Case report

Acalculous cholecystitis: Ascariasis as an unusual cause

M. Ayhan Kuzu, Yunus Öztürk, Hasbi Özbek, and Atilla Soran

Abstract: Migration of roundworms into the biliary tree is a well-known complication of Ascaris lumbricoides infestation of the intestine. Massive infestation of the hepato-biliary tract is uncommon but can lead to complications if not treated. Here, we report two cases of acalculous cholecystitis caused by ascariasis.

Key words: acalculous cholecystitis, ascariasis

Introduction

Ascariasis is one of the most common helminthic diseases in humans. The adult worm usually lives in the intestinal lumen, without producing any significant symptoms. Occasionally the roundworms migrate into the biliary duct system, where they cause symptoms of biliary colic, pyogenic cholangitis, and acalculous cholecystitis. The majority of patients with biliary ascariasis can be managed with symptomatic treatment and antihelminthic drugs, unless there are complications. We report two cases of acalculous cholecystitis caused by ascariasis.

Case reports

Case 1

A 42-year-old woman presented with a history of right upper quadrant abdominal pain, vomiting, and fever, with chills of 2 days' duration. She had no past history of hepato-pancreato-biliary disease or abdominal surgery. Significant findings on physical examination were a fever, temperature 39°C, pulse rate of 98 per min, blood pressure 100/60 mm Hg, and tenderness with signs of localized peritonitis over the right hypochondrium. Routine blood biochemistry showed a white cell count 22.4 × 10⁹/L, and liver function test results were slightly elevated. Ultrasonography (USG) revealed a distended gallbladder that contained a single worm that exhibited active motility (Fig. 1). The common bile duct, intrahepatic biliary ducts, and liver were normal. The patient was managed with intravenous fluids, gentamicin, ampicillin, and metronidazole. However, there was no clinical improvement on this regimen over a 12-h period, and at this time a laparotomy was performed for acute complicated cholecystitis. Exploration revealed gangrenous cholecystitis due to obstruction of the cystic duct with a roundworm. The common bile duct and liver were normal. Cholecystectomy was performed and a live adult worm, 17 cm in length, was found in the gallbladder. The patient had an uneventful recovery. Pyrantel pamoate was given orally for 3 days after the operation and a large number of worms were passed with the stool. Ultrasonography after the treatment showed no abnormality. The patient remained well on follow-up 6 months later.

Case 2

A 37-year-old woman presented with a history of right upper quadrant abdominal pain and epigastric fullness of relatively recent onset. She had had intermittent abdominal pain during the 6 months previous to hospitalization. The significant finding on physical examination was tenderness with guarding over the right hypochondrium. Her past medical history was unremarkable. Routine blood biochemistry was normal. Plain roentgenogram of the abdomen demonstrated a calcification over the right hypochondrium. Ultrasonography revealed a non-shadowing image of ascaris in the main bile duct (inner tube appearance, Fig. 2a). The patient was managed with iv fluids, broad spectrum antibiotics,
and pyrantel pamoate. She responded to this treatment without exhibiting any complications. Repeat USG was done 2 days after hospitalization and a roundworm was detected in the gallbladder next to the wall (Fig. 2b). The main bile duct was normal. On serial USG examinations, the gallbladder size and wall thickness regressed and the ascaris in the gallbladder disappeared within 10 days (Fig. 2c). The patient had an uneventful recovery.

Discussion

The most common clinical presentation of *Ascaris lumbricoides*, apart from passage per rectum or the vomiting of worms, is small bowel obstruction by a bolus of worms. In addition, *Ascaris lumbricoides* has a tendency to move up into the biliary tract, a feature which is almost always associated with ascending cholangitis. Once within the common bile duct, the parasite may perish, and serve as a nucleus for the formation of biliary calculi. The parasites may also continue to ascend and enter the gallbladder or intrahepatic bile ducts, which can lead to the development of liver abscesses and acalculous cholecystitis. Although the incidence of acalculous cholecystitis due to roundworms is around 10%–20% in areas endemic for hepato-pancreato-biliary ascariasis, the presence of *Ascaris lumbricoides* in the gallbladder is very rare. Of 500 patients with hepato-pancreato-biliary ascariasis, Khuroo et al. reported 64 presenting with acalculous cholecystitis and only 8 had worms in the gallbladder.

Here, we have reported two cases of acute acalculous cholecystitis caused by ascariasis, one complicated and needing prompt surgical intervention and the other re-