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Case Report

Ascaris lumbricoides causing jejunal perforation after trivial trauma

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ABSTRACT

Ascariasis is one of the most common parasitic illnesses in human beings living in underdeveloped and developing countries. Infestation with this can result in wide range of manifestations. Most are asymptomatic, very few patients may develop complications like obstruction, perforation, cholangiohepatitis, pancreatitis, etc. We came across a patient, 20-year-old male who presented to the emergency department with acute abdomen followed by trivial trauma, investigations lead to peritonitis as diagnosis. On emergency laparotomy, unexpectedly *Ascaris* worms wriggling through jejunal perforation and live adult worms freely floating in peritoneal cavity were seen. It is suggested that trivial trauma might have exacerbated impending *Ascaris* perforation. A jejunal perforation of *Ascaris* after trivial trauma is a rare entity. This unique case has highlighted the fact that *Ascaris* can lead to intestinal perforation in heavily infested individuals particularly in tropical countries following trivial trauma.

Keywords: *Ascaris lumbricoides*, Peritonitis, Perforation, Trauma

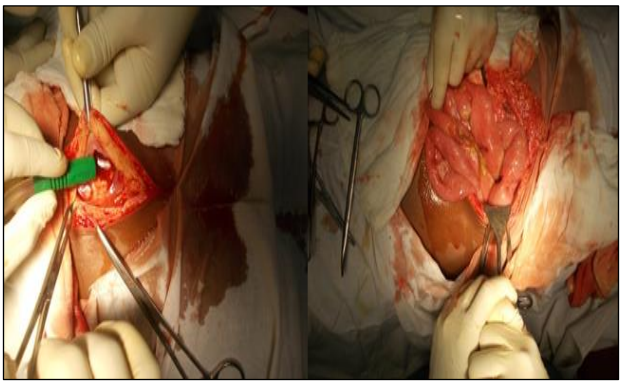
INTRODUCTION

Ascariasis is one of the most common helminthic disease in humans residing in countries with low standard of public health and hygiene, thereby making ascariasis highly endemic in developing countries.[1,2] The durability of eggs, high number of eggs produced per parasite, poor socio economic conditions lead to its high prevalence in tropical countries where wet and warm climate provides suitable environment conditions for its high prevalence.[3] Jejunum or ileum is the usual habitat of an adult worm.[4,5] The manifestations caused by Ascariasis are mainly due to immunological response of host to eggs, larvae and adult worm and GI complications like obstruction and nutritional deprivement. Ascaris can cause serious intra-abdominal complications such as intestinal obstruction, cholangiohepatitis, biliary obstruction, liver abscess, pancreatitis, acute appendicitis, intestinal perforation and granulomatous peritonitis.[5,6] The surgeon or physician treating the patient with Ascariasis should be aware of the abdominal complications, since delay in management may have fatal outcome. Perforation of GIT is a common cause of peritonitis. In most instance, this perforation is caused by peptic ulcer, acute appendicitis, acute suppurative cholecystitis or trauma. A case report of gastro intestinal perforation resulting from ascariasis is a distinct entity. This is a case report of a rare presentation of *Ascaris lumbricoides* with jejunal perforation following trivial trauma. This trivial trauma might have led to intestinal perforation from a concealed presence of an impending *Ascaris* perforation.

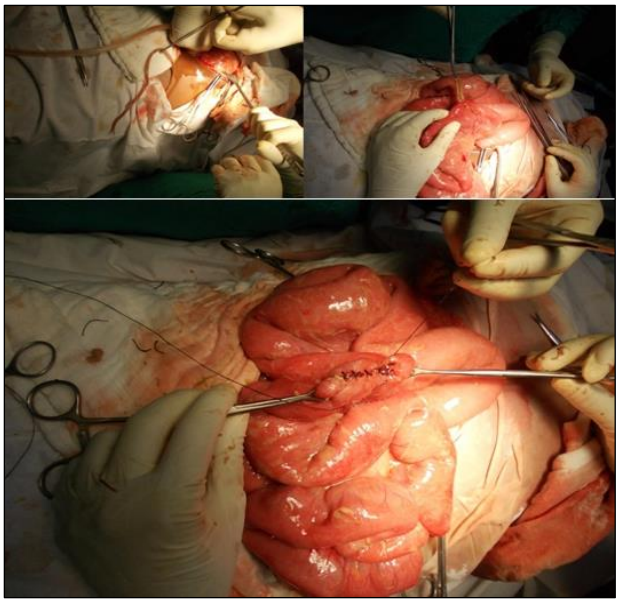
CASE REPORT

A 20-year-old male patient was admitted in Emergency Department with chief complaint of abdominal pain with history of blunt trauma to abdomen due to fall from vehicle which is moving at low speed. He resides in a small village near Kakinada of state Andhra Pradesh, India. Patient had no history of smoking and he was non-

alcoholic. Patient had history of intermittent abdominal pain and passage of blood in stools for many years since childhood. The physical examination showed the presence of malnutrition, mild dehydration and tachycardia. On abdominal examination, there was diffuse tenderness with guarding and rigidity all over abdomen, shifting dullness present and bowel sounds absent. Laboratory investigations including complete blood profile, serum electrolytes and ECG were done, and found to be normal. Erect X-ray abdomen showed presence of free air under the domes of diaphragm. Peritonitis was diagnosed and patient was taken up for emergency exploratory laparotomy, which was done under general anesthesia with endotracheal intubation.



Figures 1: Abdominal exploration and perforation identified.



Figures 2: Removal of worms, closure of wound.

