Electronic hydraulic lithotripsy by antegrade digital cholangioscopy through endoscopic ultrasound-guided hepaticojejunostomy

This report describes antegrade electronic hydraulic lithotripsy (Lithotron EL 27; Walz Elektronik, Rohrdorf, Germany) using a digital peroral cholangioscope (SpyGlass DS System; Boston Scientific, Marlborough, Massachusetts, USA) [1,2] through an endoscopic ultrasound (EUS)-guided hepaticojejunostomy route for common bile duct (CBD) stones (▶ Video 1).

A 77-year-old man, who underwent total gastrectomy with a Roux-en-Y procedure for gastric cancer, presented with cholangitis caused by CBD stones. Endoscopic transpapillary drainage was attempted, but the scope could not be inserted into the ampulla; therefore, EUS-guided hepaticojejunostomy was performed. From the Roux-en-Y jejunum, the dilated intrahepatic bile duct was punctured with a 19-gauge needle under EUS. After guidewire insertion toward the distal bile duct, the puncture site was dilated using a balloon dilator (diameter 4 mm, REN; Kaneka Medix, Osaka, Japan) (▶ Fig. 1). A covered metal stent (diameter 8 mm, length 8 cm, Niti-S; Taewoong Medical, Gyeonggi-do, South Korea) was inserted between the intrahepatic bile duct and the Roux-en-Y jejunum (▶ Fig. 2). The following day, the patient’s cholangitis was markedly improved, and he was discharged 3 days after surgery. The patient was re-admitted to our hospital 4 weeks later to continue treatment for CBD stones. The cholangioscope was inserted over the guidewire through the metal stent (▶ Fig. 3), and the CBD stones were revealed by cholangioscopy (▶ Fig. 4a). The stones were crushed by electronic hydraulic lithotripsy (▶ Fig. 4b). Subsequently, the metal stent was removed and a balloon dilator was inserted into the fistula toward the ampulla and dilated up to 12 mm (▶ Fig. 5a). The CBD stones were pushed out into the digestive tract using a balloon catheter (▶ Fig. 5b). Finally, a single-pigtail plastic stent (7 Fr, 20 cm length) was inserted through the Roux-en-Y jejunum (▶ Fig. 6a). The patient was discharged 2 days later with no further symptoms of cholangitis.

Video 1 Antegrade electronic hydraulic lithotripsy using a digital peroral cholangioscope through an endoscopic ultrasound-guided hepaticojejunostomy fistula. This novel method could become a rescue procedure when the conventional transpapillary approach is unsuccessful.
[3] was deployed between the CBD and the Roux-en-Y jejunum (Fig. 6). The patient resumed eating 4 days after surgery with no adverse effects, and was discharged 7 days after surgery.

Competing interests

None

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DOI  https://doi.org/10.1055/s-0043-119971
Published online: 9.10.2017
Endoscopy 2017; 49: E316–E318
© Georg Thieme Verlag KG
Stuttgart · New York
ISSN 0013-726X

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