Triple rendezvous using percutaneous, endoscopic, and real-time CT to safely reanastomose bile duct transection following liver resection

Fig. 1 Endoscopic retrograde cholangiopancreatography (ERCP) with contrast forcefully administered percutaneously and endoscopically, demonstrating complete proximal bile duct transection.

A 54-year-old woman underwent right trisegmentectomy for liver metastasis from colorectal cancer. One month post-operatively, she developed jaundice. Computed tomography (CT) showed a 16-cm surgical bed fluid collection, drained percutaneously, and intrahepatic ductal dilation. Percutaneous transhepatic cholangiography (PTC) demonstrated complete obstruction of the common hepatic duct (CHD). This could not be crossed, and an 8.5-Fr Dawson-Mueller external biliary catheter (Cook Inc., Bloomington, Indiana, USA) was placed, relieving the jaundice. Endoscopic retrograde cholangiopancreatography (ERCP) demonstrated a 1-cm CHD gap, which could not be traversed by a 0.018-in., 0.021-in., 0.025-in., or 0.035-in. straight-tip Jagwire (Boston Scientific, Natick, Massachusetts, USA) (● Fig. 1). On review, it was noted that the patient's total bilirubin had started rising after her initial trisegmentectomy. Therefore, a complete bile duct transection had most likely occurred intraoperatively. Hepatico-jejunostomy was attempted, but was aborted intraoperatively because of the presence of tumor at the intended segment 3 bypass.

To reestablish internal biliary drainage, a combined endoscopic and percutaneous rendezvous procedure was planned. Due to left lobe hypertrophy, the hepatic ar-

Fig. 2 a–f Sequential ERCP images during percutaneous transhepatic cholangiography (PTC)-ERCP rendezvous, showing advancement of the needle knife papillotome percutaneously across the site of the transection into the distal common bile duct.

tery and portal vein now lay adjacent to the bile duct defect, necessitating real-time CT during the PTC-ERCP rendezvous. Since the transection could not be traversed with a guidewire, a 5.5F RX needle knife papillotome (Boston Scientific) was advanced percutaneously (● Fig. 2a).

Real-time CT demonstrated the relationship between the vessels and the bile duct (● Fig. 3). Ensuring that the needle knife orientation was lateral to the vessels, the needle knife was set to endocut for cutting, and then advanced under continuous fluoroscopy (● Fig. 2b–d). Ductal conti-

Fig. 3 Coronal computed tomography during PTC-ERCP rendezvous, demonstrating that the hepatic artery (^) and portal vein (*) lie medial to the site of the bile duct transection.

nuity was re-established. A 10-Fr internal/external biliary drain (Cook) was placed, and the jaundice resolved (► Fig. 2e,f). Bile duct injuries after cholecystectomy occur at an incidence of less than 1% and can be treated endoscopically or surgically [1]. An Italian study reported 22 patients with bile duct transection after cholecystectomy who were successfully managed by a “lasso” rendezvous technique, whereby a guidewire passed endoscopically into the subhepatic space is lassoed with a snare loop advanced percutaneously and pulled outside the body [2]. Our case is novel as the injury occurred after hepatectomy, the PTC-ERCP rendezvous required real-time CT due to the proximity of blood vessels, and needle knife electrocautery was used because the transection could not be crossed by guidewire alone.

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Competing interests: None

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References

- 1 Pekolj J, Alvarez FA, Palavecino M et al. Intraoperative management and repair of bile duct injuries sustained during 10,123 laparoscopic cholecystectomies in a high-volume referral center. *J Am Coll Surg* 2013; 216: 894–901
- 2 Fiocca F, Salvatori FM, Fanelli F et al. Complete transection of the main bile duct: minimally invasive treatment with an endoscopic-radiologic rendezvous. *Gastrointest Endosc* 2011; 74: 1393–1398

Bibliography

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