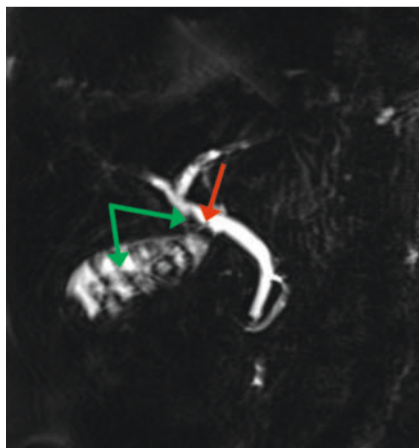


## Post-cholecystectomy biliary leakage mimicking a neoplastic lesion: contribution of cholangioscopy in diagnosis and endoscopic treatment

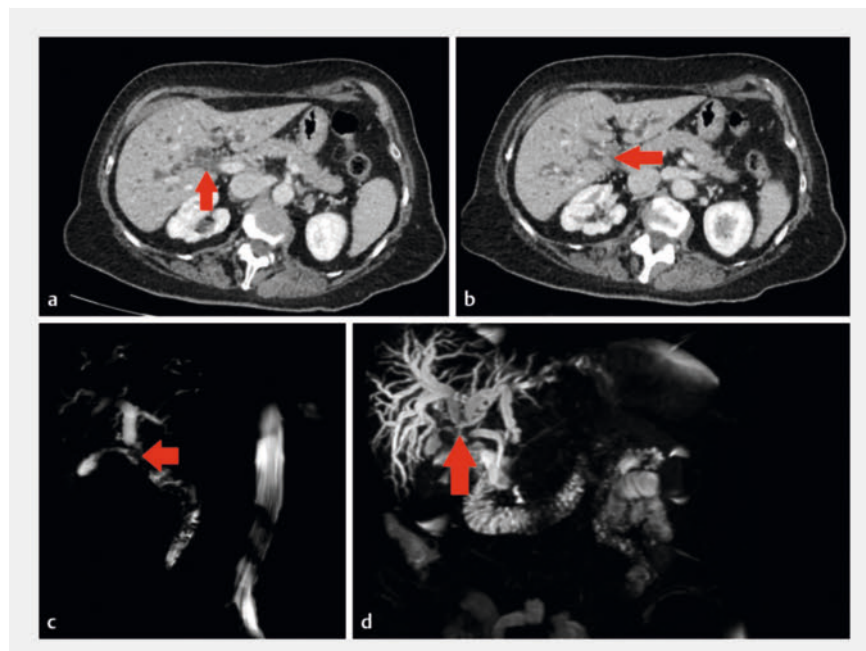
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► **Fig. 1** Cholangio-MRI prior to surgery. The cystic duct branches off the common hepatic duct about 2 cm below the biliary convergence (red arrow). The cystic duct was very short with impacted stones in the gallbladder neck and the cystic duct (green arrows).

We report the case of a 70-year-old woman with no relevant medical history, who was referred to our department for jaundice and liver dysfunction 1 month after cholecystectomy (► **Fig. 1**). Contrast-enhanced computed tomography of the abdomen and the pelvis showed dilatation of the intrahepatic bile ducts, upstream of the biliary convergence, with an infiltration of the hepatic hilum. Magnetic resonance imaging confirmed the presence of biliary stenosis at the level of the convergence, together with circumferential thickening of the wall of the upper part of the main bile duct, extending over 2 cm (► **Fig. 2**).

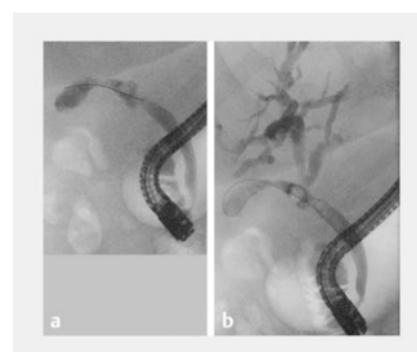
We performed endoscopic ultrasound, which revealed a hypoechoic area at the level of the biliary convergence, with intraluminal hyperechoic material, mimicking stones. Then, we performed endoscopic retrograde cholangiopancreatography (ERCP), which did not result in satisfactory opacification of the biliary tract (► **Fig. 3**). After endoscopic sphinc-



► **Fig. 2** **a** and **b** Contrast-enhanced CT showing dilatation of the intrahepatic bile ducts and infiltration of the hepatic hilum (red arrow), potentially suggesting malignancy. **c** MRI, heavily T2-weighted 3D images of the bile ducts showing a small collection (round hypointense T2 signal) near the biliary convergence (red arrow) close to the stenosis of the biliary convergence. **d** MRI, heavily T2-weighted 3D images of the bile ducts showing the presence of stenosis (red arrow) at the level of the convergence and the dilatation of upstream intrahepatic bile ducts.

terotomy, we used a single-operator cholangioscope (SOC) to characterize the biliary damage (► **Video 1**). A stone located in the upper part of the main bile duct was extracted. Then, SOC revealed a lateral wound of the main bile duct, complicated by a bilioma, within which a surgical clip was found. Stenosis of the common bile duct was associated with this biliary leakage. A guidewire was placed under SOC control and a 10F, 12-cm plastic biliary stent was placed (► **Fig. 4**) [1, 2, 3].

