A case of severe hepatolithiasis after hepaticojejunostomy with Roux-en-Y reconstruction treated by endoscopic ultrasound-guided transhepatic antegrade stone removal

Balloon enteroscopy-assisted endoscopic retrograde cholangiopancreatography (ERCP) is useful for the treatment of bile duct stones in patients with surgically altered anatomy [1–3]; however, the procedure cannot always successfully remove stones when the anastomotic site or papilla of Vater cannot be reached. Recently, endoscopic ultrasound (EUS)-guided antegrade intervention has been developed for benign biliary diseases, including hepatolithiasis in patients with altered anatomy [4,5]. We report a case of EUS-guided transhepatic antegrade stone removal (EUS-TASR) in a patient with altered anatomy (▶ Video 1).

The 59-year-old man underwent hepaticojejunostomy with Roux-en-Y reconstruction for hepatolithiasis several years previously. He was referred to our hospital for treatment of severe hepatolithiasis. Abdominal computed tomography showed huge impacted stones in the hilum and a dilated left intrahepatic bile duct (▶ Fig. 1a).

We chose to perform EUS-TASR because accessing the anastomotic site by balloon-assisted ERCP was judged to be difficult owing to the long afferent loop and because multiple sessions would be required for stone removal. We first performed EUS-guided hepatico-gastrostomy (EUS-HGS). The dilated left intrahepatic bile duct was punctured using a 19-gauge fine-needle aspiration needle from the residual stomach side. Cholangiography showed multiple impacted stones from the hilum to the bilateral intrahepatic bile ducts. A 0.025-inch guidewire was inserted into the intrahepatic bile duct and the needle tract was dilated using an ultra-tapered mechani-

▶ Video 1 Endoscopic ultrasound-guided transhepatic antegrade stone removal was useful for severe hepatolithiasis after hepaticojejunostomy with Roux-en-Y reconstruction.

▶ Fig. 1 Computed tomography. a Before treatment, showing huge impacted stones in the hilum and a dilated left intrahepatic bile duct. b After the procedure, showing complete clearance.
cal dilator. A fully covered metal stent was then placed over the guidewire (Fig. 2). EUS-TASR was performed 1 month later.

After dilation of the anastomotic stricture using a balloon catheter, a cholangioscope was inserted into the intrahepatic bile duct through the metal stent. Bile duct stones were crushed using electrohydraulic lithotripsy under direct visualization (Fig. 3). Subsequently, stone fragments were removed using a basket catheter and balloon catheter through the anastomotic route and HGS route (Fig. 4).

Finally, the huge hepatic bile duct stone was completely removed (Fig. 1b).

Competing interests

The authors declare that they have no conflict of interest.

The authors

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CORRECTION

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In the above-mentioned article, the institution of Takao Itoi has been corrected. This was corrected in the online version on September 30, 2020.