

Gallbladder Ascariasis: Radiological Evaluation and Successful Elimination by Medical Treatment after Migration to the Intestine

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Citation

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Abstract

Infestation of the gallbladder with *Ascaris Lumbricoides* is very rare. We reported cholecystitis secondary to ascariasis in a 26-year-old woman. Abdominal ultrasonography (US) demonstrated a mobile, tubular echogenic structure with a central anechoic lumen in the gallbladder. Patient was followed up by US examination and treated by antiparasitic drugs according to US findings.

INTRODUCTION

Ascariasis is a common infestation in many developing countries. The adult form of *Ascaris lumbricoides* usually resides in the human intestinal lumen (most frequently in the jejunum and middle ileum) and does not cause symptoms (1,2). Migration of the worm into the biliary tree is not uncommon and is considered to be a frequent complication of intestinal ascariasis (1,2,3). Gallbladder involvement is very rare; it accounts for 2.1% of all biliary Ascariasis cases (4).

Ultrasonography (US) is the most commonly used diagnostic modality for this pathology (4,5,6,7,8). Computed tomography (CT) and magnetic resonance imaging (MRI) are also useful (1, 2).

Most of the patients were treated by endoscopically or surgically (3, 4). There are few reports on medical treatment (3). In this paper, we present the radiologic findings, clinical manifestations and successful medical treatment of a patient with gallbladder ascariasis.

CASE REPORT

A 26-year-old woman (419467) presented with right upper quadrant and epigastric pain and diarrhea of 8 days duration. On physical examination, there was tenderness at the right upper quadrant and epigastrium. Laboratory data showed hypochromic anemia and eosinophilia (hemoglobin: 8.4g/dl, white blood count: 5900/mm³, eosinophils: 23%). Other abnormal results were as follows: SGOT 57IU/L (normal

0-40IU/L), SGPT 52IU/L (normal 0-43IU/L) and alkaline phosphatase 157IU/L (normal 37-147IU/L).

Abdominal US (Aplio, Toshiba, Tokyo, Japan) demonstrated a non-shadowing, mobile, 5cm-long, tubular echogenic structure (Fig. 1) with a central anechoic lumen (Fig. 2) in the gallbladder.

Figure 1

Figure 1: Tubular echogenic structure in the gall bladder lumen

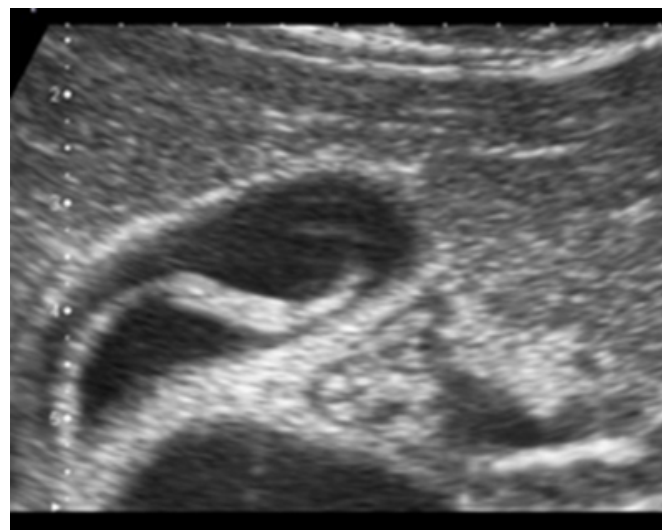
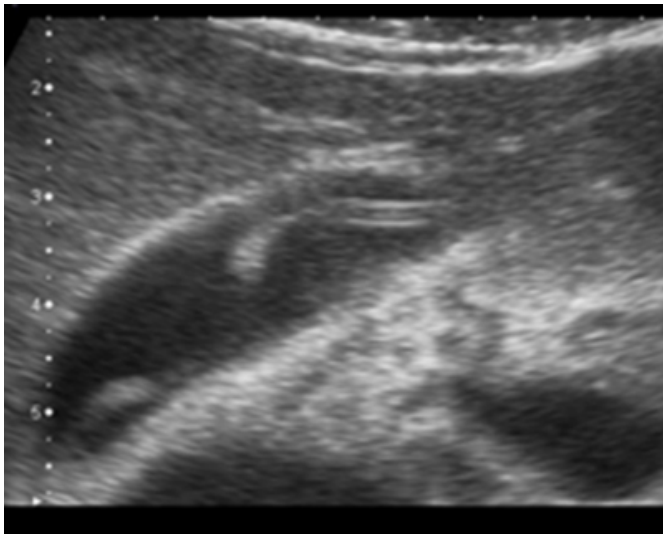


