

## Endoscopic ultrasound-guided antegrade cholangiography for diagnosis of aberrant right intrahepatic duct injury after laparoscopic cholecystectomy

A 45-year-old woman presented to another hospital with worsening abdominal pain and nausea 1 week after an uncomplicated laparoscopic cholecystectomy. Serial computed tomography imaging showed an enlarging fluid collection in the perihepatic and subcapsular spaces measuring 23×19×21 cm. Initial endoscopic retrograde cholangiopancreatography (ERCP) and hepatobiliary iminodiacetic acid (HIDA) scan were considered normal, without evidence of biliary dilatation or leak. When the patient did not improve with conservative management, a second ERCP was performed and a Sof-Flex stent (Cook Medical Inc., Bloomington, Indiana, United States) was placed in the common bile duct at the level of the ampulla to facilitate biliary drainage. The patient was then transferred to our institution.

Endoscopic ultrasound (EUS) showed a large fluid collection and fine-needle aspiration analysis was consistent with biloma. ERCP and occlusion cholangiography showed a normal-looking biliary tree with numerous clips at the cystic duct remnant. About half of the clips were seen 2 cm proximal to the stump, suggesting that another duct may have been clipped in addition to the cystic duct (▶ Fig. 1). The findings of no leak on ERCP and a large biloma were thought to be consistent with a Strasberg–Bismuth class C injury [1]. The patient underwent percutaneous drainage of the biloma, HIDA, magnetic resonance cholangiopancreatography, and fistulogram through the biloma drain without identifying the source of the leak. EUS-guided ERCP was performed again. EUS showed a dilated right intrahepatic bile duct, measuring 6 mm and ending at the surgical clip, consistent with duct injury. EUS cholangiogram into this segment demonstrated a ligated aberrant

right intrahepatic duct with leakage near the clips (▶ Fig. 2). The patient subsequently underwent Roux-en-Y hepaticojejunostomy and recovered uneventfully. This report highlights the role of EUS-guided antegrade cholangiography as an early diagnostic modality in cases of persistent biliary leak with a seemingly “normal” ERCP. In such cases, EUS-guided antegrade cholangiography can confirm the diagnosis of aberrant duct injury without the need to resort to further invasive diagnostic modalities, such as percutaneous transhepatic biliary drainage, and potentially leading to earlier diagnosis and reduced patient morbidity.

Endoscopy\_UCTN\_Code\_CPL\_1AK\_2AI

**Competing interests:** None

**Farid Jalali<sup>1</sup>, John G. Lee<sup>2</sup>**

<sup>1</sup> Department of Internal Medicine, University of California Irvine, Orange, California, United States

<sup>2</sup> H. H. Chao Comprehensive Digestive Disease Center, Division of Gastroenterology, Department of Medicine, University of California Irvine, Orange, California, United States

### Reference

- 1 Strasberg S, Hertl M, Soper N. An analysis of the problem of biliary injury during laparoscopic cholecystectomy. *J Am Coll Surg* 1995; 180: 101–25

### Bibliography

**DOI** <http://dx.doi.org/10.1055/s-0034-1377549>  
 Endoscopy 2014; 46: E465  
 © Georg Thieme Verlag KG  
 Stuttgart · New York  
 ISSN 0013-726X



**Fig. 1** Occlusion cholangiogram showed normal-looking right and left intrahepatic ducts. Numerous clips were seen (arrow) at the cystic duct stump, as well as about 2 cm proximal to the stump.



**Fig. 2** Endoscopic ultrasound-guided antegrade cholangiogram demonstrated an aberrant right intrahepatic duct that had been clipped. Leakage of contrast was seen (arrowhead) flowing to the left side of the liver.

### Corresponding author

**Farid Jalali, MD**

Department of Internal Medicine  
 Irvine Medical Center  
 University of California  
 333 City Blvd. West  
 Suite 400  
 Orange  
 California 92868  
 United States  
 Fax: +1-3048344055  
[farid.jalali@gmail.com](mailto:farid.jalali@gmail.com)