

Ascariasis in common bile duct resulting in a subhepatic abscess

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Abstract

Background : Biliary system ascariasis can be a rare cause of acute abdomen.

Patient report : A 70-year-old woman presented with abdominal pain for two weeks. She complained of a right upper quadrant (RUQ) pain, intermittent vomiting and weight loss. Physical examination showed RUQ and epigastric tenderness without rebound tenderness or guarding. Laboratory finding exhibited leukocytosis and mildly elevated liver enzymes.

Results : Abdominal sonography showed distended gallbladder and a tubular lesion inside the common bile duct (CBD) in favor of a parasitic lesion. A large ascaris roundworm and blood clots were extracted from the CBD by endoscopic retrograde cholangiopancreatography and sphincterotomy. After 7 days, the disease process was complicated with a subhepatic abscess formation which was managed conservatively. Finally, the patient was discharged home in fair condition after 12 days of hospitalization.

Conclusions : Ascariasis should be considered in endemic areas and early endoscopic intervention and medical therapy can be effective for extrahepatic involvement. (*Acta gastroenterol. belg.*, 2020, 83, 488-490).

Key words : Abdominal abscess, abdominal pain, ascariasis, common bile duct, endoscopic retrograde cholangiopancreatography

Introduction

Ascaris lumbricoides is the most frequent human intestinal nematode which is especially prevalent in the moist tropical and subtropical areas. The incidence of hepatobiliary ascariasis is probably underestimated. It is mainly transmitted by the fecal-oral route (1). It usually presents with abdominal discomfort and cholestatic symptoms (2). Biliary system ascariasis can be a rare cause of acute abdomen. We report a patient visiting the emergency department with non-specific abdominal pain for whom, common bile duct (CBD) ascariasis was diagnosed. Written informed Consent was obtained from the patient. The ethics of this report have been approved by the University of Medical Sciences Institutional Review Board. This Research involving a human participant meets the declaration of Helsinki ethical principles.

The Case History

A 70-year-old woman presenting to our emergency department with abdominal pain for two weeks. The patient complained of right upper quadrant (RUQ) pain associated with intermittent nausea and vomiting and weight loss of nearly 3 kilos during the last 2 month.

The intermittent pain has been worsened during the two weeks before admission and was partially relieved by analgesics. She did not report any past medical history or drugs.

On arrival, vital signs were body temperature 37.9 Celsius, blood pressure 130/85 mmHg, heart rate 100 per minute and respiratory rate 18 per minute. Physical examination revealed RUQ and epigastric tenderness without rebound tenderness or guarding. Laboratory results found leukocytosis 13600, serum glutamic oxaloacetic transaminase (SGOT) 55 u/l, serum glutamic pyruvic transaminase (SGPT) 94 u/l and alkaline phosphatase (ALP) 780 u/l.

Abdominal ultrasonography (US) showed a distended gallbladder (42*100 mm) in which a tubular lesion with 2.7 mm diameter was seen, indicated a possible parasitic lesion in conjunction with a dilated CBD diameter of 8 mm. Endoscopic Retrograde Cholangiopancreatography (ERCP) was done and an ascaris roundworm and blood clots were extracted from the CBD. In addition, sphincterotomy and stenting were performed. As the ERCP and US were done in another rural hospital, the images are not shown. Thereafter, the patient reported partial relief of symptoms and the liver enzymes and ALP decreased to normal.

After 7 days of admission, the patient gradually developed abdominal pain and fever. Abdominal ultrasonography exhibited cystic and heterogenic mass with several septae in the subhepatic region in favor of hematoma and abscess formation. Abdominal computed tomography was performed which supported the findings of sonography (Figure 1). Thus, percutaneous drainage was conducted under ultrasound guidance in which minimal amount of pus and hematoma was evacuated, which was trivial to be cultured. Besides, mebendazole 100 mg every 12 hours for 3 days in addition to ciprofloxacin 400 mg every 12 hours and metronidazole 500 mg every 8 hours were prescribed for a week. Conservative treatment was planned by multidisciplinary discussion and after 2 days of antibiotic therapy, fever

