Endoscopic treatment of complicated bile duct stricture after surgery for traumatic bile duct injury

Hepatic lesions are common in abdominal traumas [1] and generally involve liver parenchyma. Nevertheless, bile duct lesions are rare and challenging to treat [2, 3]. Biliodigestive anastomoses are the most frequently performed surgeries [3], but the risk of long-term adverse events is high, especially for biliary anastomotic strictures [4].

Here we present a case of traumatic biliary disconnection previously treated by biliodigestive latero-lateral anastomosis on Roux-en-Y-loop, complicated by anastomotic stricture.

A 42-year-old man without relevant comorbidities was unseated from his horse and reported a severe bile leak due to intrapancreatic biliary tract disconnection. For this reason, he underwent hepatico-jejunostomy with previous ligation of the distal choledocus.

After six months, a biliary anastomotic stricture developed and percutaneous transhepatic biliary drainage was performed as the primary treatment. Because of the very low quality of life due to poor tolerance/compliance with percutaneous transhepatic biliary drainage, the patient was referred to our endoscopy center.

At first, a standard approach to the major duodenal papilla was attempted with a duodenoscope (ED-127; Pentax Medical), but it failed because the intrapancreatic biliary tract was completely disconnected.

At this point, an occlusive cholangiography was performed (using a Fogarty balloon pushed into the bile duct through the percutaneous access) (Fig. 1) in order to make the common bile duct visible under endoscopic ultrasound. The Hot AXIOS electrocautery-enhanced delivery system (Boston Scientific) was chosen to change the approach, and a fully covered, 8 × 8-mm lumen-apposing metal stent (LAMS) was released between the duodenum and the choledocal stump (Fig. 2). Then a fully covered, 16-mm × 2-cm biflanged metal stent (Nagi Stent; Euro-Medical Corp.) was placed through the hepaticojejunostomy using the percutaneous access to achieve stable dilation of the anastomotic stricture (Fig. 3).

Fig. 1 Occlusive percutaneous cholangiography using a 12-mm Fogarty balloon to dilate the common bile duct and make it visible under endoscopic ultrasound.

Fig. 2 To safely open the lumen-apposing metal stent in a small-caliber common bile duct, the stent was placed as deep as possible in the biliary tract through a guidewire.

Fig. 3 Biflanged stent and lumen-apposing metal stent at 1-month follow-up.

Fig. 4 "Hand-tailored," fully covered, self-expandable metal stents placed through the choledochoduodenostomy crosswise to avoid excessive tension of the anastomotic area.

Fig. 5 Final outcome on the hepatico-jejunostomy.
At the six-month follow-up, both stents were removed, and two “hand-tailored,” fully covered, 6-mm × 3-cm self-expandable metal stents (WallFlex; Boston Scientific) were placed through the new choledocoduodenostomy to consolidate the anastomosis (▶Video 1). The stents were positioned crosswise in order to avoid excessive tightening on the walls of the biliary ducts (▶Fig. 4). These stents were removed after six months and, at the cholangiography, the choledocoduodenostomy was patent (▶Fig. 5). The patient remained asymptomatic and no recurrence of symptoms was reported.

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Competing interests
None

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