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Case report

Ascariasis masquerading as obstructive jaundice in an infant – a case report

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Abstract

Ascariasis is endemic in India and is common in areas of poor sanitation. The most common complications are intestinal and biliary ascariasis, which are associated with significant morbidity. We report a 7-month-old child who presented with obstructive jaundice and was also documented to have pancreatitis. She was noted to have a round worm occluding the common bile duct following ultrasonography and magnetic resonance cholangiopancreatography (MRCP). The baby was conservatively managed with oral anthelmintics (to which she responded) and followed up with serial ultrasound.

Keywords

Biliary ascariasis, magnetic resonance cholangiopancreatography, anthelmintics, infant.

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Introduction

Ascariasis affects 25-30% of the world's population and is common in the Indian subcontinent. Intestinal obstruction and biliary ascariasis are the most common complications [1]. A recent prospective hospital-based study from India has documented that 60% of cases of acute pancreatitis were due

to biliary ascariasis in the paediatric population from an endemic zone [2]. We report a 7-month-old baby who presented to us with features of obstructive jaundice and was also noted to have pancreatitis.

Case report

A 7-month-old female child presented with progressively increasing jaundice, high coloured urine and clay coloured stool for 2 months. Mother also complained of increasing pruritus. There was no history of irritability, fever, vomiting, abdominal distension or bleeding manifestation. Antenatal history was uneventful with no history of liver disorder in the family.

On examination, she had a firm liver, which was palpable 4 cm below the costal margin, and a just palpable spleen. There was no evidence of ascites or other features of chronic liver disease. The baby was haemodynamically stable. There were no features suggestive of dysmorphism.

Haematological examination revealed microcytic, hypochromic anaemia with haemoglobin 8.5 g/dl and low ferritin. Her total leucocyte count was 11,700/mm^3 with eosinophil equal to 5% and erythrocyte sedimentation rate equal to 54. C-reactive protein was 3.9 mg/L (normal < 5). Liver function test (LFT) revealed conjugated hyperbilirubinemia (total bilirubin 8.4 mg/dl, direct bilirubin 7.41 mg/dl) with mildly elevated hepatic enzymes – aspartate aminotransferase 97 U/L and alanine aminotransferase 72 U/L. She had elevated alkaline phosphatase (790 U/L [normal 35-104]) and gamma-glutamyltransferase (443 U/L [normal 6-42]). The baby had a deranged clotting screen with an international normalised ratio of 1.64 and elevated prothrombin and activated partial thromboplastin time. Her LFT was suggestive of obstructive jaundice. She was also found to have mildly elevated amylase (124 U/L [normal 28-100]) and a raised lipase (224 U/L [normal 13-60]). Ultrasonography (USG) of the abdomen revealed dilated common bile duct (CBD) with an echogenic shadow near the lower end (**Fig. 1**). Magnetic resonance cholangiopancreatography (MRCP) diagnosed the linear intraluminal filling defect in the lower part of CBD to be due to ascariasis (**Fig. 2**). Pancreas was visualised to be bulky.

The baby was conservatively managed with pyrantel pamoate (11 mg/kg single dose orally), albendazole (400 mg single dose orally) and

Figure 1. Ultrasonography (USG) of the abdomen revealed dilated common bile duct (CBD) with an echogenic shadow near the lower end.

