

BILIARY ASCARIASIS*

A Case Report

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Ascaris lumbricoides is a worldwide intestinal infestation that may cause various complications. Biliary ascariasis, however, is a rare condition. We describe a child with biliary ascariasis. The patient's clinical symptoms were pain, vomiting and abdominal tenderness, and she was thought to have acute appendicitis. However, laboratory examination revealed high serum alkaline phosphatase and amylase levels, and ultrasonography and percutaneous cholangiography demonstrated biliary ascariasis. The patient was successfully treated with mebendazole and antispasmodic drugs. **Key words:** *ascaris lumbricoides*, biliary ascariasis, cholangiography, ultrasonography, mebendazole.

Infestation by *Ascaris lumbricoides* roundworm, which mainly lives in the jejunum, is an almost worldwide phenomenon. The most common clinical presentation involves passage of worms per rectum, vomiting of worms, small bowel obstruction by a bolus of worms, intestinal perforation and peritonitis, and appendicitis due to obstruction of the lumen by the worm¹⁻³. Sometimes the worms can enter the common bile duct and cause biliary symptoms^{4,5}. We present a case of ascariasis within the common and intrahepatic bile ducts.

Case Report

A three-year-old girl presented with a one-day history of abdominal pain, nonbilious vomiting and anorexia. The patient had no history of infestation of parasites or urinary tract infection.

Physical examination revealed a body temperature of 37.6 °C and pulse of 120 beats/min. There was upper abdominal tenderness on palpation, no muscular defense and hepatosplenomegaly.

Laboratory values were: hemoglobin 9.8 g/dl, leukocyte count 14.000/mm³, serum amylase 400 U/L. (N: 25-125 U/L) serum alkaline phosphatase 280 U/L. (N: 71-142 U/L). Bilirubin, SGOT and SGPT levels and urinalysis were normal. *Ascaris* ova were demonstrated in feces. Plain radiography of the abdomen was unremarkable. Abdominal ultrasonography showed hyperechogenic tubular structures within the dilated intrahepatic and common bile duct. This appearance

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was thought to be due to biliary ascariasis and to represent the "spaghetti sign" (Fig. 1). Intravenous cholangiography was not helpful. Percutaneous hepatic cholangiography showed many linear radiolucencies within the dilated intrahepatic and common bile duct which extended into the duodenum (Fig. 2). The patient was treated with mebendazole 3 x 100 mg/d and hyoscine-N-butyl bromide 3 x 5 mg/d for five days. One week later, abdominal ultrasonography showed the dilated bile ducts but no ascariasis. The medical treatment was repeated and the patient was discharged from the hospital with no clinical symptoms. Six months of follow-up were uneventful.

