



# Ascaris in infected pancreatic pancreatic necrosum: a case report of an intraoperative surprise

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**Introduction and importance:** Ascariasis lumbricoides is a common gastrointestinal tract helminthic disease in developing countries and is also a cause of hepatobiliary and pancreatic disease in endemic areas of the world. Involvement of the pancreatic duct by worms and associated pancreatitis is less common than the hepatic and biliary involvement.

**Case presentation:** A 38-year-old patient was admitted with a diagnosis of alcohol-induced acute pancreatitis and managed conservatively. However, the patient's condition worsened after 2 weeks, and a CT scan revealed an acute necrotic collection with gas foci. After failed percutaneous pigtail catheter drainage, laparotomy was performed, revealing a necrotic collection in the right paracolic gutter, with the entire area frozen and a worm observed in the necrosum. The colon and small bowel were intact without perforation. The suspicion arose that the worm might have either migrated from a duodenal perforation, which had possibly sealed after the acute phase, or migrated from the major pancreatic duct. Debridement of easily accessible necrotic tissues was performed, and the patient was admitted to the intensive care unit (ICU). Unfortunately, the patient tested positive for COVID-19, and a few days later, blood was observed in the drain. Re-exploration revealed diffuse blood oozing, and the abdomen was closed with packing.

**Conclusion:** The route of ascaris migration to necrosum or its association with severe acute pancreatitis needs to be ensured in endemic areas. Cautious use of antihelminthic therapy in endemic areas could prevent fatal pancreatobiliary complications and its associated mortality.

**Keywords:** ascariasis lumbricoides, case report, pancreatic necrosum, perforation

## Introduction

Ascariasis lumbricoides is a common gastrointestinal tract helminthic disease in developing countries and is also a cause of hepatobiliary and pancreatic disease in endemic areas of the world<sup>[1,2]</sup>. Involvement of the pancreatic duct by worms and associated pancreatitis is less common than the hepatic and biliary involvement<sup>[2–5]</sup>. Sequelae of acute pancreatitis like pancreatic necrosum and hemorrhage due to ascariasis and identification of the worm in the necrosum or the duct has been seldom reported in the literature. Here, we present an unusual instance of Ascaris found in necrosum during a necrosectomy in a case of acute pancreatitis with infected pancreatic necrosis.

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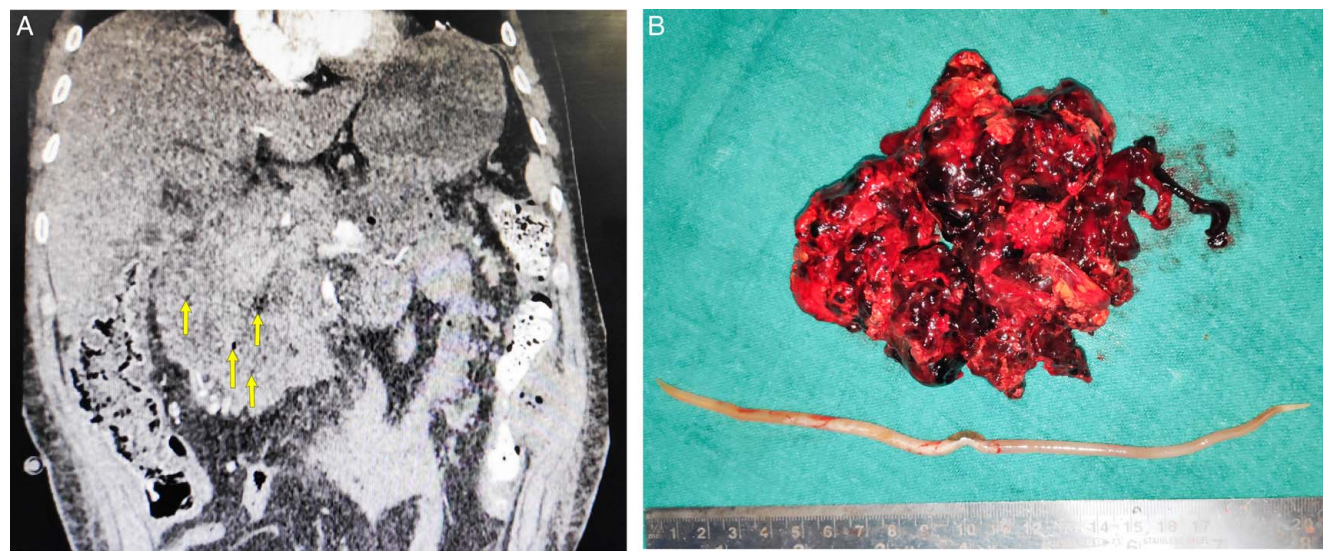
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## HIGHLIGHTS

- Ascariasis lumbricoides is a common gastrointestinal tract helminthic disease in developing countries.
- Sequelae of acute pancreatitis like pancreatic necrosis and hemorrhage due to ascariasis and identification of the worm in the necrosum or the duct has been seldom reported in the literature.
- Ascariasis rarely needs surgical intervention; however, when it complicates with intestinal perforation or associated pancreatitis, it can develop into fatal complications and result in mortality.
- Early identification and deworming with antihelminthic therapy in endemic areas could prevent fatal future possible complications.