The patient's post-endoscopic course was rapidly favorable. Three months later, a new ERCP was performed to remove the prosthesis and to confirm healing of the biliary wound, with persistence



► **Fig. 3** **a** Biliary cannulation after sphincterotomy and opacification did not allow a satisfactory cholangiography but revealed a biliary leak. **b** The occluded balloon cholangiography allowed us to identify the leak on the cystic duct outlet.

## VIDEO

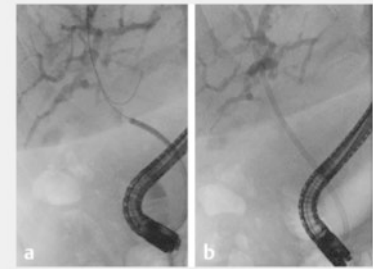
Post-cholecystectomy biliary leakage  
mimicking a neoplastic lesion of the hepatic hilum:  
contribution of cholangioscopy in diagnosis  
and endoscopic treatment.



Pierre Mayer ; Pierre-Yves Christmann ; Aina Venkatasamy ;  
Georges Uhl ; Sébastien Vuola ; Lucile Héroin ; François Haber  
Strasbourg University Hospital, France

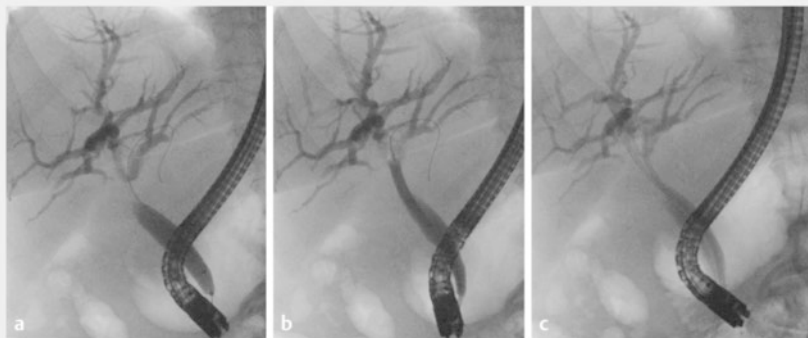


► **Video 1** ERCP for jaundice with infiltration of the hepatic hilum revealing a bilioma and a biliary wound distant from a cholecystectomy.



► **Fig. 4** **a** Cholangioscopy identifying the biliary wound and allowing cannulation of the main bile duct under visual control. **b** Placement of a 10F, 12-cm plastic biliary stent to cover the leak.

- 6 Gastroenterology and Hepatology, Les Hôpitaux Universitaires de Strasbourg, Strasbourg, France  
7 Inserm U1110, Université de Strasbourg, Strasbourg, France



► **Fig. 5** **a** Removal of the biliary stent at 3 months. Stenosis located under the biliary convergence, without leakage. **b** Dilatation of the stenosis with the balloon at 6 mm. **c** Multi-stenting with biliary plastic stent to calibrate the biliary stenosis.

of stenosis. A balloon dilatation was performed, followed by insertion of two 8.5F, 12-cm plastic stents for calibration (► **Fig. 5**) [4].

We illustrate here the use of SOC, as a combined diagnostic and therapeutic means, when the imaging potentially suggested malignancy. Thus, SOC must be democratized in management of complex biliary duct pathology.

### Conflict of Interest

The authors declare that they have no conflict of interest.

### The authors

**Pierre Mayer**<sup>1,2</sup>, **Pierre-Yves Christmann**<sup>1,2</sup>, **Aina Venkatasamy**<sup>3,4,5</sup>, **Georges Uhl**<sup>6</sup>, **Sébastien Vuola**<sup>1,2</sup>, **Lucile Héroin**<sup>1,2</sup>, **François Habersetzer**<sup>1,2,7</sup>

- 1 Gastroenterology & Hepatology, CHU de Strasbourg, Strasbourg, France
- 2 Digestive Endoscopy, IHU Strasbourg, Strasbourg, France
- 3 Department of Radiology, IHU Strasbourg, Strasbourg, France
- 4 INSERM UMR\_S 1113 IRFAC, Université de Strasbourg, Strasbourg, France
- 5 Radiology, University Hospital Freiburg Department of Radiology, Freiburg, Germany

### Corresponding author

**M.D Pierre Mayer**

CHU de Strasbourg, Gastroenterology & Hepatology, Strasbourg, France  
pierre-emmanuel.mayer@chru-strasbourg.fr

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### Key words

Strictures, Cholangioscopy, Pancreatobiliary (ERCP/PTCD), Diagnostic ERC, Tissue diagnosis, ERC topics

## Bibliography

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