

## Case Report

### Ascariasis as cause of intestinal occlusion and concurrent appendicitis

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**Abstract.** Intestinal occlusion by ascariasis is a commonly seen socio-economic status low, is associated with poor sanitary hygiene. It is rare to see a case with both intestinal occlusion and appendicitis at the same time, as described in this report.

#### INTRODUCTION

*Ascaris Lumbricoides* frequently infects children whose lives share the following factors: live in poor sanitary conditions, extreme poverty, poor education and malnutrition, as seen in several places in Mexico.

*Ascariasis* and hookworm are transmitted through contact with contaminated soil. One characteristic of this infection is its reinfection cycles.

#### CASE REPORT

A 13-year-old female was admitted to the hospital because of an episode of abdominal pain.

Three days prior, the pain was sudden in onset. It started from the right iliac fossa. This pain was associated with nausea and vomiting of gastric contents. On admission, the patient

was experiencing moderate respiratory distress. The patient had neither intestinal gas transit nor evacuation. The girl was treated with amikacin 15mg/kg/day dose injectable for three days only and metronidazole 40mg/kg/day orally divided in three doses; the patient did not show any signs of improvement. The treatment was modified to include oral sennoside AB to 0.3mg/kg/dose every 24 hrs, butylscopolamine 5mg/dose 3 times a day, paracetamol to 15mg/kg/dose every 6 hours.

The patient continued to experience severe abdominal pain and was transferred to the emergency department of Surgery IMSS HRO-24 the following day.

The patient is from San Juan Mixtepec, Oaxaca, a municipality with a low socio-economic status. She is a native resident from Loxicha with poor dietary habits – both in quantity and quality. Open defecation is present in her family's living environment. She has not been sexually active and

reported regular menstrual cycles. She did not report other diseases. Her family denied knowledge of common diseases in their town.

Upon examination, her pulse was 100/min, blood pressure was 90/60, and her temperature was 37.5°C. She is pale and a little dehydrated. The abdominal examination showed tenderness in the right iliac fossa with rebound tenderness and signs compatible with intestinal obstruction.

Blood tests revealed a white blood cell (WBC) count 18,200/uL and increased granulocyte, and blood type O RhD positive. Coagulation test and serum chemistry values were normal. A plain abdominal radiograph was unremarkable.

With a provisional diagnosis of intestinal obstruction associated with acute appendicitis, the patient was taken to the operating room for an appendectomy with enterotomy.

Upon opening of the peritoneal cavity, 200 mls of serum hemorrhagic fluid was collected that had a foul odour. In addition, an occlusion of approximately 50 cm was identified, located in close proximity to the Ligament of Treitz. An enlarged hyperaemic appendix, 10x8 cm, with inflammatory process and abundant *Ascaris lumbricoides* was found: 187 *Ascaris lumbricoides* mostly females, the largest was 28cm (Figure 1). The peritoneal cavity was emptied of *Ascaris* and an appendectomy was also done.

Pharmacological postoperative treatment with analgesic, antimicrobial, and anthelmintic was given. A good postoperative course was observed. Remarkable improvement was observed at 72 hrs, with normal laboratory tests and no evidence of wound infection. An improvement in hygiene and dietary habits was recommended to the family.

## DISCUSSION

This report presents a case of intestinal occlusion and concurrent appendicitis in an adolescent patient. It provides vital information regarding how poor sanitary conditions in areas of extreme poverty and poor education are causing an increase in

pathologies in countries like Mexico in the 21<sup>st</sup> century.

In spite of the technological advances that allow early detection of disease, extreme poverty and poor education in Mexico result in poor hygiene and thus poor health for people who live in marginalized communities. People need health education and the government needs to ensure adequate public services, such as adequate sanitation facilities, such as potable water, toilet facilities, and satisfactory sewage disposal, adequate disposition of trash, elimination of noxious fauna, and a transmitting station, etc., are available.

Appendicitis is the most common condition in children requiring emergency abdominal surgery (Sami Akbulut, 28 noviembre 2010). Appendicitis is caused by nonspecific obstruction of the appendiceal lumen. Faecal material, undigested food and other foreign material, such as an enlarged lymphoid follicle, or a bend or twist of the appendix itself, may all be responsible. The obstruction causes a colic (Ibrahim Yetim, 2009), which in turn produces the poorly localized per umbilical abdominal pain



Figure 1.

typical of early appendicitis (Álvarez-Solís, 2010).

The clinical features of appendicitis in children are similar to that which is in adults and often include fever, anorexia, and periumbilical abdominal pain which migrates to the right lower quadrant, and may occur together with vomiting, with involuntary guarding as well as rebound tenderness over Mc-Burney's point (Lamps, 2004). The onset of pain typically occurs before vomiting, and is a sensitive indicator of appendicitis. (Colvin, 2007).

In addressing the acute abdomen in children, history and a physical examination are essential for diagnosis of acute appendicitis. Blood cytometry and an abdominal radiography usually confirm the diagnosis of acute appendicitis. However, in some cases, between 5 and 10%, the clinical picture may be modified due to prior analgesic or antibiotic usage.

*Ascaris lumbricoides* is an intestinal nematode; it is one of the most common helminthic human infections worldwide (Alejandro Zavala . Beatriz Zavala, 2012). The prevalence of infection is greatest in areas where suboptimal sanitation practices lead to increased contamination of soil and water. The majority of individuals with ascariasis live in Asia (73 percent), Africa (12 percent), and South America (8 percent), in which populations could have infection rates as high as 95 percent.

Complications associated with *A. lumbricoides* infections are fatal in about 1 percent of cases (Ramareddy, 2012). It is estimated that 20,000 deaths from ascariasis occur annually due to intestinal obstruction (Teneza Mora, 2006).

Albendazole (400 mg orally once) or mebendazole (100 mg twice daily for three days or 500 mg as a single dose) for treatment of ascariasis is recommend. In addition to anthelmintic therapy, surgical or endoscopic intervention is also used in a few cases (Nicola Zampieri, 2014)

In cases of intestinal obstruction, surgical intervention may be required.

In regions where *Ascaris* worms are abundant in soil, prevention and reinfection is extremely difficult. Although soil treat-

ments have been attempted, in general, they are not practical. Good sanitation to prevent faecal contamination of soil is required. (Gunawardena, 2004). The findings of this case highlight the need for better education to aid in the identification of risk factors, the importance of timely diagnosis, proper pharmacological treatment and prevention.

The authors declare no conflict of interest. Thanks to the patients who give us knowledge in our daily medical work.

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