## Case presentation

A 38-year-old patient was admitted with a diagnosis of alcohol-induced acute pancreatitis. The initial management included standard conservative measures including intravenous fluids, analgesics, and anti-emetics. Despite the conservative treatment, the patient's condition worsened after 2 weeks, and a CT scan revealed an acute necrotic collection with gas foci predominantly in the right paracolic region, central abdomen near the root of the mesentery, and posterior to the third part of the duodenum (Fig. 1A). After failed initial management with the percutaneous catheter, he was subjected to an open necrosectomy with a bilateral subcostal incision. All loose necrosum, along with



**Figure 1.** (A) CT scan reveals an acute necrotic collection with gas foci predominantly in the right paracolic region, central abdomen near the root of the mesentery, and posterior to the third part of the duodenum. (B) A dead worm was identified in the pancreatic necrosus.

collection, were removed. Surprisingly, a dead worm was observed in the necrosus (Fig. 1B). The colon and small bowel were intact without perforation and the area around the duodenum was frozen and friable. The possibility of the worm coming out via duodenal perforation (sealed afterward) or the main pancreatic duct via necrosus was kept, and the abdomen was closed with multiple wide bore drains. Biliary origin was ruled out, as no bile was observed intraoperatively or in the post-operative drain. The patient had slow improvement in over 1 month in the intensive care unit (ICU). However, the patient developed hemorrhagic shock on the 32nd postoperative day. Re-exploration revealed diffuse blood oozing, and the abdomen was closed with multiple packs. Unfortunately, he died on the first postoperative day after re-exploration.

Discussion

The adult worm is usually located at the jejunum, and it can induce hepatobiliary, pancreatic, and various gastrointestinal complications<sup>[6]</sup>. Ascaris may stay within the lumen of the small

intestine asymptotically or might migrate to the biliary or pancreatic ducts to produce pancreaticobiliary symptoms<sup>[1]</sup>. Ascaris-induced pancreatitis is somewhat common in endemic areas; however, migration of Ascaris into the pancreatic duct is a rare clinical finding<sup>[1–3]</sup>.

Moreover, there are reports of ascaris-induced duodenal perforation in endemic areas<sup>[7,8]</sup>. Therefore, we believe that the worm should have penetrated the pancreatitis-induced inflamed duodenal wall. Another possibility could be colonic perforation, as there is evidence of colonic necrosis and perforation due to roundworms<sup>[9]</sup>. Both the colon and small bowel were intact without perforation and those sites were ruled out. Ascariasis rarely needs surgical intervention; however, when it complicates with intestinal perforation or associated pancreatitis, it can develop into fatal complications and result in mortality. Early identification and deworming with antihelminthic therapy in endemic areas could prevent fatal future possible complications.

Sequelae of acute pancreatitis like pancreatic necrosus and hemorrhage due to ascariasis and identification of the worm in the necrotic tissue or the duct have been seldom reported. When

**Table 1**  
Literature reporting the association ascariasis with necrotizing pancreatitis.

Author	Year	Number of patients	Intervention	Clinical course	Site of worm	Associated complications	Outcome
Liozon <i>et al.</i> <sup>[10]</sup>	2011	1	N/A	N/A	N/A	Transient complete heart block due to migrating larva Occult cholangitis	N/A
Maddern <i>et al.</i> <sup>[11]</sup>	1992	1	Not done	Intensive care with ventilatory support needed immediately after admission Improved after surgical intervention	Ampulla	Severe respiratory failure	Death
Chen and Li <sup>[2]</sup>	1994	2	Laparotomy and debridement of necrotic tissues	Improved after surgical intervention	N/A	One patient had hemorrhagic ascites	Recovered and discharged
Sharma <i>et al.</i> <sup>[12]</sup>	2015	1	Worm removed by ERCP	Conservative management	CBD	No severe complications	Discharged after recovery
Chuabio <i>et al.</i> <sup>[13]</sup>	2024	1 (gravid female)	Not done	Conservative and supportive management	D2 duodenal segment	No severe complications	Discharged after recovery. Viable fetus at discharge

we performed a literature search in PubMed using search terms “((ascaris) OR (ascariasis)) AND (necrotizing pancreatitis)”, we mostly identified the case reports reporting the incidence of acute necrotizing pancreatitis caused by *Ascaris*. The details of the identified literature, clinical course, and outcomes of the patients are reported in Table 1<sup>[2,10–13]</sup>. Some studies have reported the migration of *ascaris* into the pancreatic duct to induce severe acute pancreatitis<sup>[2,4]</sup>. However, to the best of our knowledge, infestation of *ascaris* in pancreatic necrosus is rarely reported in literature.

## Conclusion

*Ascaris* in pancreatic necrosus is an unusual finding and is rarely reported in literature. The route of *ascaris* migration to necrosus or its association with severe acute pancreatitis needs to be ensured in endemic areas. Cautious use of antihelminthic therapy in endemic areas could prevent fatal pancreatobiliary complications and their associated mortality.

## Ethical approval

IRB approval was not required for the case report.

## Consent

Written informed consent was obtained from the patient’s relatives for publication and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

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## Author contribution

P.R. and K.B.D.: study design, concept, and original draft (writing of the manuscript); P.R., K.B.D., S.G., and S.A.: data collection and surgical therapy for the patient; P.R., K.B.D., S.G., B.R.Y., B.P.S., and S.A.: review and edit.

## Conflicts of interest disclosure

The authors declare no conflict of interest.

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Not applicable.

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## Data availability statement

Available upon reasonable request.

## Provenance and peer review

The paper was not invited.

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