Figure 2

Figure 2: Central anechoic lumen of the worm



The biliary tree was not dilated and the choledochus epithelium was thickened. Cholecystitis secondary to ascariasis was diagnosed. Oral intake was stopped and the patient was treated conservatively with intravenous fluids, analgesic and albendazole (400mg/day) for the parasites. Patient was followed up daily by US examination. Three days later the worm had disappeared from the gallbladder. MRI (Vision, 1.5T, Siemens, Erlangen, Germany) was performed at the same day for confirmation. Routine T2-weighted fat suppressed axial and coronal images were acquired which were followed by MR cholangiogram using TSE (Turbo Spin-Echo) and fat suppressed HASTE (Half Fourier Single-Shot Turbo Spin-Echo) sequences in the oblique, coronal and axial planes. On MRI images, there was no abnormality in the gallbladder lumen and biliary tree. It was assumed that the worm had migrated out of the gallbladder and biliary tree. At the same day dead *Ascaris lumbricoides* bodies (8x0.5 cm) and eggs were found in the patient's feces. At 3th day patient's complain and abdominal findings were relaid, so intravenous fluids, analgesic were stopped and oral nutrition was restarted. Albendazole was stopped at 7th day and patient was discharged at the same day.

DISCUSSION

Infestation of the gallbladder with *Ascaris lumbricoides* may result in severe complications such as empyema, pericholecystic abscess and sepsis (4, 6). The worm can enter biliary tree from duodenum and cause variable symptoms such as biliary colic and obstructive jaundice (1, 2). In our patient, epigastric and right upper quadrant pain was the

main symptom, which is considered to be due to the acute cholecystitis. Contrary to our expectations there was no biliary tree dilatation in our case, but thickened choledochus epithelium may be a sign of chronicity of the pathology.

Ultrasonography is an important noninvasive diagnostic procedure in the evaluation of these patients, who usually present with a clinical picture suggesting gallstone disease (7). Ultrasonographic appearance of biliary ascariasis is well documented. The worm is usually seen as a long, linear or curved, nonshadowing echogenic strip containing a central, longitudinal anechoic tube, probably representing the digestive tract (2, 4, 7, 8, 9). Movement of worm in the biliary tree is characteristic and is confirmatory evidence in ultrasonographic diagnosis (2).

Gallbladder ascariasis responds poorly to medical treatment because less than 1% of the antiparasitic drugs are excreted in bile (4). Therefore, patients are usually treated by endoscopy or surgery. Javid et al reported that only ten of 47 patients expelled the worm spontaneously, while 37 required surgical treatment. After the worms migrate out of biliary tree into the duodenum, the antiparasitic drugs can act upon them (3). In our case we administered albendazole and after the worm disappeared from the biliary tree we found dead *Ascaris* bodies in the feces. US readily show the movement of the worm in the biliary tree and this is an advantage of US over CT and MRI (6).

In conclusion, US provides a simple, rapid approach for the diagnosis and follow-up of patients with Ascariasis and other imaging modalities such as MRI are rarely needed. On the other hand, in some patients, gallbladder Ascariasis can be treated by medical treatment. Therefore according to us, the medical treatment should be the initial choice before surgery.

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References

1. Arya PK, Kukreti R, Arya M, Gupta SN. Magnetic resonance appearance of gall bladder ascariasis. *Indian J Med Sci.* 2005; 59:208-210.
2. Ng KK, Wong HF, Kong MS, Chiu LC, Tan CF, Wan YL. Biliary ascariasis: CT, MR cholangiopancreatography, and navigator endoscopic appearance--report of a case of acute biliary obstruction. *Abdom Imaging.* 1999 ; 24:470-472
3. Malik AH, Saima BD, Wani MY. Management of

hepatobiliary and pancreatic ascariasis in children of an endemic area. *Pediatr Surg Int.* 2006 ; 22:164-168

4. Javid G, Wani N, Gulzar GM, Javid O, Khan B, Shah A. Gallbladder ascariasis: presentation and management. *Br J Surg.* 1999; 86:1526-1527.

5. Cha DY, Song IK, Choi HW, Chung EA, Shin BS, Song YW, et al. Successful elimination of *Ascaris lumbricoides* from the gallbladder by conservative medical therapy. *J Gastroenterol.* 2002; 37:758-760

6. Danaci M, Belet U, Selcuk MB, Akan H, Bastemir M. Ascariasis of the gallbladder: radiological evaluation and

follow-up. *Pediatr Radiol* 1999; 29:80

7. Gomez NA, Leon CJ. Ultrasound in the diagnosis of roundworms in gallbladder and common bile duct. Report of four cases. *Surg Endosc.* 1993; 7:339-342.

8. Khuroo MS, Zargar SA, Yattoo GN, Dar MY, Javid G, Khan BA, et al. Sonographic findings in gallbladder ascariasis. *J Clin Ultrasound.* 1992 ;20:587-591

9. Koumanidou C, Manoli E, Anagnostara A, Polyviou P, Vakaki M. Sonographic features of intestinal and biliary ascariasis in childhood: case report and review of the literature. *Ann Trop Paediatr.* 2004 ; 24:329-335.

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