Successful Elimination of *Ascaris lumbricoides* from the Gallbladder by Conservative Medical Therapy

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Abstract Migration of *Ascaris lumbricoides* into the gallbladder is rare, unlike ascariasis of the bile duct and when it does occur, treatment is generally by endoscopic or surgical extraction. We describe a case of the successful treatment of gallbladder ascariasis with conservative therapy.

Keywords *Ascaris lumbricoides* · Gallbladder · Acute cholecystitis · Ultrasonography

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 [1–3]. Gallbladder involvement is very rare; it accounts for 2.1 % of all biliary tract ascariasis cases [4]. Ultrasonography (US) is the most commonly used diagnostic modality for this pathology [4–6]. Computed tomography (CT) and magnetic resonance imaging (MRI) are also useful [1, 2]. Most of the patients were treated through endoscopy or surgery [1, 3]. There are a few reports of medical treatment [1, 4]. In this article, we present the radiologic findings, clinical manifestations and successful medical treatment of a patient with gallbladder ascariasis.

Case Report

A 17-year-old Indian girl with the complained of pain in upper abdomen followed by nausea and vomiting for 10 days was being treated by a local practitioner, and when the pain worsened, she was admitted to our hospital. On examining the patient, her pallor was found to be afebrile; blood pressure and pulse rate were in the normal range. On examination of the abdomen, tenderness was found in epigastrium, and the rest of abdomen was soft and non-tender. Bowel sound was normal, no lump palpable. Laboratory data showed hypochromic anaemia (haemoglobin 8.4 g/dL). Liver function test

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reports were normal. Abdominal ultrasonography showed a long, linear, moving echogenic structure in

the gallbladder neck into the common bile duct, but no abnormal dilation of the bile duct.

The patient was kept on conservative treatment of IV fluids, antibiotics, analgesics, and albendazole (400 mg/day) for 4 days.

She was followed up after 4 days by US examination. Repeated US showed the *Ascaris* had moved to the common bile duct.

After 5 days, the patient vomited *Ascaris* and also passed *Ascaris* in stool. After 5 days, repeated US showed disappearance of *Ascaris* from the gall bladder and common bile duct.

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 the biliary tree from the duodenum and causes variable

symptoms such as biliary colic and obstructive jaundice [1, 2]. In this 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 this case. Ultrasonography is an important non-invasive diagnostic procedure in the evaluation of the patients who usually present with a clinical picture suggesting gallstone disease [3]. Ultrasonographic appearance of biliary ascariasis is well documented. The worm is usually seen as a long, linear or curved, no shadowing echogenic strip, containing a central, longitudinal anechoic tube, probably representing the digestive tract [3,

4, 7, 8]. Movement of worms 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 antihelminthic drugs are excreted in bile. Therefore, patients are usually treated by endoscopy or surgery. Javid et al reported [6] that only 10 of 47 patients expelled the worm spontaneously, while 37 required surgical treatment. After the worms migrate out of the biliary tree into the duodenum, the antihelminthic drugs can act upon them [3]. In this case, we administered albendazole for 7 days and we found dead *Ascaris* bodies in the faeces and in vomiting. US readily show the movement of the worm in the biliary tree and this is an advantage of US over CT and MRI [2, 5, 6], which is supported by Cha et al [4].

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 medically. Therefore, the medical treatment should be the initial choice before surgery.

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