

CASE REPORT

Pseudoaneurysm of cystic artery after laparoscopic cholecystectomy

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Background. The formation of a pseudoaneurysm of the cystic artery is a rare occurrence after laparoscopic cholecystectomy. **Case outline.** Seven weeks after laparoscopic cholecystectomy, a 31-year-old woman presented with a picture of obstructive jaundice. The diagnosis of cystic artery aneurysm was verified by arteriography, CT and MRCP. At laparotomy the pseudoaneurysm was found to be compressing the common bile duct. It was successfully managed by ligation of the right hepatic artery. **Discussion.** Although this complication is rare, the surgeon must have a high index of suspicion to make the diagnosis.

Key Words: *Pseudoaneurysm, cystic artery, laparoscopy*

Introduction

Pseudoaneurysm of the cystic artery is a rare complication after laparoscopic cholecystectomy [1]. Clinical presentation can be early or late. We report a case of pseudoaneurysm of the cystic artery as a late complication of this operation.

Case report

A 31-year-old woman complained of abdominal pain in the upper right quadrant for 5 days, associated with jaundice and asthenia. Laparoscopic cholecystectomy had been carried out elsewhere for gallstones 50 days earlier. On examination she was pale, jaundiced and afebrile, with deep tenderness in the right hypochondrium. Laboratory tests revealed a haemoglobin of 10.8 g/dl, haematocrit 32.50%, total bilirubin 106.8 mmol/L (normal 3.4–17.1 mmol/L), direct bilirubin 5.96 mg/dl, gamma-glutamyl transferase 930 U/L (normal 7–32 U/L), alkaline phosphatase 404 U/L (normal 50–250 U/L), aspartate aminotransferase 255 U/L (normal until 32 U/L) and alanine aminotransferase 256 U/L (normal until 31 U/L). Computed tomography (CT) showed a small fluid collection in the gallbladder fossa and a dilated bile duct (Figure 1). Magnetic resonance cholangiopancreatography (MRCP) showed extrinsic compression of the main bile duct and suggested a

pseudoaneurysm of the cystic artery. Coeliac arteriography confirmed this diagnosis (Figure 2).

At laparotomy the pseudoaneurysm of the cystic artery was identified, causing compression of the main bile duct. As ligation and suture of the ostium of the pseudoaneurysm proved difficult because of the local inflammatory process, the right hepatic artery was ligated. Recovery was uneventful with resolution of jaundice and normalisation of laboratory tests.



Figure 1. Contrast-enhanced abdominal CT showing small fluid collection in the gallbladder fossa, the thrombosed aneurysm and dilatation of the bile duct.



Figure 2. Coeliac trunk arteriography demonstrating pseudo-aneurysm of the cystic artery.

Discussion

Pseudoaneurysm formation after laparoscopic cholecystectomy is rare. The symptoms may appear in the early postoperative period or as late as 120 days after operation [2]. Among the possible causes are the excessive use of electrocautery during the dissection at the infundibulum of the gallbladder, causing thermal injury to the vascular wall, and erosion of the inner wall of the cystic artery caused by contact with the tip of the metal clip used to occlude the cystic duct [3]. Pseudo-aneurysm of the hepatic artery or its branches presents with bleeding through the drain or haemobilia in about 20% of cases [2,4]. The classical triad of upper gastrointestinal bleeding, pain in the right upper quadrant and obstructive jaundice described by Quincke is present in 32% of patients [5,6]. Our patient presented with abdominal pain and obstructive jaundice, but without haemobilia; the possibility of pseudo-aneurysm was only considered after imaging. Spiral CT suggested an aneurysm, but the diagnosis was not clear-cut [4,5]. Angiography clinched the diagnosis. Doppler ultrasound would have been an alternative means of detecting the aneurysm [7]. In patients with gastrointestinal bleeding, endoscopy and retrograde cholangiography may be performed before arteriography [8,9].

Transarterial embolisation is the treatment of choice in the presence of haemorrhage [4,8,10]. When there is compression of the bile duct or a fistula or failure of embolisation, operation is needed to repair or ligate the artery involved [5]. In the present case, ligation of the right hepatic artery was chosen because of the inflammatory process in the area. There are reports of hepatic insufficiency after embolisation or ligation of the right hepatic artery, but our patient had only a transient increase in hepatic enzyme levels.

References

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