris*, once it is ingested, lives at the digestive tract and it can end up in the appendix lumen and lead to appendicitis by luminal obstruction, in fact this presentation is rare and is still debatable in the literature. Diagnostic most of times is made retrospectively by the demonstrations of *ascaris* eggs on the pathological examination of the appendix. We present the case of 7 years old male that arrives to emergency room presenting clinically acute appendicitis with 24 hours from beginning with fever 38°C, intense mesogastrium abdominal pain with migration to right lower quadrant, anorexy, without nausea or vomiting, normal vital signs at physical examination intense abdominal pain, rebound, positive McBurney and psoas sign, leukocytosis with left shift. He underwent to emergency operation because suspect of appendicitis, we found a cecal appendix with *Ascaris lumbricoides* parasite in its lumen.

Keywords: *Ascaris lumbricoides*, Acute appendicitis, Parasitosis, *Ascaris*, Abdominal pain

INTRODUCTION

Appendicitis is the first aetiology for abdominal surgical emergency with incidence of 7-14%, is related to an obstruction of its lumen, with multifactorial causes as fecalith, lymphoid hyperplasia, tumours and intestinal parasites.

Ascariasis is an infection caused by a giant roundworm called *Ascaris lumbricoides*. It's endemic in tropical and underdeveloped countries and mainly infects malnourished children in unsanitary conditions.

Cases of appendicitis by *Ascaris* are infrequent. *Ascaris lumbricoides* is rarely found in the appendix (incidence 1-27% in endemic countries).³ Besides, the responsibility remains debated.² First case report published was in 1906 by Dr. Anley while he was serving in China.¹ Surgical

Management with appendicectomy is the gold standard and gives a definitive diagnosis.³

CASE REPORT

This is the case of a 7-year-old male with no medical history, he was received at emergency department for 38°C fever, intense mesogastrium abdominal pain with migration to right lower quadrant, anorexy without nausea or vomiting. He stays at emergency room with rest of the vital signs being normal.

Physical examination revealed mild dehydration, decreased intestinal peristalsis, abdominal rigidity, generalized pain and tenderness of the right lower quadrant, positive rebound and positive to McBurney and psoas signs. The rest of the examination was normal. The biological test showed hemoglobin 11.7 mg/dl,

leukocytosis at 18,800/mm³ (neutrophil at 82.2%) and general urine test was normal.

At evaluation by general surgery, we found his clinical evolution as positive to acute appendicitis with support of Alvarado scale, so we decided to perform emergent surgery for an appendicectomy, the surgery was performed without complications and we found a cecal appendix 10 cm long, edematous and low free inflammatory liquid in abdominal cavity without other important findings. The patient was discharged next day without complications being reevaluated in outpatient where micropathologist report refers to a congestive appendicectomy specimen with an *Ascaris lumbricoides* parasite in its lumen. We start anthelmintic treatment.



Figure 1: Appendicectomy specimen.

DISCUSSION

The earliest anatomical descriptions of the appendix data from 16th century. In 1561, Fallopius compared the appendix to a worm. Appendicitis is the cause most important of acute abdomen and needs emergency surgical treatment.² The main cause is lumen obstruction. Multiple entities reported (lymphoid hyperplasia the most common 60%, fecaliths 35%). Intestinal ascariasis is one of the least frequent (1.5-27%), Silva et al found that the helminth with greatest prevalence was *Enterobius vermicularis* (95.8%).⁴ Highest prevalence of ascaris occurs in tropical and semitropical countries.⁵ Lumen obstruction leads to increase in intraluminal pressure leading to mucosal ischemia, vascular congestion, then, mucosa becomes hypoxic and ulcerates resulting in compromise of the mucous barrier of the appendix.² More than one worm can be seen in the lumen even when there are no grossly or microscopically visible features of appendicitis.⁴ The role of parasitic infection in the aetiology of appendiceal disease has been known for many years and they were most seen in histologically normal appendices and rarely associated with the histological changes.⁶

Presence of parasites in appendix can give the symptoms of acute appendicitis and the diagnosis of appendicitis is clinical, but, ultrasound is a useful diagnostic technique to confirm.⁴ *Ascaris* as aetiology of appendicitis is confirmed after specimen of appendicectomy is examined by micropathologist. Patients with parasite associated appendicitis should undergo anti-helminthic treatment because appendicectomy eliminates the complication but not the cause of intestinal disease.⁷ Our patient underwent surgery with an appendicectomy and with an immediate good recovery and was discharged the next day and evaluated in outpatient where anthelmintic treatment was started.

CONCLUSION

We concluded that presence of parasites in appendix are not clinically same as acute appendicitis, it is important to remember that the presence of them in appendix can mimic an acute appendicitis clinically when parasite enters in the lumen of appendix. It is important to continue with anthelmintic treatment to treat the cause of the acute appendicitis in this case.

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