

# Fascioliasis: a report of five cases presenting with common bile duct obstruction

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## ABSTRACT

Fascioliasis is a zoonotic infection caused by *Fasciola hepatica*. It is rarely seen with icterus caused by obstruction of the common bile duct. We report five patients with obstructive jaundice due to *Fasciola hepatica*, who were diagnosed and managed with endoscopic retrograde cholangiopancreatography (ERCP). All cases were admitted to hospital with complaints of icterus and pain in the right upper quadrant of the abdomen; their biochemical values were interpreted as obstructive jaundice. Ultrasound and computer tomography (CT) revealed biliary dilatation in the common bile duct, but did not help to clarify the differential diagnosis. ERCP showed the presence of *Fasciola hepatica* in the common bile duct. After removing the flukes, the symptoms disappeared and the biochemical values returned to normal. Biliary fascioliasis should be considered in the differential diagnosis of obstructive jaundice. This report confirms the diagnostic and therapeutic role of ERCP in patients with obstructive jaundice caused by biliary fascioliasis.

## KEYWORDS

Extrahepatic cholestasis, *Fasciola hepatica*, fascioliasis, parasitosis

## INTRODUCTION

There has been an increase in *Fasciola hepatica* infections worldwide in the last decade and it is reported that 2.5 million people have been infected in 61 countries and more than 180 million people are at risk.<sup>1</sup> As seen in the related literature, this disease is not only seen in developing countries but also in developed ones. For this reason it can be considered a worldwide problem.

In nonendemic areas, it can be difficult for physicians to diagnose this disease as it is not often encountered. This may also lead to a delay in making the diagnosis. We present five cases of *Fasciola hepatica* in the common bile duct associated with jaundice. The patients could not be diagnosed by conventional methods, but were diagnosed and treated by ERCP.

## CASE REPORTS

Between 2000 and 2003, five patients were referred to our hospital with suspicion of choledocolithiasis. The clinical presentations and general conditions of the cases were fairly similar. The patients main complaints were severe jaundice and pain in the right upper quadrant of the abdomen. All cases were females over 60 years (range 62-70 years, except for one male, aged 32). All cases showed a typical obstructive jaundice clinically. Abdominal ultrasound revealed minimal intrahepatic and mild extrahepatic biliary dilatation while other organs were normal, and no stones were observed. Since no definite diagnosis could be reached by ultrasound, CT was used but it did not provide any additional information. Two patients confirmed that they had previously undergone similar episodes of right upper quadrant pain without jaundice within the last four to five years. Blood tests revealed mild eosinophilia in only two cases, while haemoglobin and white blood cell count were normal in all patients. The erythrocyte sedimentation rates were normal, but asparate aminotransferase and alamine aminotransferase values were two to three times the upper limit, while  $\gamma$ -glutamyltransferase was four to six times greater. Total bilirubin and direct bilirubin levels were three to seven times and ten to 15 times the upper limit, respectively. ERCP demonstrated extrahepatic biliary dilatation, the common bile ducts were about 12 to 15 mm in diameter, with a small linear filling defect and crescent-

like shadows and a jagged appearance in the distal dilated parts. Sphincterotomy was performed, and the living mobile parasites were removed from the common bile duct by a balloon (figures 1-3). After ERCP, triclabendazole was administered at a dose of 10 to 12 mg/kg for one or two days, after which the symptoms disappeared and biochemical values soon returned to normal. A history of ingestion of watercress and other freshwater plants was confirmed in all the patients. Later at their first control visit, ultrasound revealed an almost normal CBD in all patients.

## DISCUSSION

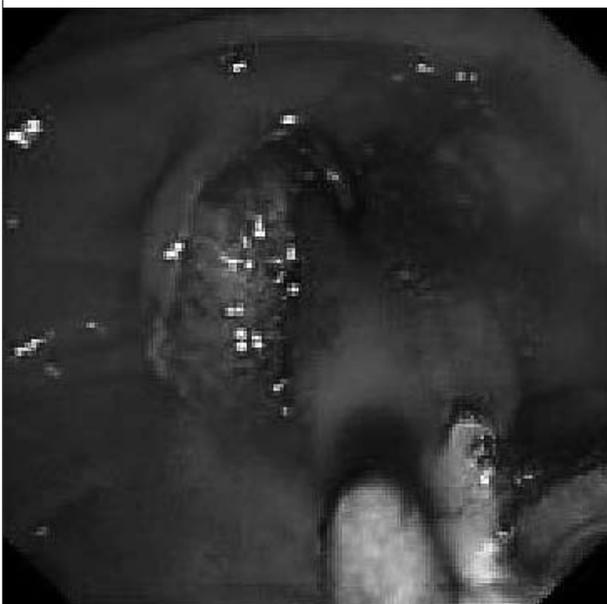
Humans, usually an accidental host, most commonly and classically get infected by eating watercress grown in sheep-raising rural areas. When eating infected material, infective metacercariae excyst in the duodenum and larvae emerge. The larvae penetrate the wall of the small intestine into the peritoneal cavity, then penetrate the liver capsule and pass through the liver tissue into the biliary tract. The disease is not only acquired by eating watercress but also by raw or undercooked liver of infected animals, or other plants such as lettuce and spinach, or drinking infected water. For this reason, if the infected materials stated above are eaten, the disease will not be limited to rural areas, and can be seen in the centres of developed cities.<sup>2,3</sup>

