

Case report

A Rare Intruder of the Biliary Tract - Gallbladder Ascariasis

Abstract

Gallbladder ascariasis is a rare yet significant condition caused by the migration of *Ascaris lumbricoides* into the biliary system. This case report describes a 54-year-old male presenting with persistent upper abdominal pain and perianal itching. Imaging studies, including ultrasonography and MRCP, confirmed the presence of gallbladder ascariasis. Despite initial medical management with Albendazole, symptoms persisted, necessitating laparoscopic cholecystectomy. Postoperative findings revealed fragments of *Ascaris lumbricoides* within the gallbladder. The patient experienced complete resolution of symptoms following surgery and continued anthelmintic therapy. This report underscores the importance of considering gallbladder ascariasis in endemic regions when evaluating unexplained abdominal pain. Early diagnosis through imaging and appropriate management, including surgical intervention, when necessary, can prevent severe complications.

Keywords

Gallbladder ascariasis, *Ascaris lumbricoides*, ultrasonography, laparoscopic cholecystectomy, anthelmintic therapy.

Introduction

Commented [JD1]: *Ascaris lumbricoides* usually does not cause perineal itching- have you performed colonoscopy to see for rare presence of colonic round worm in this patient?

Ascariasis is a common helminthic infection caused by *Ascaris lumbricoides* [1]. It is a significant global health issue, particularly in tropical and subtropical regions. While the parasite usually resides asymptotically in the jejunum, its migration into the biliary tract can lead to several complications. Gallbladder ascariasis constitutes only around 2% of biliary ascariasis cases [2]. Understanding the management of gallbladder ascariasis is crucial due to its potential to cause severe complications if not treated promptly, including biliary colic, cholecystitis, and obstructive jaundice [3].

Despite its clinical significance, there is limited research on the optimal management strategies for gallbladder ascariasis. Our report aims to address this gap by providing insights into the surgical and non-surgical management of gallbladder ascariasis, especially in male patients. We found that early surgical intervention combined with appropriate medical therapy results in better outcomes for male patients with gallbladder ascariasis.

Case Report

A 54-year-old male presented to the outpatient department of surgery with complaints of persistent dull upper abdominal pain for one month and perianal itching for ten days. There were no associated symptoms such as fever, jaundice, or passage of worms in vomitus or stools. Abdominal examination revealed mild tenderness in the right hypochondrium with no pallor or icterus.

Laboratory investigations showed eosinophilia and alkaline phosphatase levels of 288 IU/L. Ultrasonography of the abdomen was suggestive of a distended gallbladder with an elongated mobile echogenic structure within the gallbladder lumen, with internal echoes suggestive of a parasitic infestation most likely ascariasis. The thickness of the gallbladder wall was normal (Figure 1). Magnetic Resonance Cholangiopancreatography was performed which revealed a curvilinear, tubular, hypointense structure within the gallbladder with a maximum thickness of 4 mm, suggestive of gallbladder ascariasis (Figure 2).

The patient was started empirically on Albendazole 400 mg twice a day for one week; however, the pain persisted, and the patient was taken up for laparoscopic cholecystectomy (Figure 3). Examination of the extracted gallbladder showed fragments of *Ascaris lumbricoides* worms and bile. (Figure 4). Albendazole was continued for two more weeks, and complete resolution of symptoms was noted on follow-up.

Discussion

Commented [JD2]: Rather than a global health issue it is a significant health issue in tropical and subtropical regions where incidence of ascariasis infestation is high.

Commented [JD3]: why only in males?

Commented [JD4]: Please mention the number of eosinophils count.

Commented [JD5]: "daily" may be a better word

Commented [JD6]: On USG you found mobile worm which mean a live worm. After a week of Albendazole post op you found fragments of worm in the GB. That means the conservative treatment had worked. Could you have postponed your operation in absence of any infection/ sepsis or major symptoms. The fragments could have autolysed or may have come out!

Commented [JD7]: Why was albendazole continued for total 3 weeks?

Ascariasis is one of the major diseases prevalent in tropical and subtropical countries [4]. It is transmitted through the ingestion of faecal material containing eggs. The parasite primarily resides in the jejunum but can migrate to various organs, including the liver, heart, lungs, and biliary system. Gallbladder ascariasis remains a rare diagnosis due to the anatomical barriers posed by the narrow and tortuous structure of the cystic duct [5]. Chronic abdominal pain without other typical symptoms underscores the importance of considering gallbladder ascariasis in endemic regions. The clinical symptoms of gallbladder ascariasis are nonspecific, often presenting as vague abdominal pain, fever, or vomiting.