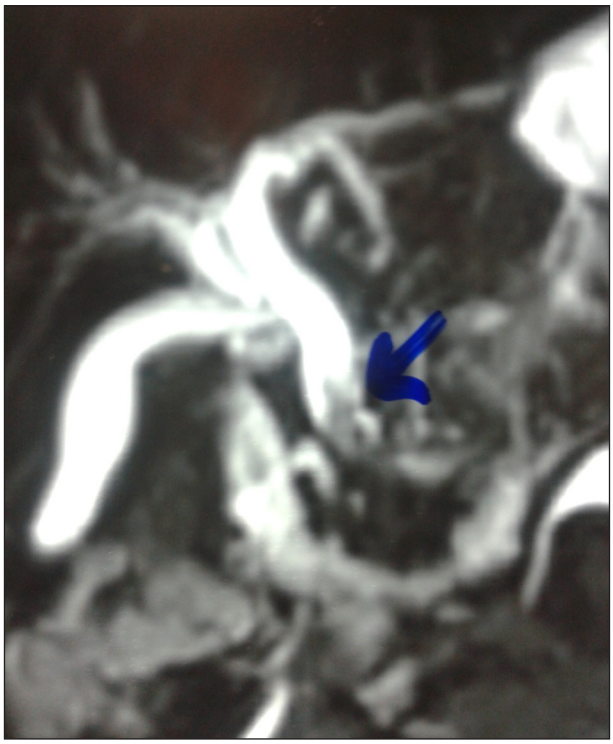

Figure 2. Axial images in T2-weighted sequence shows a dot hypointense signal in common bile duct (CBD) around which the bile signals are hyperintense.

hyoscine butylbromide (500 microgram/kg, three times daily for 2 days) to facilitate relaxation of the sphincters. Deranged coagulation normalised following vitamin K administration. LFT gradually normalised and serial USG showed clearing of CBD. At 1-year follow-up she is doing well with normal liver function.

Discussion

Ascariasis is common in areas with poor hygiene and socioeconomic conditions. India is an endemic zone and studies have reported biliary ascariasis to represent 23% of acute pancreatitis in the country [3]. Although it is mainly asymptomatic, morbidity is noted in 8-15% of the affected population [4]. Adult worms might block the ampullary orifice of the main pancreatic duct or the common bile duct and result in biliary colic, cholecystitis, cholangitis, pancreatitis or hepatic abscess [5-7]. Ascariasis may also cause intestinal obstruction, volvulus or intussusception [8]. Our case with biliary ascariasis had features of obstructive jaundice and pancreatitis secondary to blocking of the CBD.

USG is a safe, easy and non-invasive diagnostic tool for detecting the etiology of obstructive jaundice and has been used in detecting round worms. Ascaris is visualised as an actively motile linear or curved structure on real-time USG. Its alimentary canal is represented by an anechoic tubular structure [8, 9]. The limitation for USG is in detecting a single worm in the duodenum or the ampullary orifice. In our patient, the presence of an echogenic shadow within the CBD made us review further with MRCP, which was easily available in our institute.

Endoscopic retrograde cholangiopancreatography (ERCP) is used not only as a diagnostic tool but also for therapeutic purposes in worm extraction in pancreatic or biliary ascariasis. The European Society for Paediatric Gastroenterology Hepatology and Nutrition (ESPGHAN) and the European Society of Gastrointestinal Endoscopy Guidelines (ESGE) 2017 recommend ERCP in neonates and infants (< 1 year) for cholestatic hepatobiliary disease, if non-invasive investigations are inconclusive. Paediatric duodenoscope of size 7.5 mm should be preferably used in children weighing less than 10 kg. ERCP should ideally be performed by an experienced endoscopist in a high volume tertiary care paediatric centre [10]. The worms are represented as filling defects on ERCP [9]. However, ERCP is an invasive procedure and is often difficult in resource-limited settings.

MRCP however helped in diagnosis in our case. ERCP combined with real-time USG is 100% sensitive in diagnosis [11, 12].

We planned for conservative management considering the potential complications of invasive procedure and sphincterotomy for a very small child. Albendazole and pyrantel pamoate have been documented to benefit patients with ascariasis [11, 13]. They are known to immobilise the helminth with slight difference in mechanism of action. The US Centers for Disease Control and Prevention (CDC) and the American Academy of Pediatrics (AAP) recommend the use of albenzadole in children affected by ascariasis orally in a single dose [14]. Hyoscine butylbromide has been used as a spasmolytic in biliary ascariasis in children [15]. Our child responded to the above treatment. Serial USG monitoring showed clearing of the CBD.

We intend to highlight the young age at diagnosis for our patient. To our knowledge, there is only 1 case report for an infant with biliary ascariasis [15].

Take-home message

In an endemic zone, ascariasis may present with features of cholestasis and pancreatitis. A proper radiological workup is needed for diagnosis and follow-up.

Declaration of interest

The Authors declare that there is no conflict of interest. Funding: none.

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