

## Case Report

## Biliary Ascariasis: A difficult extraction

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## Abstract

Hepatobiliary ascariasis (HBA) is a common complication of *Ascaris* infestation. It is reported mostly from developing countries. It is a common cause of biliary colic and cholangitis in some parts of India. It is also proposed as an etiology of a subset of patients with recurrent pyogenic cholangitis (RPC). Conservative management, endoscopic removal of the worm wherever needed and deworming is the accepted treatment approach. We herewith present a unique challenge that we encountered during worm removal. The patient was a 35-year-old female with 3 days history of epigastric pain, fever with rigors and vomiting. Her biochemical evaluation showed mild neutrophilic leukocytosis, mild elevation of aminotransferases and alkaline phosphatase. Ultrasound abdomen showed a tubular filling defect in the common bile duct extending in to the left hepatic duct. On endoscopic retrograde cholangiopancreatography (ERCP), the extraction was difficult because of left ductal stricture and a knot at the end of the worm. Such a worm conformation is rarely reported in the literature. In addition to presenting a challenge during removal it may act as a nidus for further infections and damage to the biliary tree particularly if the worm is dead or decaying. RPC is a disease with high morbidity and mortality. HBA is argued as an inciting event in significant number of cases. Recognition of such worm conformations emphasizes the need of meticulous ductal clearance at the time of ERCP, subsequent deworming and improved sanitation to protect such case from subsequent dreaded complications.

## Key words

Biliary ascariasis, cholangitis, endoscopy

## Introduction

Ascariasis is the most common helminthic infection, with an estimated worldwide prevalence of 25% (0.8–1.22 billion people).<sup>[1]</sup> Usually asymptomatic, ascariasis is most prevalent in children of tropical and developing countries, where they are perpetuated by contamination of soil by human feces or use of untreated feces as fertilizer.<sup>[2]</sup> Biliary ascariasis is reported from different parts of India and particularly from Kashmir.<sup>[3,4]</sup> Symptomatic Patients usually presents with biliary colics, cholangitis or pancreatitis. Endoscopic Management is needed if symptoms persist or worsen on conservative management.


Method described is Endoscopic retrieval of the worm using a Snare, forceps, dormia basket or balloon.<sup>[4]</sup> We here by describe a case of difficult common bile duct (CBD) *Ascaris* extraction.

## Case Report

A 35-year-old female presented to us with 3 days history of severe epigastric pain radiating to back associated with vomiting and intermittent rigors. On examination, she had tachycardia and epigastric tenderness, rest of the examination was normal. Her biochemical parameters showed neutrophilic leukocytosis, normal serum bilirubin, mildly elevated serum glutamate-pyruvate transaminase and alkaline phosphatase (less than twice normal. Serum amylase was normal.

Ultrasound (USG) abdomen showed tubular mobile filling defect in the CBD extending in to left hepatic duct. A provisional diagnosis of Biliary Ascariasis was made, and the patient was taken up for endoscopic retrograde cholangiopancreatography (ERCP). Cholangiogram showed

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a tubular filling defect in the CBD and poor entry of dye in to the left system. Worm could be caught easily with a basket. On attempting removal, it did not come out on gentle traction. One further pulling it came out with a snap.

Examination of the removed worm showed one end of the worm to be broken. Repeat cholangiogram was performed showed normally Right system and poor entry of contrast in the left system. Suspecting a stricture we decided to pass the guide wire up in the left system before injecting further. With a lot of efforts a Terumo wire could be inserted deep in to the left system. A balloon sweep retrieved the remaining part of the worm, which to our surprise had formed a knot near the end [Figure 1].

Subsequent occlusion cholangiogram a stricture in left hepatic duct and upstream dilatation [Figure 2]. A stent was placed across the stricture, and she was dewormed. She remained well till her first follow-up after 2 weeks and subsequently she was lost to follow-up.

