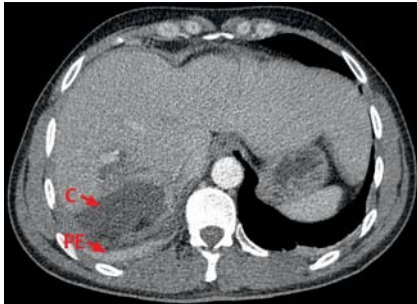


Endoscopic coil embolization of major intrahepatic biliary leak

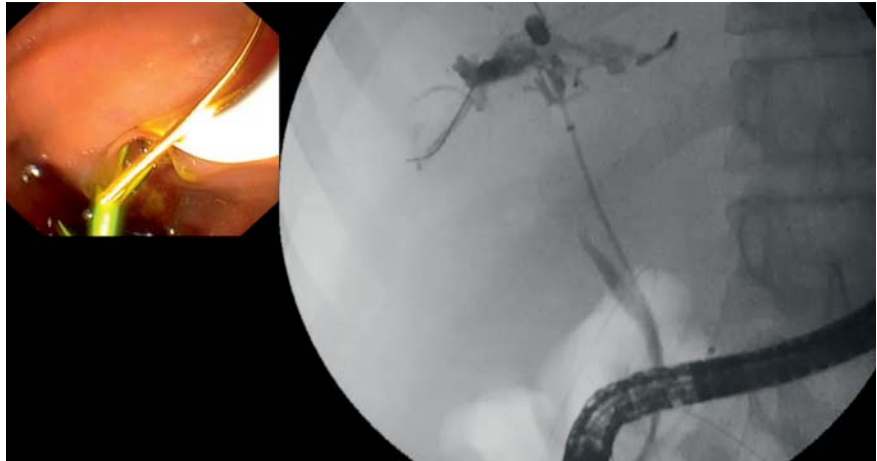


► **Fig. 1** Initial abdomen CT showing a right pleural effusion and a subphrenic collection in the right hepatic lobe suggestive of a biliary leak. C, collection; PE, pleural effusion.

A 45-year-old man who had undergone surgery for a giant hepatic hydatid cyst 1 month ago presented to the emergency room with abdominal pain and fever. Computed tomography (CT) revealed a right pleural effusion and a collection in the right hepatic lobe, suggestive of a biliary leak (► **Fig. 1**).

After two failed endoscopic retrograde cholangiopancreatography (ERCP) attempts, the common bile duct (CBD) was punctured using a 22-G needle, and a 0.018-in guidewire was advanced for an endoscopic ultrasonography-guided rendezvous. Cholangiography identified a major bile leak from one of the branches of the right main bile duct (► **Fig. 2**). An 80×10-mm fully-covered metal stent was inserted.

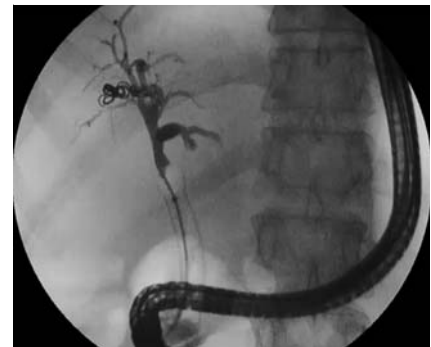
Given the lack of improvement, a second ERCP was performed showing the previous stent was in place. The leaking bile branch was selectively cannulated. Four 0.035-in Tornado coils (Cook Medical, Bloomington, Indiana, USA) were introduced through a retrieval balloon and deployed in the terminal end of the leaking duct. One of the coils was placed very distal in the biliary tree, so cholangioscopy was performed using SpyGlass (Boston Scientific Corp., Marlborough, Massachusetts, USA), and the coil was removed with a SpySnare (Boston Scientific Corp.)



► **Fig. 2** Endoscopic retrograde cholangiopancreatography showing a major bile leak from one of the branches of the right main bile duct.



► **Fig. 3** Misplaced coil in the distal biliary tree retrieved with a snare through cholangioscopy.



► **Fig. 4** Post-coil embolization cholangiography revealing cessation of the biliary leak.

(► **Fig. 3**). During cholangioscopy, a second leak was identified and later embolized with coils. A subsequent cholangiogram revealed cessation of the leaks (► **Fig. 4**; ► **Video 1**).

Six months after discharge, the patient presented with abdominal pain, and CT revealed a dilated CBD with a migrated coil inside (► **Fig. 5**). ERCP was performed and the coil extracted.



► **Fig. 5** Abdomen CT showing a migrated coil in the distal common bile duct. MC, migrated coil.



Video 1 Endoscopic coil embolization of major intrahepatic biliary leak after partial hepatectomy.

A bile leak is a serious complication after hepatobiliary surgery. Traditional endoscopic therapy consists of sphincterotomy or stent placement [1]. Endoscopic embolization with coils can be an alternative treatment of biliary leaks when other approaches fail [2,3]. Coil migration to the CBD is a complication that had already been described in coil embolization with or without N-butyl cyanoacrylate [4,5]

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Competing interests

Dr. Aparicio is a consultant for Boston Scientific. The other authors declare they have no conflict of interest.

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