INTESTINAL OBSTRUCTION BY ASCARIS LUMBRICOIDES IN A 10-YEAR-OLD GIRL: A CASE REPORT IN SOUTH-WEST NIGERIA.

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ABSTRACT

Ascaris lumbricoides is the most common intestinal helminth parasitizing human beings. Infestation with the worm is commonly seen in developing countries, however, with improvement in sanitary conditions, surgical sequelae is becoming quite rare. We present a case of a 10-year-old female who had intestinal obstruction from worm infestation, reviewed the literature and highlighted the need to consider the differential diagnosis in a patient who presents with similar clinical features in developing countries.

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INTRODUCTION

Ascaris lumbricoides, the largest and commonest of all human nematodes[1], continues to pose significant medical and surgical challenges in the tropics and subtropics, particularly in low-income countries[2]. Usually, the victims are children from low socioeconomic background, immunosupressed and malnourished[3]. Most A. lumbricoides infestations run asymptomatic courses and clinical disease is associated with high worm burden, with the symptoms related to either the larval migration stage or to the presence of adult nematodes in the intestines[4]. With improvement in sanitation practices, deworming programmes and successes of medical treatment, the incidence of clinically notable intestinal ascariasis has declined globally[5]. It is thus, quite rare to see children with severe enough infestation to cause intestinal obstruction. We present a case of a child who had intestinal ascariasis that mimicked intestinal obstruction and reviewed the relevant literature.

CASE REPORT

A 10-year-old female elementary (primary) school pupil who resides with her polygamous family in a semi-urban area in south-western Nigeria was admitted to the emergency room with progressively worsening colicky abdominal pain, abdominal swelling and vomiting of two days duration. She had passed three roundworms along with loose stools three days prior to presentation after she was given antihelminthic medications. Her weight-for-age was below the 3rd percentile and telltale signs of poor nutrition and hygiene were apparent, including widespread Tinea capitis and poor oral hygiene with dental plaques. Physical examination revealed marked abdominal tenderness and guarding. A clinical diagnosis of acute abdomen from small intestinal obstruction secondary to intestinal ascariasis was made.

Plain radiograph of the abdomen revealed markedly distended bowel loops (supine) and multiple air-fluid levels (erect) (Figure 1), baseline full blood count revealed haemoglobin of 12 g / dL, total white cell count of 16.2 x 109 / L (with relative neutrophilia (71%)). No ova or cyst of parasite was seen on stool microscopy. Serum electrolytes, urea and creatinine were normal, apart from hypokalemia of 3.0mmol / L.

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At laparatomy, the terminal ileum was noted to be distended (Figure 2) with worm impaction 15 to 20 cm from the ileo-caecal junction. A total of 106 adult worms were extracted via a 1.5cm enterotomy incision on the anti-mesenteric border of the terminal ileum (Figure 3). Incidental finding of inflamed appendix necessitated appendicectomy. The surgical wound was closed primarily. The parasites were identified by macroscopic morphological criteria as Ascaris lumbricoides[1].

The patient did well post-operatively and was discharged home on the 6th day after surgery. She had been followed up at the surgical outpatients for twenty-two weeks and made satisfactory progress with full recovery from the surgical procedure.

DISCUSSION

Intestinal obstruction, reportedly the commonest acute complication of A. lumbricoides[3], could be lethal with mortality rate as high as 5.7% for children under 10 years[6]. Even though surgical sequelae are becoming less common due to the success of medical treatment, potentially fatal intestinal obstruction is a major surgical complication that should be kept in mind as an important differential of acute abdomen.

The index case presented with three of the four classical symptoms of intestinal obstruction – colicky abdominal pain, vomiting and abdominal distension. Diarrhoea was however, an initial presenting symptom in this case unlike the obstipation that is expected in acute intestinal obstruction. This is similar to previous reports[7], and the pathophysiology could be traced to increased peristalsis at the early stages of bowel obstruction, thus reducing the transit time of the intestinal contents distal to the obstruction.

According to a review, it was estimated that the worm burden leading to intestinal obstruction is greater than 60, and "ten times higher" in fatal cases[6]. Despite high worm load, eggs may be absent in the stool such as in this case, if the infection is due to male worms only. Besides, ova are not seen in stool for at least 40 days after infection[8].

Peripheral eosinophilia was absent in this case; however this can be profound especially (though not exclusive to) when the larvae transit through the lungs with eosinophil levels being as high as 5 to 12 per cent[9].

In our environment, ascarid intestinal obstruction remains a strong differential diagnosis for surgical abdomen in children, especially when other predisposing factors are identified. Instituting prophylactic antihelminthic treatment for schoolchildren is recommended. This will serve a two-pronged function of treating the children, thereby breaking the transmission cycle by reducing the overall community worm burden. Furthermore, this has been proven to be cost-effective[10]. It is also important to implement preventive strategies including optimal sanitation practices, health education and adequate food hygiene practices.

Figure 1: Features of intestinal obstruction apparent on supine (left) and erect (right) films.

Figure 2: Bowel loops distended from distal small bowel obstruction.

Figure 3: Worms being extracted by enterotomy

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