Effective endoscopic treatment of intrahepatic stones after Roux-en-Y hepaticojejunostomy: a pediatric case

An 11-year-old Japanese boy presented to our hospital with intrahepatic biliary duct stones and regional cholangitis. He had undergone cholecystectomy, complete excision of the extrahepatic biliary duct, and Roux-en-Y hepaticojejunostomy for choledochal cysts (Todani classification IVa) at the age of 8 years. Abdominal magnetic resonance imaging confirmed cystic dilatation of the left hepatic duct and the presence of left intrahepatic biliary duct stones (▶ Fig. 1a).

During long school vacations, three separate endoscopic procedures using balloon enteroscopy (SIF-190 or H290S; Olympus, Japan) were performed to improve the long-term prognosis following the choledochal cyst surgery. During the first session, endoscopic biliary drainage with multiple plastic stents was performed to reduce the size of the stones by abrasion between the plastic stents and the stones, while also avoiding recurrence of the cholangitis (▶ Fig. 1b, c). The second session 3 months later involved removal of the left intrahepatic biliary duct stones using a basket catheter (8-wire Nitinol basket; Medico’s Hirata Inc, Osaka, Japan) (▶ Fig. 1d, e) and placement of a fully covered self-expandable metal stent (FCSEMS; Bonastent, Sewoon Medical Inc., Seoul, South Korea) at the left intrahepatic duct to dilate the anastomosis of the left hepatic duct (▶ Fig. 2a, b). The third endoscopic procedure 6 months later aimed to confirm the stones had disappeared and to remove the FCSEMS and plastic stent. The intrahepatic biliary stones were confirmed to have disappeared following these procedures, and the patient’s outcome was good during 12 months of follow-up (▶ Fig. 2c–e; ▶ Video 1).

Postoperative complications of choledochal cysts generally worsen the outcome and represent a major challenge...
[1]. Patients with choledochal cysts are mainly operated on during childhood, and a patient’s quality of life is rapidly reduced through the appearance of symptoms. These scheduled endoscopic procedures can be considered an option to the standard procedure for choledochal cyst anastomotic strictures, allowing for treatment planning that corresponds to the lifestyle of the affected child and allows the anastomosis to be extended for a period of time with an FCSEMS.

Competing interests
The authors declare that they have no conflict of interest.