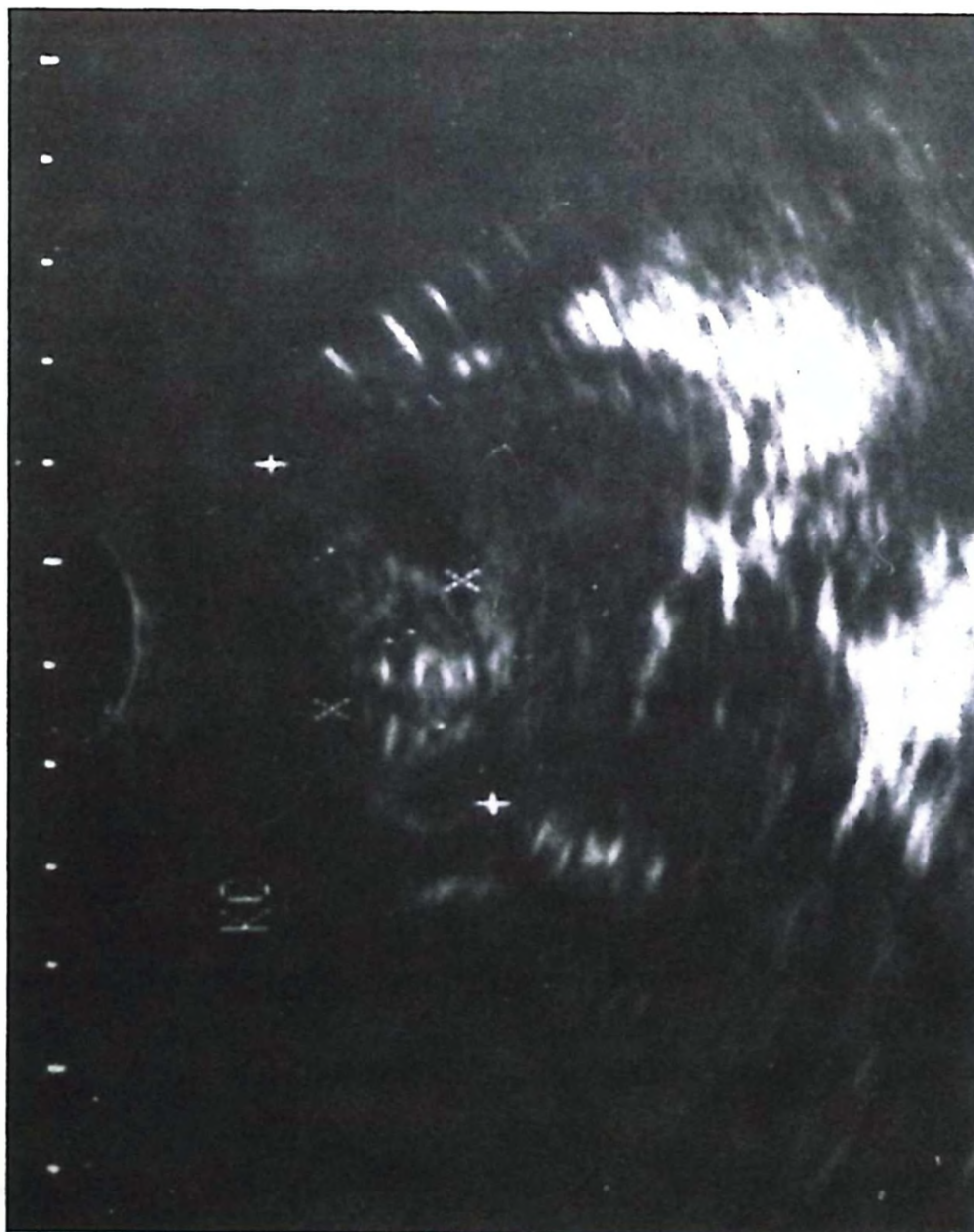


Fig. 1: Ultrasonography of the liver shows hyperechogenic ascaris worm within the intrahepatic bile duct.

