

Intestinal Obstruction by massive Ascariasis simulating Intussusception

AO OGUNSEYINDE*, AMO SHONUBI† AND NA AKINGBEHIN††

Summary

Ogunseyinde AO, Shonubi AMO and Akingbehin N. Intestinal Obstruction by massive Ascariasis simulating Intussusception. *Nigerian Journal of Paediatrics* 1987; 14: 31. A case of massive infestation with ascaris producing intestinal obstruction and mimicking intussusception is reported. A correct diagnosis was made on plain abdominal radiography. The presence of wisp-like radiolucent lines or "spaghetti" pattern in an abdominal radiograph in a position corresponding to a clinically palpable mass, should raise the suspicion of ascariasis.

Introduction

In tropical Africa and other developing countries, human infestation with ascariasis remains common especially in children and the incidence of surgical complications of such infestation is high^{1 2}. The condition may mimic other causes of acute abdomen such as intestinal obstruction, appendicitis, peptic ulcer and acute urinary retention³⁻⁵. An accurate pre-operative diagnosis requiring a high index of suspicion is thus essential to prevent unnecessary surgical intervention.

This report presents a case of acute small intestinal obstruction due to ascariasis which clinically simulated intussusception but was

accurately diagnosed by radiography; the case illustrates the need to include ascariasis in the differential diagnosis of causes of intestinal obstruction.

Case Report

A two-year old boy presented at the University College Hospital, Ibadan, with a two-day history of repeated episodes of vomiting and periumbilical abdominal pain associated with the passage of "rice-water" stool. He had been vomiting about 6-8 times daily after meals; the vomitus consisted of watery bilious material with no blood or stale food particles. Apart from a history of having passed roundworms on a few occasions previously, the past medical history was not contributory.

On examination, he was ill-looking, moderately dehydrated and febrile with a rectal temperature of 38.2°C. The abdomen was uniformly distended. A large, tender and slightly mobile mass measuring 8cm in diameter was palpated in the right hypochondrium; the mass extended to the right iliac fossa. The bowel sounds were however,

University College Hospital, Ibadan

Department of Radiology

* Consultant/Lecturer

Department of Surgery

† Senior Registrar

†† Consultant/Senior Lecturer

Correspondence : Dr (Mrs) AO Ogunseyinde

not excessive. No mass was felt on digital examination per rectum, but loose, chocolate coloured stool stained the examining finger and a live roundworm was extracted from the rectum.

He was admitted with a presumptive diagnosis of enterocaeco-colic intussusception and was investigated accordingly. The plain radiograph of the abdomen showed multiple coiled and linear opacities in the right lumbar region, giving a "spaghetti" appearance; no abnormal fluid levels were present (Fig 1). A radiological diagnosis of incomplete intestinal obstruction due to ascariasis was made; this was confirmed at elective laparotomy.

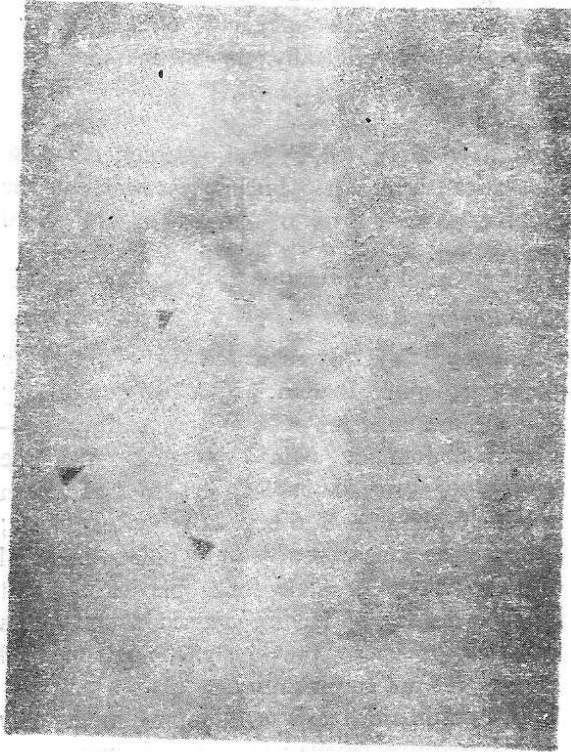


Fig 1. Plain abdominal radiograph showing a right iliac fossa mass with rounded and linear opacities due to entwined ascaris worms (arrows).

