Successful biliary drainage with peroral direct cholangioscopy in a patient with Roux-en-Y hepaticojejunostomy for congenital biliary dilatation

The diagnostic and therapeutic effectiveness of combined double-balloon endoscopy with a short endoscope and peroral direct cholangioscopy with an ultrasmall endoscope in patients who have altered gastrointestinal anatomy has been demonstrated [1–5]. We describe successful biliary drainage with a short double-balloon endoscope and peroral direct cholangioscopy in a patient who had cholangitis after surgery for congenital biliary dilatation.

A 61-year-old woman with a surgical history of hepaticojejunostomy and Roux-en-Y reconstruction for congenital biliary dilatation (Todani type IV-A) was admitted because of high fever associated with leukocytosis (white cell count 14 100/μL [normal 3500–8500]) and elevated C-reactive protein (21.1 mg/dL [normal 0.0–0.3]). Contrast-enhanced computed tomography showed a limited cystic dilatation of the posterior bile duct with multiple stones and peripheral enhancement of the cystic dilatation (Fig. 1). Magnetic resonance cholangiopancreatography (MRCP) showed dilatation of both intrahepatic bile ducts that is congenital biliary dilatation (Todani type IV-A) (Fig. 2).

Because cholangitis of the posterior bile duct was suspected, the patient underwent double-balloon endoscopy for endoscopic retrograde cholangiography with a short enteroscope (EI-530B; Fujifilm, Tokyo, Japan). The hepaticojejunostomy anastomosis was widely patent (Fig. 3). We sought the posterior branch with the guidewire but were unsuccessful because the intrahepatic bile ducts were widely dilated. Therefore, we exchanged the double-balloon endoscope for an ultrasmall endoscope (EG-L580NW, outer diameter 5.8 mm, working channel 2.4 mm; Fujifilm), leaving the overtube in place with balloon inflation.

The ultrasmall endoscope was advanced to the hepaticojejunostomy anastomosis and directly inserted into the intrahepatic bile ducts. We identified a membranous stricture of the posterior branch (Fig. 4) and cannulated it successfully. Cholangiography revealed multiple stones in the dilated posterior bile duct (Fig. 5). We performed biliary drainage with a 6-Fr double-pigtail plastic stent (Fig. 6). Bacterial culture of the bile juice revealed Escherichia coli overgrowth, and cytologic analysis showed no malignancy. A definitive diagnosis of cholangitis was obtained. Thereafter, the patient’s general condition and the results of clinical analyses rapidly improved.

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Fig. 5 Cholangiography with an ultrasmall endoscope through the overtube reveals multiple stones in the dilated posterior bile duct.

Fig. 6 Biliary drainage is performed with a 6-Fr double-pigtail plastic stent via an ultrasmall endoscope.