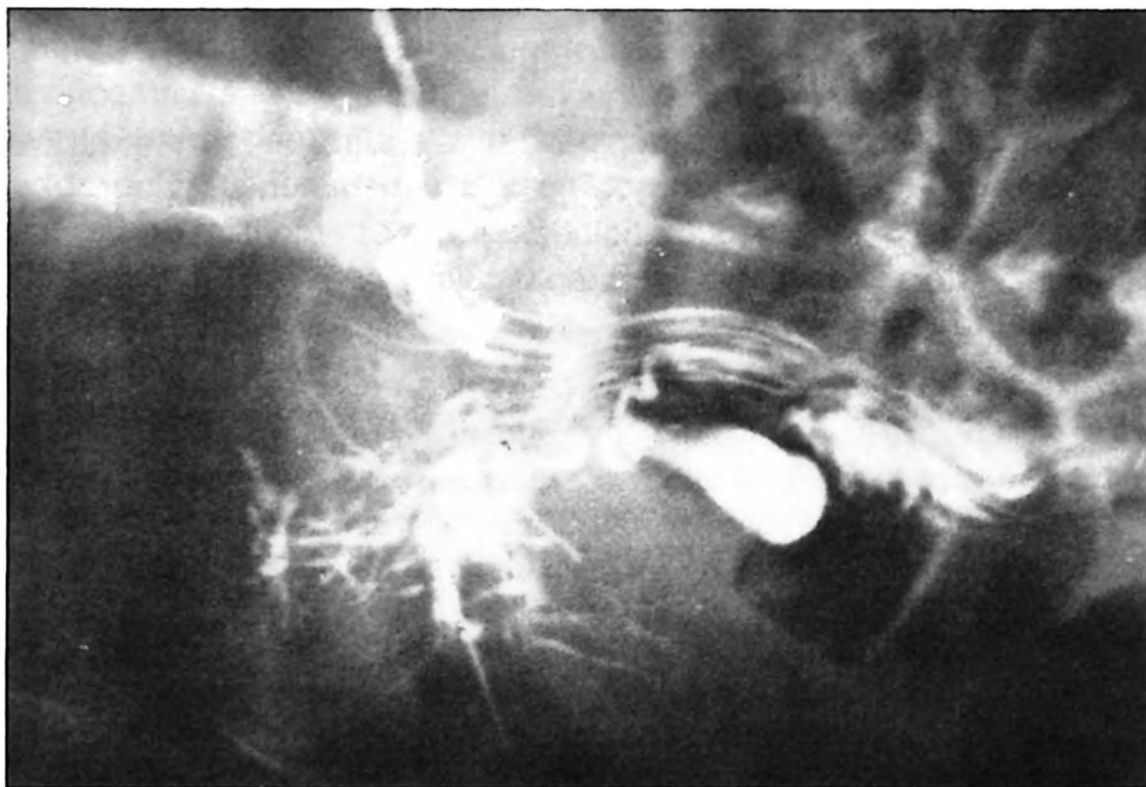


Fig. 2: Percutaneous cholangiography shows linear radiolucencies within the dilated and opacified common bile duct and intrahepatic main bile ducts, indicating worms.

Discussion

Biliary ascariasis is an uncommon manifestation of infestation of ascariasis. The roundworm has a tendency to move up into the common bile duct from the small intestines and enter the gallbladder or intrahepatic bile ducts^{4,5}. Although the infestation may be silent, biliary colic frequently develops and may imitate acute appendicitis. The patients usually have a history of passage of worms per rectum or vomiting of worms. The serum bilirubin level is often normal, but liver and pancreatic enzyme values are often increased. Complications, including cholecystitis, pancreatitis, development of gallbladder stone and obstruction of the common bile duct may result⁴⁻⁶. Worm-containing liver abscess or ascending cholangitis is seen less frequently^{6,7}. Our patient had abdominal pain, vomiting and anorexia. Initially we thought that she had acute appendicitis; however, the location of tenderness and increased serum alkaline phosphatase and amylase levels led us away from a diagnosis of acute appendicitis.

Ultrasonography is a noninvasive and safe diagnostic method in biliary ascariasis. The intraluminal worms are seen as hyperechogenic, tubular structures. This appearance has been described as the spaghetti, coil or strip sign. The worm, seen as a thick, hyperechogenic strip with a central, longitudinal and anechoic component, is described as the "inner-tube" sign⁵. If ultrasonography is technically

inadequate, intravenous, retrograde or percutaneous cholangiography can be performed to diagnose biliary ascariasis. These methods demonstrate characteristic vermiform defects in the biliary ducts^{8, 9}. The ultrasonography findings described were noted in our patient. We also performed intravenous and percutaneous cholangiography. The intravenous cholangiography was inadequate, but the percutaneous cholangiography demonstrated many linear radiolucencies within the dilated intrahepatic and common bile ducts, which extended into the duodenum.

In uncomplicated patients, antihelminthic treatment is preferred in biliary or intestinal ascariasis. If medical treatment is unsuccessful, the worms may be removed with the aid of an endoscope⁸⁻¹⁰. If a complication such as perforation, biliary stone or liver abscess develops, surgery is the sole alternative method^{4, 6, 7}. We also successfully treated the patient by antihelminthic and antispasmodic drugs. No complications developed.

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