At operation, there was distal small bowel obstruction due to a massive quantity of entangled ascariasis in the terminal ileum,

appendix and proximal ascending colon (Fig 2). There was thinning and bluish discoloration of the bowel wall in this area, as well as enlarged mesenteric lymph nodes. The distal ileum, appendix and ascending colon were resected and an ileo-colic anastomosis performed. The resected specimen contained 480 ascaris worms.

Post-operatively, the patient did well and was symptom-free at last review as an outpatient, six months after surgery.

Discussion

Intestinal ascariasis is still a major problem in tropical countries and the most serious consequence of infestation with large worms are complications requiring surgical intervention, particularly intestinal obstruction caused by a bolus of worms^{3 6 7}. Intestinal obstruction is the second most common cause of acute surgical abdomen in Nigeria and next to obstructed inguinal hernia, intussusception is the second most common cause of intestinal obstruction⁸. Obstruction due to intestinal ascariasis might be difficult to differentiate from intussusception clinically, when there is a mass palpable in the right iliac fossa. The age of presentation of this patient is consistent with the impression from the numerous reviews of intussusception in infancy and childhood which have consistently indicated that 60-90% of intussusceptions in the paediatric age group occur in children under 2 years of age^{8 9-12}.

The cardinal symptoms and signs of intussusception in both children and adults are abdominal cramps, vomiting, melaena or fresh blood per rectum with or without diarrhoea and a palpable abdominal mass due to the intussusception. The clinical features in our patient were indistinguishable from those of intussusception, the palpable mass in this instance being due to the bolus of entwined worms. However, the abdominal masses in intestinal obstruction caused by ascariasis are usually more centrally located than they would be if the

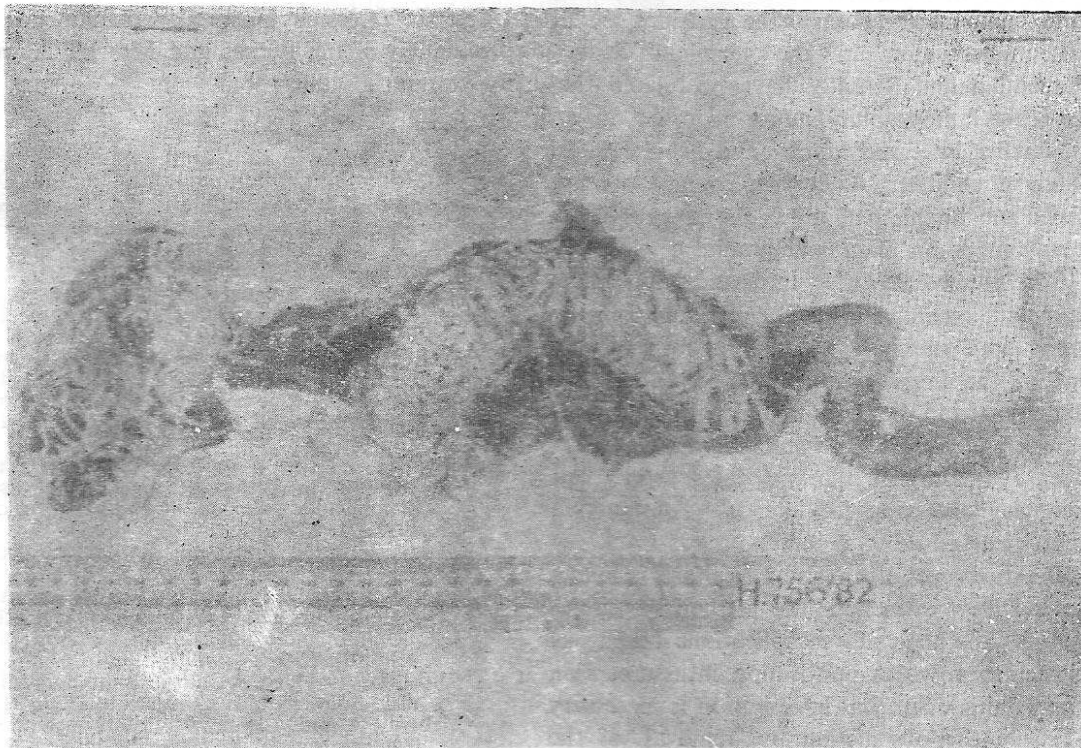


Fig 2. Specimen removed at operation, showing multiple entwined worms in the terminal ileum and ascending colon.

obstruction was due to intussusception of the common ileo-colic type, because the ascaris bolus is in the small intestine in the majority of cases⁶. The clinical presentation in our patient was unusual in the location of the ascaris mass as described above, as well as the absence of crepitations demonstrable in the palpable tympanitic mass which is said to be pathognomonic of ascariasis causing intestinal obstruction¹³. It is understandable that a presumptive clinical diagnosis of intussusception was made in this patient on the additional finding of chocolate coloured stool, even though the characteristic passage of mucus and blood per

rectum described in cases of intussusception, was absent.

