

Case Report

***Fasciola Hepatica* Infestation Presenting as Biliary Obstruction 11 Years after Open Cholecystectomy and CBD Exploration**

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Kuwait Medical Journal 2004, 36 (4):293-295

ABSTRACT

Biliary obstruction usually results from stones, tumors, or strictures involving the biliary ducts. Occasionally parasites can infest the biliary system causing obstruction.

Usually, this occurs in areas where certain parasites like *Fasciola hepatica* or *Ascaris lumbricoides* are endemic. In

non-endemic areas, like Kuwait, these parasites are seen in expatriates from endemic areas or patients who have travelled to these places.

We report a case of a 47-year-old lady with obstructive jaundice secondary to biliary obstruction with *Fasciola hepatica*.

KEY WORDS: biliary obstruction, *Fasciola hepatica*, infection

INTRODUCTION

Fasciola hepatica is a parasite that infests cattle, goat and sheep. Human infection occurs accidentally upon ingestion of infected raw vegetables. This infection in the human has both an acute and chronic phase. The former usually starts 1-3 weeks after ingestion. Immature worms penetrate the gastrointestinal wall with secondary deposition in the peritoneal cavity, liver capsule, liver parenchyma and subsequently into the bile ducts. Generalized malaise, high fever, right upper quadrant abdominal pain and hepatomegaly clinically characterize this phase. Intense eosinophilia and a non-specific liver enzyme elevation dominate the picture. The chronic form, on the other hand, starts 3-4 months after infestation. The adult fluke remains in the gallbladder and slowly deposits eggs in the bile ducts that result in inflammation and subsequently present clinically as biliary obstruction^[1]. We present an unusual case of biliary obstruction secondary to *Fasciola hepatica*.

CASE HISTORY

A 47-year-old woman presented to the hospital with a one-week history of right upper quadrant abdominal pain, dark colored urine and yellowish discoloration of the skin. The pain was steady in nature, moderate in severity without radiation or clear precipitating or relieving factors. There was no

history suggestive of pruritus, fever, rigors or chills. She denied previous similar episodes. She maintained a steady body weight and a good appetite. Review of the systems was unremarkable and there was no risk factor for chronic liver disease. She had an open cholecystectomy for gallbladder stones 11 years earlier. Patient's social history was significant for repeated travel to Egypt. There was no history of smoking or alcohol consumption.

Clinical examination revealed a middle aged lady, in no apparent distress. There was evidence of jaundice, but no pallor or stigmata of chronic liver disease. Her vital signs revealed a pulse rate of 80/min, blood pressure of 130/90, respiratory rate of 16/min and a body core temperature of 38 °C. Cardiac examination revealed normal heart sounds and the jugular venous pressure was not elevated. Examination of the chest revealed normal breath sounds. Abdominal examination showed a mild tenderness in the right upper quadrant. There was no guarding or rigidity. There was no hepatosplenomegaly and no other masses were identified. The remainder of the physical examination was within normal limits. Baseline laboratory parameters showed: hemoglobin 12.4g/dL, white blood cells 10x 10⁹ /L, differential was lymphocytes 31.0%, monocytes 7.1%, eosinophils 9.2% and platelet count 367 x 10⁹/L.

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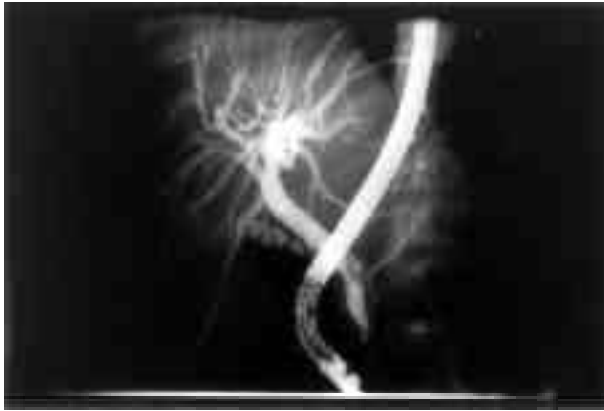


Fig. 1: Endoscopic retrograde cholangiogram showing an elongated leaf-like filling defect in the lower common bile duct representing *Fasciola hepatica*

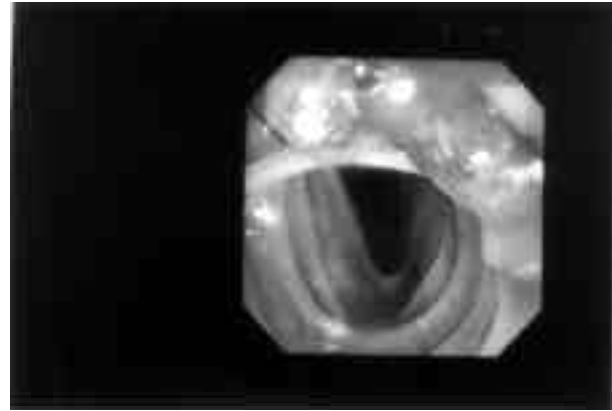


Fig. 2: Endoscopic view of the duodenum with the Ampulla of Vater. An elongated fleshy body representing *Fasciola hepatica* is seen being extracted from the bile duct.

