Endoscopic ultrasound (EUS)-guided antegrade intervention for a hepaticojejunostomy anastomosis obstruction under peroral cholangioscopy via an EUS-guided hepaticogastrostomy route

A 47-year-old man who had undergone subtotal stomach-preserving pancreato-duodenumectomy presented with recurrent cholangitis, possibly due to a hepaticojejunostomy anastomosis (HJA) stricture (▶ Fig. 1). Endoscopic retrograde cholangiopancreatography using short-type single-balloon endoscopy was planned. However, as the HJA was completely occluded by a fibrous membrane, we could not insert the cannula into the bile duct. Therefore, we performed endoscopic ultrasound-guided hepaticogastrostomy (EUS-HGS).

The dilated intrahepatic bile duct (B3) was punctured with a 19-gauge needle (EZ shot 3 plus: Olympus Co., Tokyo, Japan). However, no contrast medium flowed from the dilated bile duct to the jejunum, and a 0.025-inch guidewire could not be inserted across the anastomosis (▶ Fig. 2).

One month after EUS-HGS, a 7-Fr plastic stent was exchanged for a 6-mm, fully covered, self-expandable metal stent (HANAROSTENT Biliary; M.I. Tech, Gyeonggi-do, Korea) across the EUS-HGS route (▶ Fig. 3). A SpyGlass DS system (Boston Scientific Corp., Marlborough, Massachusetts, USA) was used to perform cholangioscopy to visualize the anastomosis from the inside of the bile duct (▶ Video 1). We found that the duct was completely obstructed at the anastomotic site and covered with a fibrous membrane (▶ Fig. 4a). It was difficult to break through this obstruction even with cholangioscopy guidance. Repeated poking with a stiff edge of a guidewire partially broke the fibrous membrane, and a guidewire could finally be passed thorough the anastomosis; however, a 4-Fr catheter could not be passed through the anastomosis. We diluted the anastomosis stricture by gradually removing the fibrotic tissue using biopsy forceps (SpyBite MAX; Boston Scientific Corp.) under direct cholangioscopic observation (▶ Fig. 4b). After dilation of the anastomosis using a 7-Fr catheter and a
6-mm balloon catheter, antegrade trans-anastomotic placement of a 7-Fr plastic stent across the EUS-HGS route was performed. No procedure-related adverse events were observed, and cholangitis improved after treatment.

Although EUS-guided drainage for stenosis of the HJA has been reported [1], complete obstruction makes it difficult to recanalize the anastomosis using endoscopic procedures. Recently, the usefulness of cholangioscopy through a percutaneous transhepatic or transpapillary route for postoperative biliary strictures or obstructions has been described [2, 3]. EUS-guided antegrade intervention under cholangioscopy via an EUS-HGS route is an alternative treatment.

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Competing interests

The authors declare that they have no conflict of interest.

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