While fascioliasis used to be seen mainly in developing countries, in the last decade the number of cases in developed countries has increased, reaching 61 countries worldwide because of the increase in worldwide travelling and immigration.<sup>4</sup> The total estimated number of infected people is 2.4 million and the number at risk is more than 180 million throughout the world.<sup>1</sup> For this reason, physicians who are not aware of this increase or who have not encountered many cases related to fascioliasis may waste time by performing multiple diagnostic procedures.<sup>5</sup>

There are three phases of the disease: the acute or liver phase, the chronic or biliary phase, and ectopic or pharyngeal fascioliasis.<sup>6</sup> Although the biliary phase is usually asymptomatic, it is rarely reported in the medical literature that it can lead to extrahepatic cholestasis, as was the case with our patients. In a report published in 2000, only 19 cases were reported to have had common bile duct obstruction by *Fasciola hepatica* during the last ten years.<sup>7</sup> Besides, the parasite itself can obstruct the duct mechanically, and it can lead to hyperplasia and hypertrophy in the duct epithelium by increasing the concentration of proline.<sup>8</sup> As a result periductal fibrosis and thickening of the duct walls may occur, causing obstruction.

The image seen on ultrasound and CT is sometimes confused with malignancy or stones.<sup>8</sup> In the diagnosis of this disease, ultrasound may not provide certain information and CT is not superior. The most useful

**Figure 1.** *Fasciola hepatica* being removed through the papilla



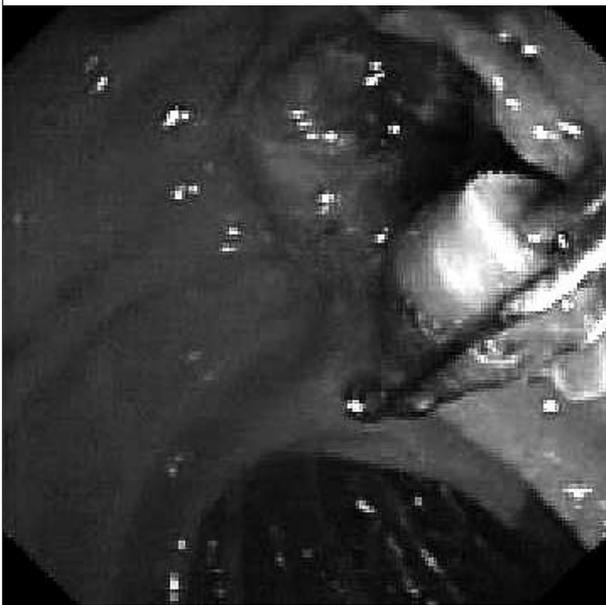
A colour version of this figure can be found on our website [www.njmonline.nl](http://www.njmonline.nl).

**Figure 2.** *Fasciola hepatica* in the intestinal lumen



A colour version of this figure can be found on our website [www.njmonline.nl](http://www.njmonline.nl).

**Figure 3.** *Fasciola hepatica* in the intestinal lumen, grasped by tripod



A colour version of this figure can be found on our website [www.njmonline.nl](http://www.njmonline.nl).

diagnostic test for viewing the bile ducts is cholangiography by ERCP, and more recently, by magnetic resonance cholangiopancreatography (MRCP).<sup>9</sup> Some technical limitations make bile duct detail obtained by ultrasound, CT or MRCP imaging methods inferior to that obtained with ERCP. For this reason, ERCP is considered to be the gold standard for bile duct imaging.<sup>10,11</sup> Likewise, ERCP should also be considered the first choice in patients in the chronic phase, even if the diagnosis is established by ultrasound or CT.<sup>12</sup> However, the number of reported cases described by radiological features in chronic fascioliasis is small.<sup>8</sup>

The chronic phase is managed by endoscopic mechanical clearance of the bile ducts because of the risk of biliary obstruction caused by dead flukes due to the drug therapy, while the acute stage of the disease can be treated adequately by drugs only. In biliary obstruction due to fascioliasis, ERCP and sphincterotomy have been used successfully and safely to extract parasites from the biliary tree by balloon or basket.<sup>13,14</sup> However, inadequate incision of papilla may result in cholangitis as well as stones in the common bile duct. Surgery is only indicated in complicated cases.<sup>11</sup> We removed living parasites by ERCP and did not observe any complications in follow-

up. Bithionol and triclabendazole are the most effective medical treatment choices.<sup>5,7</sup> We treated our patients with triclabendazole after effective sphincterotomy, and no relapse occurred in the two-year follow-up.

In conclusion, because fascioliasis is increasingly encountered worldwide, physicians should be aware of this disease and they should take into consideration the travel and immigration history of patients during diagnosis of the disease. And also, ERCP still maintains its importance in the diagnosis and treatment of the disease, and can be used safely.

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