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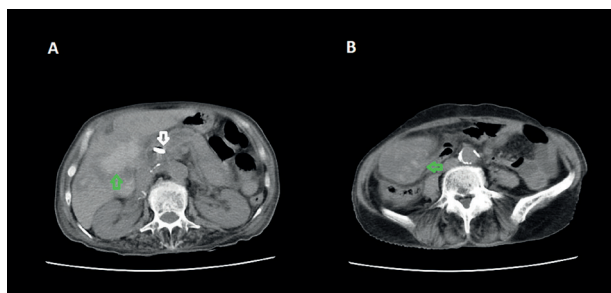


Figure 1. — A, B: Axial abdominopelvic computed tomography scan showed heterogenic collection with septae in the subhepatic region in favor of abscess formation (green arrow). Note the common bile duct stent (white arrow).

was subsided, blood culture was negative and liver function tests remained near normal and after 5 days, the abdominal pain and other symptoms were controlled. Finally, resolution of the abscess was demonstrated by ultrasonography and the patient was discharged home after 12 days of hospitalization in fair condition.

Discussion

The gallbladder involvement by the ascaris worm is rare due to the narrow and tortuous cystic duct that limits the worm to enter the gallbladder; however, this can occur in the presence of high intestinal parasitic load and due to the worm natural ability to migrate into orifices (3). The female worm has a higher probability to enter the hepatobiliary system although considered unexpectedly (2).

The main symptoms are abdominal pain, weight loss, mild fever, diarrhea and worm passage in stool. The migrations of worms into the CBD and cystic duct can predispose acute cholecystitis or biliary colic due to gallbladder distention (4). Some complications of biliary ascariasis include jaundice, tender hepatomegaly with elevated liver enzymes and high fever related to cholangitis, liver abscess, pancreatitis, intestinal obstruction and perforation (5,6). Life-threatening presentations may rarely occur by status asthmaticus due to pulmonary ascariasis, aspiration of the worms during vomiting, gastrointestinal obstruction or perforation (6).

Ultrasonography (US) is a relatively sensitive method to distinguish roundworm as echogenic, non-shadowing, tubular structures. Specific sonographic features for CBD ascariasis include “inner tube sign”, “stripe sign” and “spaghetti sign” (6,7). Moreover, US can track worm movement in intestines and biliary tree (8). The middle and distal parts of CBD may not be visualized by ultrasonography due to bowel gas. In addition, magnetic resonance imaging is excellent to detect biliary involvement diagnosed by the characteristic hypo-intense filling defect within the CBD (9).

Conservative management is the initial treatment of hepatobiliary ascariasis (10) and consists of withholding oral intake, administration of intravenous (IV) fluids

and anthelmintic regimens. Anthelmintic medications paralyze the roundworms in the intestinal lumen and do not kill the parasites within the ducts. Dead worms inside the ductal system may provoke severe inflammation and stricture (7). The parasite carries intestinal flora to the biliary tree; therefore, in the presence of signs of cholangitis, broad spectrum IV antibiotics are indicated. Anthelmintic eradication can be successful in many patients (1).

Endoscopic extraction has been reported successful in up to 90 % of patients with CBD ascariasis. The roundworm can be taken out; although in some patients, sphincterotomy may be required or removal by a balloon catheter (11). Percutaneous drainage was applied in a study (12) while, surgical intervention is reserved for conservative treatment failure or complications such as abscess or severe pancreatitis (13,14). There are a few reports of intrahepatic abscess complicating ascariasis which were treated with drainage as well as anthelmintic plus/minus antibiotic regimens (15, 16). Of note, the hepatic abscess can be either related to the ascariasis or to the ERCP complications.

Conclusion

The diagnosis should be considered in patients presenting with abdominal pain and cholestatic signs and symptoms especially in endemic areas and detailed history about parasitic contamination should be taken. Early intervention with ERCP followed by medical therapy can be definitely effective.

Conflict of Interest

None

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