Endoscopic ultrasonography-guided transhepatic antegrade self-expandable metal stent placement in a patient with surgically altered anatomy

An 83-year-old man who had a history of distal pancreatectomy with splenectomy and a subsequent Whipple procedure (both surgical procedures for metastatic renal cancer) presented to the emergency room with cholangitis (fever and jaundice), leukocytosis (33,900/mm³), a total bilirubin level of 4.55 mg/dL (direct 3.7 mg/dL), and elevated alkaline phosphatase (780 U/L). Abdominal computed tomography showed dilatation of the intrahepatic biliary tree and stenosis of the hepaticojejunostomy (Fig. 1).

Transgastric puncture of the left intrahepatic duct with a 19-gauge access needle (Cook Medical, Winston-Salem, North Carolina, USA) was performed under endoscopic ultrasound (EUS) guidance. The patient had a history of distal pancreatectomy with splenectomy and a subsequent Whipple procedure.

Access to the biliary ducts in patients with surgically altered anatomy is challenging. Considerable experience with double-balloon enteroscopy (DBE) has been obtained, with good results; however, the procedure is technically difficult, time-consuming, and not always available [1]. Access to the biliary tract with EUS guidance is a valuable resource in experienced hands [2], but there is little information about endoscopic antegrade transhepatic SEMS placement in patients with surgically altered anatomy [3]. We consider that EUS-guided transhepatic antegrade SEMS placement is a good alternative in patients with surgically altered anatomy when DBE has failed or is not available.

Fig. 1 Abdominal computed tomography shows dilatation of the intrahepatic biliary tree and stenosis of the hepaticojejunostomy in an 83-year-old man presenting with cholangitis. The patient had a history of distal pancreatectomy with splenectomy and a subsequent Whipple procedure.

Fig. 2 Cholangiography shows dilatation of the intrahepatic and common hepatic ducts and stenosis of the hepaticojejunostomy.

Next, EUS-guided antegrade stent placement via the transhepatic route was accomplished. A 10-mm × 6-cm uncovered self-expanding metallic stent (SEMS; Taewoong Medical, Seoul, South Korea) was advanced through a therapeutic echoendoscope over the guidewire and deployed across the stricture (Fig. 5). Proper placement was confirmed by fluoroscopy, and there were no immediate complications. The patient was discharged home 7 days later in stable clinical condition and with resolved cholangitis.

Fig. 3 A 0.035-inch guidewire reached the jejunum, and 6- and 7-Fr Soehendra dilators (Cook Medical) were advanced over the wire (Fig. 3). A 4-mm MaxForce balloon (Boston Scientific, Natick, Massachusetts, USA) was used to dilate the stenosis (Fig. 4).

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Fig. 3 A 0.035-inch guidewire reaches the jejunum, and Soehendra dilators are advanced over the wire.

Fig. 4 A MaxForce balloon is used to dilate the stenosis. a The stricture is clearly seen in the middle. b Progressive dilation with the balloon. c The stricture is not visible at the end of the procedure.

Fig. 5 The stent is advanced through a therapeutic echoendoscope over the guidewire and deployed across the stricture.