

Pancreatic-Biliary Ascariasis in an Infant

Roy K¹, Das J², Mukherjee D³, Kundu R⁴

Abstract

Ascaris infestation that too causing biliary obstruction is very rare in infancy even in endemic area. Adult Ascaris diameter (3-6 mm) is more than the average diameter of CBD in paediatric population, which is 1.27 +/- 0.67 mm. We are reporting a baby of seven months who presented with conjugated hyperbilirubinemia and pancreatitis due to Round Worm in CBD.

Introduction

Ascariasis is the commonest helminthic infection in human. Rarely adult worm from small intestine migrates through the sphincter and enter common bile duct (CBD) or pancreatic duct. High index of suspicion for BA is needed especially in tropical countries. Uncomplicated BA responds well to conservative treatment with vermicide medicine, which can eradicate ascariasis in 84% to 100% of cases¹. The best results are obtained when anthelmintic is accompanied by improved environmental sanitation and health education.

The Case

Seven month female baby presented with progressive jaundice for two months with high colour urine, pale colour stool, itching and multiple bruises all over the body without any vomiting, abdominal distension or passage of worm in stool. No history suggestive of sepsis or intake of any drug. Soft hepatomegaly of 4cm under right costal margin and just palpable spleen was present.

Investigation revealed iron deficiency anaemia, eosinophilia of 10%(absolute eosinophil count-800), conjugated hyperbilirubinemia and other laboratory values are given in the following table.

Ultrasonography (USG) of abdomen revealed dilated CBD with a linear echogenic structure without acoustic shadow in the lower part (Figures 1a, & 2) suggestive of ascariasis. Magnetic resonance cholangiopancreatography (MRCP) showed dilated CBD of 9 mm. with linear intraluminal filling defect in lower part of CBD (Figures 1b & 1c).

The baby was managed conservatively with Albendazole. Anticholinergic drug hyoscine was given to facilitate relaxation of sphincter so that worm can get expelled. On follow up after 6 weeks repeat USG showed no echogenic shadow within CBD. Child became anicteric and biochemical report normalised on follow up.

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Lab Parameters	Value	Reference range
Total serum bilirubin	8.4 mg/dl	<1
Direct bilirubin	7.4 mg/dl	<0.4
SGOT	36 U/L	22-63
SGPT	42 U/L	12-45
Alkaline Phosphatase	790 U/L	100-150
Gamma glutamyl transferase (GGT)	443 U/L	5-32
Albumin	2.8 gm/dL	3.4-4.2
INR	1.8	Up to 1.5
Lipase-	1200 U/L	145-216
Amylase	48 U/L	30-100
Cholesterol	112 mg/dl	<200

INR was normalized following vitamin K injection.