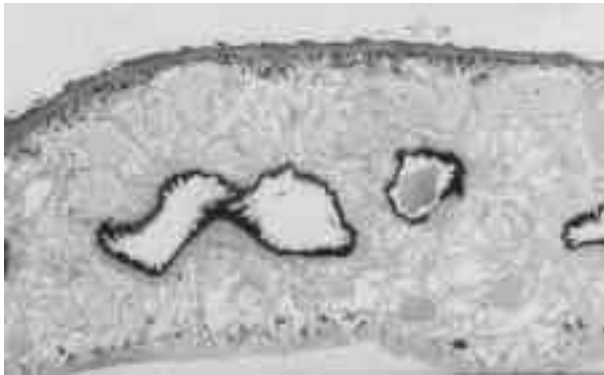


Fig. 3: Longitudinal section of the worm, showing gut structure in the center and cuticle with irregularly spaced hooks indicating *Fasciola* species. (Magnification X 400)

Coagulation profile was normal. The chemistry and liver profile was as follows: glucose 6.5 mmol/L, urea 405 mmol/L, creatinine 47 mmol/L, sodium 139 mmol/L, potassium 4.0 mmol/L, alkaline phosphate 403 IU/L (normal 40-128), alanine transaminase 294 IU/L (normal 10-60), aspartate transaminase 114 IU/L (normal 10-42), total bilirubin 87 umol/L (normal 3-25), direct bilirubin was 74 umol/L, and serum albumin was 30 g/L. Viral hepatitis serology (A, B, C) and autoimmune markers were negative, and iron studies were normal. Electrocardiogram and chest X-rays were normal. Abdominal ultrasound showed dilated intra and extra hepatic biliary radicals with normal pancreas. Endoscopic Retrograde Cholangiopancreatography (ERCP) showed normal appearance of the ampulla and normal pancreatic duct. The common hepatic and common bile duct were both mildly dilated to 10 mm. The intrahepatic duct was also mildly dilated. There was a linear free floating filling defect seen in the distal common bile duct (Fig. 1). A 10 mm papillotomy was made, and a flat soft fleshy material measuring 1 x 0.3 x 0.1 cm in diameter was retrieved (Fig. 2). Histopathological analysis of this material revealed microscopic features of liver flukes

containing several ova (Fig. 3).

The patient had an uneventful course with both clinical and biochemical improvement. She was followed in the out-patient clinic three months later and was found to be asymptomatic.

DISCUSSION

Fasciola hepatica has both an acute and chronic clinical presentation. In majority of these cases, both of these entities are clinically and biochemically distinct^[1]. Occasionally an overlap may occur in patients who have repeated exposure to these parasites upon visiting an endemic area^[2]. Our patient had fever, moderate upper abdominal pain and moderate degree of eosinophilia. This clinical presentation is an unusual finding in patients during the chronic phase, where, majority of patients reported in the literature, present with biliary obstruction and no systemic symptoms^[3]. This parasite has a prolonged life span in humans, ranging from 9-13 years^[4]. The diagnosis is based on identification of *Fasciola hepatica* eggs or ova in the stool, duodenal or biliary aspirate and immunological tests. Although other tests were not done, the biliary drainage and identification of the parasites was confirmatory in our patient. Imaging studies including ultrasound, CT Scan and ERCP have been utilized in the diagnosis. Several abnormalities have been reported such as; a mobile vermiform structure without an acoustic shadow within the gallbladder and the bile duct representing worms, dilation of both extra and intra-biliary systems, or as in our case, a small radiolucent linear or crescent-like shadow in the bile duct^[5-13].

Chronic fascioliasis, in the majority of cases is asymptomatic. Complications include obstruction of the common bile duct, cholangitis, severe hemobilia, portal fibrosis, invasion of the gallbladder and sub-capsular hemorrhage^[14-18].

These parasites rarely migrate to other organs outside the hepatobiliary system. The latter, has been labelled as “*Ectopic Fasciola*”. Multiple organ-system involvement has been described including the lung, cardiac and central nervous system^{19,20}.

Treatment of this condition can be divided into pharmacological and non-pharmacological therapy. The former includes the use of different medications such as emetine, dehydroemetine, chloroquine, bithionol, niclofolan, metronidazole, albendazole, triclabendazole and praziquantal. These drugs have a variable degrees of response as reported in the literature¹¹. Non-pharmacological therapy involve the use of ERCP with sphincterotomy and removal of the parasites from the biliary tree²¹. In our patient the removal of the parasites from the common bile duct resulted in complete resolution of the clinical symptoms and normalization of biochemical parameters.

This case highlights several important points. First, is the importance of consideration of intra-biliary liver fluke as an unusual cause of biliary obstruction. Second, the finding of a foreign body like material should always be sent for histopathological analysis. Third, ERCP with sphincterotomy is the ideal therapeutic measure in the treatment of intra-biliary *Fasciola hepatica*.

ACKNOWLEDGMENT

The authors wish to thank Dr John Patrick for his help in getting photomicrographs and also for their interpretation.

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