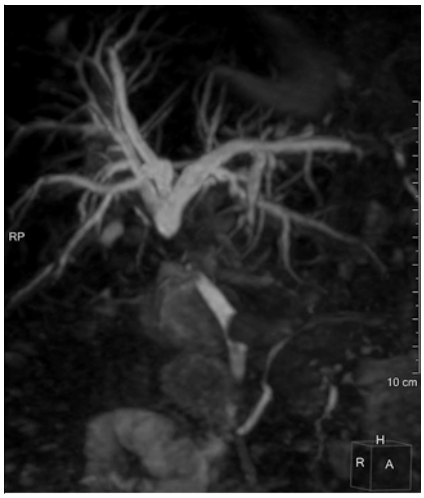
Percutaneous cholangioscopy to remove endovascular coils that had migrated into the bile duct after right hepatic artery pseudoaneurysm embolization

Right hepatic arterial injury is a common vascular injury during laparoscopic cholecystectomy, occurring in approximately 25 % of patients with biliary injuries [1]. We report the case of a 78-year-old man who, 1 month after undergoing a laparoscopic cholecystectomy, was referred for hemobilia and collapse caused by the rupture of a cystic artery pseudoaneurysm into the common bile duct (CBD). Angiography showed active bleeding that was treated by conventional coil embolization [2] (▶ **Fig. 1**).

▶ **Fig. 1** Angiographic image in a 78-year-old man with rupture of a cystic artery pseudoaneurysm into the common bile duct, 1 month after undergoing a laparoscopic cholecystectomy, that was treated with coil embolization.



▶ **Fig. 2** Biliary magnetic resonance imaging performed after the patient developed obstructive cholangitis.

The patient was re-referred with obstructive cholangitis 1 month later (▶ **Fig. 2**), but endoscopic retrograde cholangiopancreatography (ERCP) failed owing to a bile duct stricture that could not be passed. We then performed percutaneous transhepatic biliary drainage to gauge the stricture over the course of a year (▶ **Fig. 3 a**). We removed the drain after 1 year with correct sizing of the stricture, but cholangitis subsequently recurred, requiring further percutaneous drainage prior to performing percutaneous cholangioscopy (CHF type V choledochoscope; Olympus, Tokyo, Japan). During cholangioscopy, we identified coils that had migrated into the CBD and easily removed these by pushing them with a biopsy forceps into the duodenum (▶ **Fig. 3 b**; ▶ **Video 1**). The patient was discharged with transhepatic drainage for an additional 3 months (▶ **Fig. 3 c**). We hope that the removal of the coils will improve CBD healing, although we fear the development of an ischemic biliary stenosis.

Few cases of coil migration into the CBD have been reported [3] and ERCP treatment has been suggested [4], but the percutaneous approach is another option. In this video, we demonstrate the removal of migrated coils with a percutaneous endoscopic approach, thereby avoiding complex surgery.

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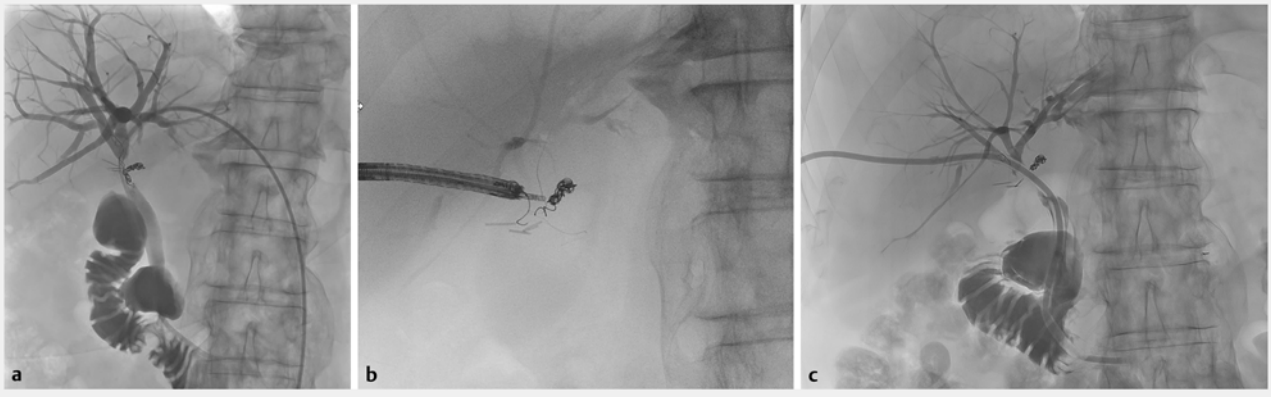
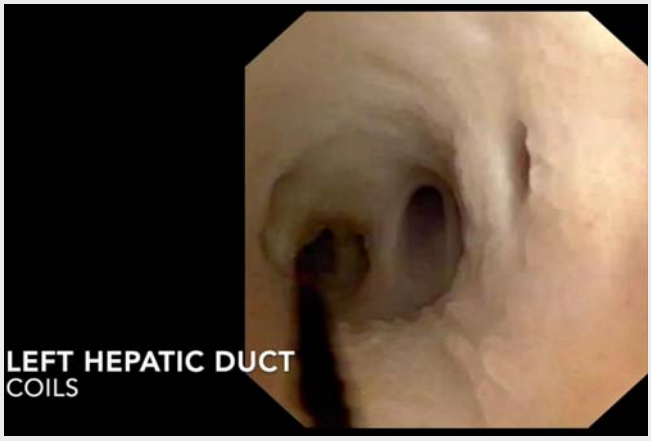


▶ **Fig. 3** Fluoroscopic images showing: **a** the initial cholangiographic appearance after percutaneous transhepatic biliary drainage; **b** coil removal during percutaneous cholangioscopy; **c** follow-up cholangiographic image.



Video 1 Percutaneous cholangioscopy to remove endovascular coils that had migrated into the bile duct after right hepatic artery pseudoaneurysm embolization.

Competing interests

The authors declare that they have no conflict of interest.

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