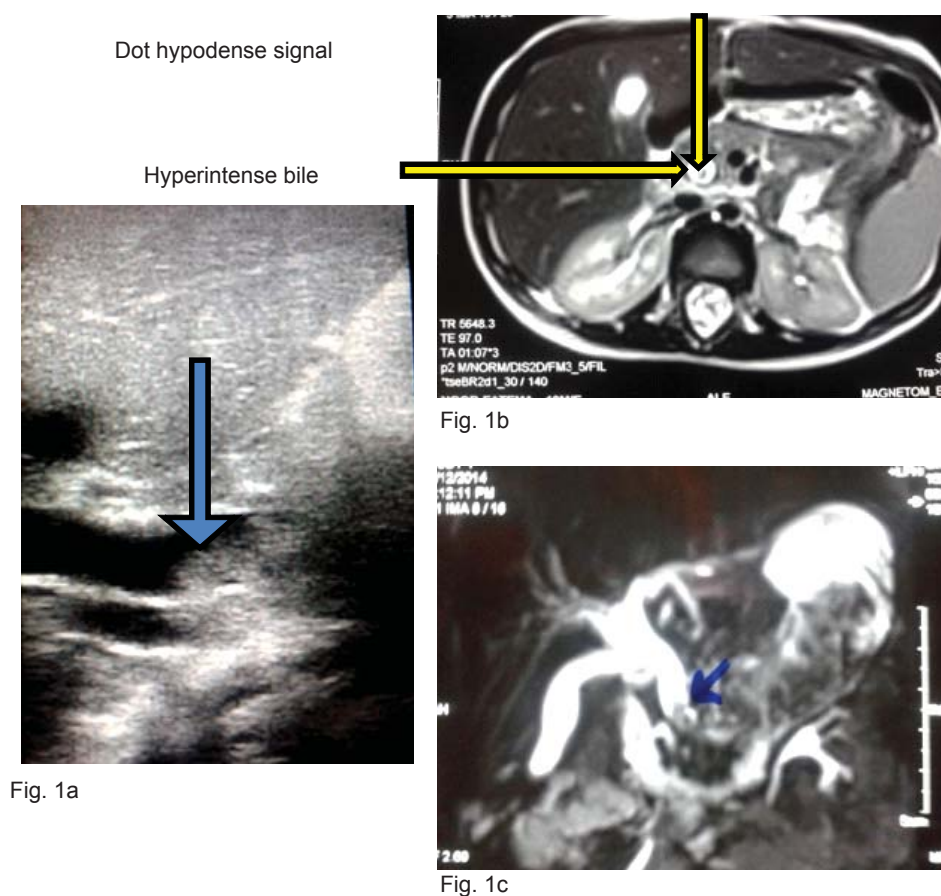


Fig.1a: USG showed linear echogenic shadow (shown by arrow) in Common Bile Duct (CBD) without acoustic shadow.
 Fig 1b:T2 weighted axial image is showing dot hypo intense signal in CBD and around which bile appears hyper intense.
 Fig1c: MRCP single shot shows linear filling defect in CBD



Fig 2: USG is showing gall bladder and CBD and showing linear echogenic shadow in CBD

Discussion

The prevalence of ascariasis is highest in tropical countries. Intestinal infestation of *Ascaris* is mostly asymptomatic or cause vague abdominal symptoms. *Ascaris* infestation that too causing biliary obstruction is very rare in infancy even in endemic area^{2,3}. Adult *Ascaris* diameter (3-6 mm) is more than the average diameter of CBD in paediatric population, which is 1.27 +/- 0.67 mm⁴. Occasional entry of adult worm into the biliary tract results in biliary colic (56%) followed by obstructive jaundice, cholangitis, choledocholithiasis, cholelithiasis, acalculus cholecystitis, acute pancreatitis (6%) and intrahepatic abscess⁵. Infestation is acquired through ingestion of raw vegetables contaminated with fertilized egg. From ingestion to oviposition by the adult female, it takes two to three months⁶. In our case seven month baby who was exclusively breastfed up to five months of age, most probably got infestation because of very poor sanitation, which is the most important risk factor. *Ascaris* in lower part of CBD can cause

obstruction of both CBD and pancreatic duct together, as in our case. Sensitivity of abdominal ultrasonography to diagnose BA is 50-86%⁷ but it is operator dependent and it is also useful for follow up assessment. Endoscopic ultrasonography is now considered as most sensitive method which can increase the sensitivity of diagnosis. In our case as real time USG did not show any movement and gastrointestinal tract of the *Ascaris* was not visible, possibly it was a dead worm. MRCP is very effective in detecting intra-ductal ascariasis. ERCP is considered as therapeutic rather than diagnostic measure when conservative management fail. Anthelmintic are given following the procedure to prevent re-entry of worms through papillotomy. Stool examination for egg is not sensitive.

The conservative treatment usually fails in the presence of concomitant stones or stricture which prevents the worm to return in the duodenum. Paralyzing vermicides should be avoided in patients with complete or partial obstruction as the paralyzed worms will not be expelled and may land up in surgery. In a study from Kashmir, which is known as highly endemic area⁸, Conservative management was successful in 88% of the patients. In our case patient has responded to the medical management and showed no evidence of cholangitis or worm in follow up.

Conclusion

Biliary ascariasis is extremely rare cause of obstructive jaundice in Infant, even in endemic area. This should be kept in differential diagnosis of infantile cholestasis specifically in the background of poor sanitation and low socioeconomic condition. Good imaging is the main modality of diagnosis.

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