## Discussion

Hepatobiliary ascariasis (HBA) is a common complication of the intestinal ascariasis particularly in Asian countries. Poor sanitation, unplanned development with increasing urbanization and the use of human excreta as a fertilizer predispose to ascariasis.<sup>[5]</sup> Intestinal complications like colics, obstruction, volvulus or Intussusception develop more commonly in children with increasing worm load.<sup>[3]</sup>

Pancreaticobiliary complications develop more frequently in women in third or fourth decade and present with biliary colics, cholangitis or pancreatitis. The exact reasons are unknown, but a role of Progesterone in relaxation of Sphincter of Odi is proposed.<sup>[4]</sup>

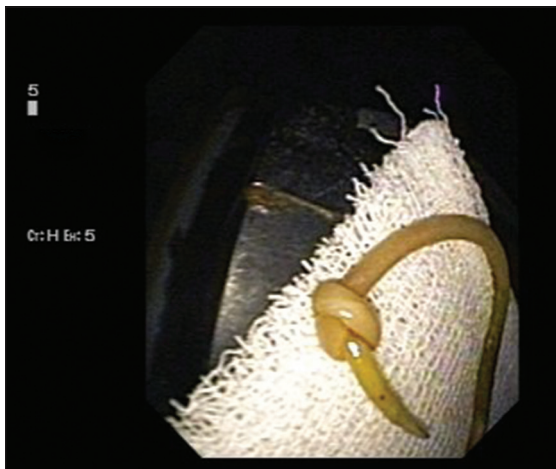
The characteristic USG features of worms in the CBD are multiple, long, linear, parallel echogenic strips, usually without

acoustic shadowing are helpful in diagnosis in up to 85% of cases.<sup>[6]</sup> In presence of coexistent multiple stones, dead or decaying worms computed tomography scan of abdomen or MRCP may be of help where a “bull’s-eye” and “eye-glass” appearances is described to describe worm in CBD.<sup>[7]</sup> Recently endoscopic ultrasound has become the modality of choice for evaluation of dilated CBD and has been used effectively in cases with equivocal USG reports.<sup>[8]</sup>

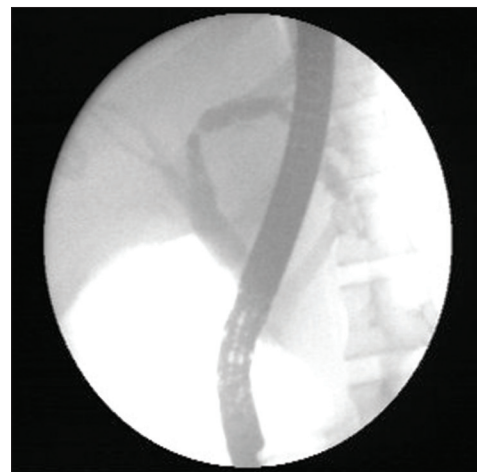
Majority responds to conservative management with IV fluids antibiotics and subsequent deworming. ERCP is needed in one-fourth of cases with ongoing symptoms. It involves removal of the worm whenever feasible or placement of the stent and subsequent removal on the second session.<sup>[4]</sup>

Our case may be a case of chronic biliary ascariasis with left hepatic duct stricture and left system dilatation due to prior episodes of Parasitism and cholangitis. Knotting of worm that was encountered in our case is a rarely reported complication. It emphasizes the need for proper examination of the extracted worm for completeness. We were lucky in our case to have a live round worm because such a form will be barely recognizable if worm is decaying and will make a complete clearance difficult. The retained worm fragments then may act as a nidus for further infections and damage and thus may initiate a sequence leading to recurrent pyogenic cholangitis (RPC), a disease with high morbidity of poor prognosis.<sup>[9]</sup> Therefore, it is reasonable to do thorough cleaning in all cases of HBA where a dead or decaying worm is found. We practice and propose placement of naso-biliary drain in all such cases and daily flushing with sterile saline till clear bile is seen in the drain and subsequent cholangiogram shows clear CBD.

Resembling cholangiographic findings in our case lay further credence to the proposal that many of the cases labeled as RPC may actually be cases of recurrent biliary ascariasis and thereby amenable to thorough cleaning of CBD, effective deworming better sanitation.



**Figure 1:** Extracted worm segment with knotted end



**Figure 2:** Cholangiogram – showing dilated and irregular left ductal system with stricture (after worm extraction)

## Conclusion

We present a case of biliary ascariasis where removal of the worm was difficult because of the spontaneous knotting of the worm in the biliary system. The problem was further complicated by the presence of Biliary Stricture in the involved system. It also emphasizes the need of a thorough inspection of the removed worm for completeness of the procedure. If there is doubt particular when dead or decaying worm or fragments are extracted, naso-biliary catheter flushing and drainage and subsequent cholangiogram may be planned to save the patient from a chain of avoidable complications.

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