

Gallbladder-duodenal fistula presenting with liver abscess and upper gastrointestinal bleeding

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Abstract

Background. Bilio-enteric communications leading to liver abscess formation are encountered rarely and are therefore not easily suspected by the attending physician. **Case outline.** A bilio-enteric communication involving the gallbladder and the duodenum presented as a septic event with upper gastrointestinal bleeding in a 71-year-old man who was wrongly thought to have undergone a previous cholecystectomy. A pyogenic bacterial liver abscess developed from the fistula in the absence of biliary obstruction. The patient was treated surgically with disconnection of the fistula and drainage of the abscess. **Discussion.** The liver abscess presumably arose as a consequence of contamination of the bile via the cholecysto-duodenal fistula. The previous operation is likely to have been a simple cholecystostomy.

Key Words: *Bilio-enteric fistula, liver abscess*

Introduction

Bilio-enteric fistulas involving the gallbladder are seldom encountered. The advent of elective laparoscopic cholecystectomy has rendered neglected cases of cholecystitis uncommon and their complications relatively rare.

Case report

A 71-year-old man presented with a history of fatigue, anorexia and fever with chills of 20 days' duration. He had supposedly undergone an open cholecystectomy 30 years earlier. On physical examination, there were no relevant findings apart from a Kocher and a right paramedian incision. Laboratory tests showed mild anaemia with moderately elevated levels of liver enzymes and direct bilirubin and a white blood cell count $>20 \times 10^9/L$. C-Reactive protein was raised together with CA 19-9 and evidence of past hepatitis B infection. Anti-echinococcal IgG antibody levels were non-diagnostic. Abdominal ultrasound findings led to computed tomography (CT) which showed a 10×15 cm cystic formation occupying most of the right liver plus aerobilia (Figure 1).

While in hospital, the patient developed acute upper gastrointestinal (GI) bleeding. Emergency endoscopy revealed multiple acute ulcers of the stomach and duodenum. He was operated under the diagnosis of 'complicated hydatid cyst-upper GI bleeding'. Surgical exploration revealed a large pyogenic non-para-

sitic liver abscess situated in segments V, VI, VII and VIII. The gallbladder was intact with no signs of inflammation. A bilio-enteric fistula involving the gallbladder and the duodenum was discovered (Figure 2), along with multiple jejuno-ileal diverticula. The abscess was drained, and cholecystectomy was performed with disconnection of the bilio-enteric communication. The postoperative course was uneventful and the patient was discharged after 7 days. There was no further bleeding. The predominant organism isolated from the liver abscess was *Enterococcus faecium*.

Discussion

Pyogenic bacterial liver abscess is most commonly associated with ascending cholangitis in a biliary tract partially or completely obstructed by stone, tumour or stricture (35% of cases). In the present case no biliary obstruction was found. The route of contamination of the bile that was recognised was the communication between the gallbladder and the duodenum. Other causes of liver abscess formation include portal bacteraemia of intra-abdominal origin (20% of cases), systemic bacteraemia originating in a distant location with organisms reaching the liver via the hepatic artery, direct extension from an adjacent infection outside the biliary tract and parenchymal trauma. Solitary abscesses are usually located in the right liver but rarely occupy the entire lobe. Single abscesses



Figure 1. Computed tomography revealing a cystic lesion occupying most of the right liver lobe. Free air was identified in the biliary tree.

usually present with a subacute onset of atypical symptoms. Fever is common and may be the only obvious symptom, although most patients also have anorexia, nausea, weight loss and weakness. Right upper quadrant pain or tenderness and hepatomegaly occur in about 50% of the cases, and right pleuritic chest pain is occasionally a feature. Jaundice is usually apparent when the biliary tract is obstructed. CT is the most sensitive imaging technique for the diagnosis of a liver abscess. However, abscesses >2 cm can generally be detected on ultrasound scan and distinguished from neoplasms.

The presence of an amoebic abscess should be suspected when the patient reports travelling to an endemic area and the presence of *Entamoeba histolytica* should be sought. Amoebiasis responds well to chemotherapy alone (metronidazole, chloroquine) and usually does not require surgical drainage.

Percutaneous drainage is the treatment of choice for liver abscesses [1]. Operative drainage is indicated for patients with an identified intra-abdominal focus of infection and for those in whom percutaneous drainage is not feasible or has failed [2,3]. Anatomic liver resection is rarely required and is withheld for cases of underlying surgical hepatobiliary pathology [4]. In the present case the decision for surgical exploration was taken on suspicion of a complicated hydatid cyst with the added pressure of upper GI bleeding. Key determinants of outcome are the number of liver abscesses, the underlying aetiology and the need for surgical treatment [5].



Figure 2. Bilio-enteric fistula involving the duodenum and the gallbladder.

Our patient claimed to have been submitted to cholecystectomy but the organ was clearly found in place. It may be that the previous surgeon possibly performed some type of partial cholecystectomy or cholecystostomy when faced with a difficult case. Severe local inflammation probably caused the chole-cysto-duodenal fistula that was taken down easily during the cholecystectomy. Bilio-enteric fistulas are rare and mostly involve the gallbladder and the duodenum. The communication is usually the result of chronic inflammation of the gallbladder due to cholelithiasis. The fistula generally originates at the fundus of the gallbladder, the part of the organ that is considered more vulnerable to ischaemia [6,7]. At the time of operation, this patient did not have cholelithiasis, although that was reported to be the indication for his past operation. We assume that the fistula allowed passage of the stones into the duodenum.

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