Ultrasonography is the most sensitive diagnostic investigation due to its accessibility and ability to visualize live worms in real time. It plays a critical role in diagnosis, showing characteristic findings such as curvilinear tubular structures with a "triple sign" or the "belly dance" movement of worms on ultrasound [6].

The established treatments for biliary ascariasis include anthelmintic drug therapy, endoscopic extraction, and surgical removal [7]. Anthelmintic drug therapy is typically administered before or just after surgical intervention.

Although conservative management is an option, it is ineffective in cases where the worm is deceased, or there are concomitant stones or strictures that impede the worm's return to the duodenum. In such cases, surgical intervention via laparoscopic cholecystectomy is recommended, particularly in cases of recurrent symptoms, inflammation, or the presence of a dead worm, to prevent complications such as abscess formation and biliary strictures [8].

Endoscopic procedures are especially effective in managing ascariasis in the bile duct. However, they are ineffective in managing gallbladder ascariasis.

Conclusion

Gallbladder ascariasis, though rare, should be included in the differential diagnosis for patients presenting with unexplained upper abdominal pain, particularly in endemic areas. Ultrasonography is invaluable for diagnosis. While conservative therapy may be attempted, cholecystectomy remains the definitive treatment for symptomatic cases, followed by deworming therapy.

References

Commented [JD8]: Ascariasis is transmitted by ingestion of infective larvae.

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Commented [JD10]: "Dead" may be better word.

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1. Maguire JH. Intestinal nematodes (roundworms). Principles and practice of infectious diseases. 2005.
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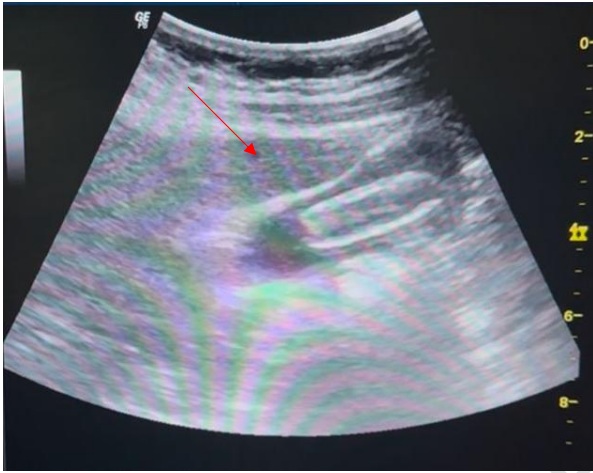


Figure 1 Thickness of the gallbladder wall

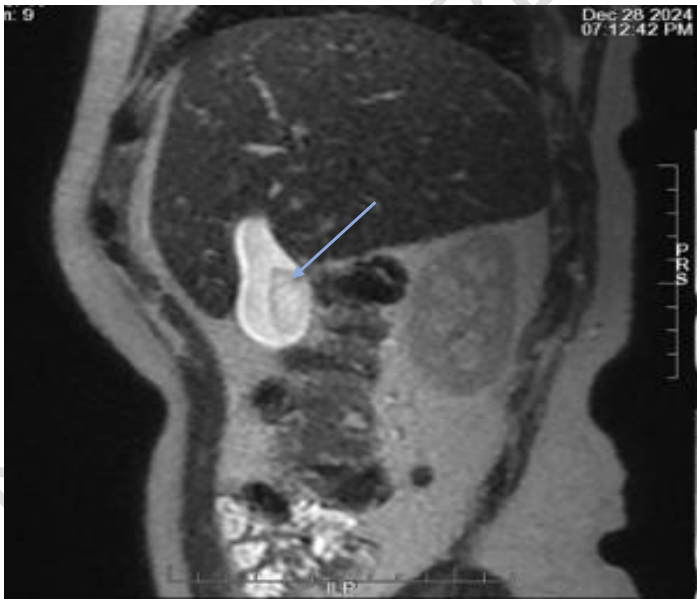


Figure 2 Gallbladder ascariasis



Figure 3 Laparoscopic cholecystectomy



Figure 4 *Ascaris lumbricoides* worms and bile