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Case Report

Unusual Case of Biliary Tract Obstruction; a Spectacular 'Christ Sign' on MRI

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Abstract

Ascariasis, a worldwide common parasitic disease, caused by ascaris lumbricoidesaffecting mainly the small intestine. This worm could invade the gallbladder and be responsible of an acute cholangitis. Our case report describes this particular condition in which our patient of 23 years old had his gallbladder invaded with Ascariasis and in which the Bili-MRI showed spectacular images. We choose to call it 'Christ sign'.

Keys words: Ascariasis, Ascaris lumbricoides, Acute Cholangitis, MRI, Christ Sign.

INTRODUCTION

Ascaris lumbricoides as a member of the ascaridia group known to be the largest nematode in humans. It has been reported that 25% of the global population is infected [1]. Ascaris infestation into the gallbladder is rare and occurs in only 2.1% of biliary ascariasis cases. Gallbladder ascariasis is usually associated with an intense intestinal parasitic load [2]. High-resolution magnetic resonance imaging (MRI) is the gold standard allowing diagnosis and providing the characteristic aspects, which are of major importance for optimal management.

CASE REPORT

A 23 years old military patient with 14 years history of abdominal pain related to intestinal parasite infection admitted to our department with right upper quadrant pain ongoing for one week. On physical examination, there was mild tenderness over the right upper quadrant of the abdomen, jaundice and high body temperature. Laboratory investigation revealedwhite cell count 11×10^9/L (4 - 10.0 x 10^9/L), hemoglobin 15,7 g/L (13 - 17 g/L), platelet count 380×10^9/L (150 - 450 x 10^9/L), total bilirubin 52 mg/L, direct bilirubin 33 mg/L, aspartate aminotransferase 76 U/L (10 - 50 U/L), alanine aminotransferase 90 U/L (10 - 50 U/L), The serum CRP 48 mg/L(≤5 mg/L). The patient referred to the Radiology Unit for MRI, as we could not perform ultrasound for technical issues. On MRI, T2-weighted axial magnetic resonance image showing hypointense *Christ sign* in the Gallbladder (Figure 1: A, B). From these findings, the diagnosis of biliary ascariasis retained, and confirmed by the presence of parasitic eggs in the stool examination. After failure of the extraction of the worm by endoscopic, treatment was laparoscopic surgery.

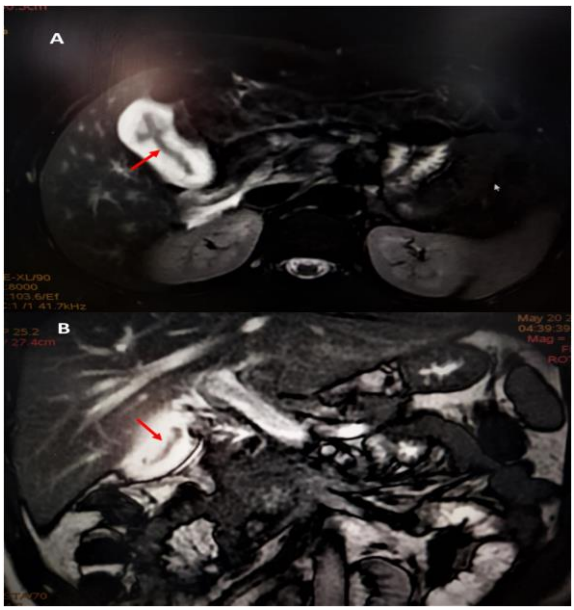

Fig-1 (A, B): T2-weighted axial magnetic resonance image showing a hypointense *linear band*and *Christ sign*in the Gallbladder (Arrow)

DISCUSSION

The adult ascaris usually found in the jejunum, from there it can move into the duodenum and pass into the biliary area via the ampulla. In this way, ascaris coming from the intestine into the biliary system brings with it the intestinal flora and thus the appropriate factors for cholangitis and cholecystitis [4]. Ascaris lumbricoides has a natural preference to migrate and seek out a small orifice. Consequently, it tends to enter the hepatobiliary system, via the ampulla of Vater, to lodge: in the ampulla, Common bile duct and hepatic ducts. There is also a relatively rare proportion of gallbladder and pancreatic duct lodging [1].Ascaris lumbricoides is the most common cause of parasitic infection of bile duct [2, 3, 5], that causes biliary obstruction, and is complicated with acute cholangitis called: 'biliary ascariasis [6]. The presence of ascaris in the biliary tree is manifested in various ways. The most common of these is colic-type right upper quadrant pain. This pain may be accompanied by fever, nausea and vomiting. This table is similar to cholecystitis and the examination shows tenderness in the right upper quadrant [7]. The presence of ascaris eggs in the bile sample is a definitive diagnosis. However, because this is not possible in many patients, radiological imaging methods are very useful in diagnosis [4].Magnetic resonance imaging (MRI) and magnetic resonance cholangiopancreatography (MRCP) can be used as an alternative in the diagnosis of biliary ascariasis. MRI has become the gold standard for biliary system imaging, especially because it is non-invasive and allows for 3D imaging [6].

CONCLUSION

Although 'gallbladder ascariasis' is a rare condition, as clinician we need to remember it as a possible diagnosis in patients with biliary symptoms and in the same way we should recall the importance of radiology in its diagnosis.

DECLARATIONS

Conflict of Interest

The authors have no conflicts of interest to declare.

Financial Disclosure

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