Abdomen was opened with midline incision. The intraoperative findings were as follows: bile stained fluid and free-floating adult *Ascaris* worms in peritoneal cavity, a single perforation of size 1×0.5cm on anti-mesenteric border of jejunum 40 cm distal to DJ junction with a live round worm was found to be wriggling out of it and distal loops of small bowel were loaded with masses of worms. All worms in small bowel loop were milked out through perforation and biopsy was taken out from margin of perforation, which was closed in two layers primarily with 2-0 silk. Worms in peritoneal cavity removed gently. Peritoneal wash was given with warm normal saline. Abdomen closed over flank drains. Post operatively patient was given broad spectrum antibiotics and anti-helminthic therapy. Post-operative period was uneventful and recovery was good and patient was discharged after suture removal after 8 days. Biopsy showed focal acute nonspecific inflammatory reaction which implies that the inflammation was secondary to *Ascaris* infestation.

DISCUSSION

Ascaris lumbricoides, an intestinal round worm is one of the most common helminthic nematode infestation worldwide prevalent especially in tropics as China, India and Bangladesh.[6] The feco-oral route being common mode of *Ascaris* transmission by ingestion of raw vegetables and fruits contaminated by embryonated eggs.[5,6] Adult worms usually reside in GI tract may migrate to other parts resulting in wide range of clinical manifestations like volvulus, GI Obstruction, intussusception, cholangiohepatitis, pancreatitis, liver abscess, peritonitis, cholecystitis and Loefflers pneumonitis, granulomatous peritonitis and appendicitis.[4,5] The perforation of hollow viscus due to helminthiasis is rare. Two types of perforations by *Ascaris* worms are recognized: the primary and the secondary. In primary type worm perforates through healthy intestine, while in secondary type there is associated predisposing factors like enteric fever, tuberculosis, amoebiasis, etc.[9] In the primary perforation, it has been suggested that the worm produces lytic secretion and this combined with nibbling effect of the head of the worms can lead to perforation of the normally impenetrable bowel wall.[9,10] Trauma to the intraabdominal structures can be classified into 2 primary mechanisms of injury: compression forces and deceleration forces. Compression forces rupture the intestine by transiently increasing intraluminal pressure. Deceleration forces rupture the intestine at junction of relatively fixed and mobile parts of intestine. As seen in our case where trivial trauma increased intraluminal pressure leading to rupture of an impending perforation because of presence of Ascariasis. Literature also discusses 8 cases of hollow viscous perforation with *Ascaris* noted in ileal, jejunal and meckels diverticulum. In all these cases, distal milking of worms with closure of perforation was done.

It is saddening that in spite of worldwide improvement in public awareness of hygiene and good sanitation, there are still some parts of world, where prevalence of helminthiasis and their complications are common. The provision of clean drinking water, safe disposal of sewage, legislation to ensure high standards of good

hygiene, food hygiene and programmes to detect and monitor chronic carriers are advocated. These efforts should be complimented by mass anti-helminthic chemoprophylaxis which may further ameliorate the risk of early intestinal perforation.[11] Piperazine citrate, pyrantel pamoate, albendazole, and mebendazole are anti-helminthic drugs of choice.

CONCLUSION

A jejunal perforation with Ascariasis after trivial trauma is rare entity. Infestation with ascaris is common in developing and underdeveloped countries and should be evaluated. With delay in management, abdominal complications can have fatal outcome. In the present case trivial trauma precipitated with impending perforation leading to perforation of small intestine and symptoms of peritonitis. Enterotomy was the commonest procedure followed by milking of worms and resection anastomosis. Early endoscopic removal of worms results in rapid resolution of symptoms and prevents development of complications. Thus, this unique case has highlighted the probability of blunt trauma intensifying an impending perforation by round worms in this patient.

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REFERENCES

1. Reetinder C, Pankaj KG, Divya S, Ashwani K, Vijay KS, Amit S. Jejunal perforation due to single ascaris lumbricoides: a case report. J Surg Academia. 2013;3(1):35-7.
2. Agrawal R, Kumar P, Mohan N. Ascariasis presenting as acute abdomen: A rare case. Int J Adv Integ Med Sci. 2016;1(2):75-8.
3. Yetim I, Ozkan OV, Semerci E, Abanoz R. Rare cause of intestinal obstruction, Ascaris lumbricoides infestation: two case reports. Cases J. 2009;2(1):7970.
4. Baba AA, Ahmad SM, Sheikh KA. Intestinal ascariasis: the commonest cause of bowel obstruction in children at a tertiary care center in Kashmir. Pediatr Surg Int. 2009;25:1099-102.
5. Khuroo MS. Ascariasis. Gastroenterol Clin North Am. 1996;25(3):553-77.
6. Seltzer E. Ascariasis. In: tropical infectious diseases: Principles, pathogens and practice. 1st ed, Guerrant, RL, Weller, PF (Eds), Philadelphia: Churchill Livingstone; 1999:553.
7. Schulze SM, Chokshi RJ, Edavettal M, Tarasov E. Acute abdomen secondary to ascaris lumbricoides infestation of the small bowel. Am Surg. 2005;71(6):505-7.
8. Sandouk F, Haffar S, Zada MM, Graham DY, Anand BS. Pancreatic-biliary ascariasis: experience of 300 cases. Am J Gastroenterol. 1997;92(12):2264-7.
9. Singh S, Tayal A, Kaur V. Ascaris lumbricoides and duodenal perforation: a case report. JIMSA. 2011;24(4):181-2
10. Rao PL, Shenoy MG, Venkatesh A, Warrier PK. Intraperitoneal round worm abscess. Indian Pediatr. 1980;17:633-6.
11. Tracy JW, Webster LT. Drugs used in the chemotherapy of helminthiasis. In: Hardman JG et al., eds. Goodman and Gilman's the pharmacological basis of therapeutics, 9th ed. New York, McGraw-Hill; 1996:1009-1023.

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