Radiologically, soft tissue mass may be seen in the right iliac fossa or the right flank on plain abdominal radiography and the apex of the intussusception may be outlined by gas in the colon distal to it⁹. Similarly, a large collection of ascarides may be identified on plain abdominal radiograph. Aiken and Dickman¹⁴ have described a radiographic sign of wisplike radiolucent lines in a somewhat parallel arrangement with a more dense shadow, while Oluwasanmi⁶ described a "spaghetti" appearance due to the outlines of multiple ascarides entwined together; these two

findings are diagnostic, especially if they are located in the radiograph, in a position corresponding to the clinically palpable mass. Barium enema when attempted, would show completely normal colon and rectum as the ascarides usually cause obstruction in the terminal ileum⁶. Blumenthal and Schultz¹ have postulated that this latter radiographic finding might be due to the smaller intestinal lumina and heavier infestation in children. A barium enema was not carried out in this patient, as the diagnosis was already made on plain radiograph.

It is noteworthy that intussusception may occur as a complication of heavy infestation by ascaris with the bolus of worms forming the apex of the intussusception. This pattern has been reported in the series by Ajao and Solanke² in which ileo-colic intussusception was also present in four of the six cases who had emergency operation for intestinal obstruction due to ascariasis.

When a correct diagnosis of ascariasis is made, conservative treatment is the method of choice in the absence of complications such as obstruction, volvulus, perforation, intussusception or peritonitis³. Surgical intervention is necessary to relieve the obstruction by removal of the worms after an enterostomy. The worms can also be milked into the caecum if located in the terminal ileum. Sometimes, a major resection has to be carried out when gangrene or perforation has occurred. The distal ileum, appendix and ascending colon were resected in this patient because of the marked thinning of the bowel wall and the incipient perforation.

Acknowledgements

We are grateful to the members of staff of the Department of Medical Illustration Unit of the University College Hospital, Ibadan, for the production of the figures and Mrs LT Akinjide for secretarial assistance.

References

1. Blumenthal DS and Schultz MG. Incidence of intestinal obstruction in children infected with ascaris lumbricoides. *Amer J Trop Med Hyg* 1975; **24**: 801-5.
2. Ajao OG and Solanke TF. Surgical aspects of intestinal ascariasis. *J Natl Med Assoc* 1977; **69**: 149-51.
3. Olatoregun AB and Itayemi SO. Ascariasis in the biliary system. *W Afr Med J* 1979; **56**: 351-4.
4. Ogunbiyi OA and Komolafe OF. Intestinal ascariasis mimicking peptic ulcer. *W Afr J Radiol* 1982; **1**: 5-9.
5. Heyman H, Laver J and Beer S. Acute urinary retention as presenting symptom of ascaris lumbricoides infection in children. *Pediatrics* 1983; **71**: 125-6.
6. Oluwasanmi JO. Intestinal obstruction due to ascariasis. *Ghana Med J* 1968; **7**: 149-52.
7. Datubo-Brown DD. Bowel perforation by ascaris lumbricoides. *Postgrad Doctor* 1986; **8**: 210-1.
8. Ajao OG. Infantile intussusception. *Trop Doctor* 1980; **10**: 72-3.
9. Aird I. In: Aird I, ed. *A Companion to Surgical Studies*, Edinburgh: E Livingstone, 1957: 813.
10. Elebute EA and Adesola AO. Intussusception in Western Nigeria. *Br J Surg* 1964; **51**: 440-4.
11. Dennison WM and Shaker M. Intussusception in infancy and children. *Br J Surg* 1970; **57**: 679-84.
12. Ein SH and Stephens CA. Intussusception—354 cases in 10 years. *J Paediatr Surg* 1972; **7**: 700.
13. Wong WT. Intestinal obstruction in children due to ascariasis simulating intussusception. *Br J Surg* 1962; **49**: 300-2.
14. Aiken DW and Dickman FN. Surgery in obstructions of small intestine due to ascaris. *J Amer Med Assoc* 1957; **164**: 1317-23.

Accepted 21 July 1986.