Balloon-catheter-assisted endoscopic snare resection for choledochocoele using a single-channel duodenoscope

Choledochocoele, or type III choledochal cyst in Todani's classification, is a rare congenital disease [1–3]. Pancreatobiliary symptoms and the risk of malignancy are the reasons for treatment, which is usually done by surgical excision or, in some cases, by endoscopic resection [2–5].

A 75-year-old man with abdominal pain, jaundice, occasional fever, elevated canalicular enzymes, conjugated bilirubin (1.3 mg/dL, normal range 0.1–0.4 mg/dL) and cholelithiasis, and choledocholithiasis with common bile duct dilatation as seen on ultrasonography and CT scan, underwent endoscopic retrograde cholangiopancreatography (ERCP), which also revealed a choledochocoele (• Fig. 1). The patient refused surgery and a balloon-catheter-assisted endoscopic snare resection with a single-channel therapeutic duodenoscope was performed.

After catheterization of the common bile duct with a guide wire, a balloon catheter was passed through the loop of a 20-mm-diameter snare which wrapped around the wire and was then inserted deeply into the choledochocoele (• Fig. 2). The insufflated balloon was pulled back toward the duodenal lumen and the snare grasped close to the base of the choledochocoele, and the marsupialization was completed (• Fig. 3). After this, sphincterotomy was performed and stones removed.

The cyst had duodenal mucosa externally and choledochal mucosa internally with no atypical changes. A laparoscopic cholecystectomy was done and the patient remains without symptoms and with normal findings on endoscopic follow-up after 1 year (• Fig. 4).

The risk of biliary duct perforation during surgical resection is well known; however, because endoscopic resection is a new method, the risk it presents is as yet unknown; more studies are needed on this subject. The technique employed here has been described before using a double-channel duodenoscope, and this is easier because it is not necessary to manage the accessories outside of the duodenoscope before introducing the whole system into the channel [5]. How-

Fig. 1 Endoscopic retrograde cholangiopancreatography showing the choledochocoele.

Fig. 2 Snare wrapped around the balloon to fit in a single-channel duodenoscope.

ever, since a double-channel duodenoscope is not available in all hospitals, the present case report shows that the single-channel technique can be performed with the same results and is also an innovative and minimally invasive technique

for the treatment of symptomatic choledochocoele.

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Competing interests: None

Fig. 3 Balloon-catheter-assisted endoscopy snare resection technique: schematic diagram and endoscopic image.

Fig. 4 Follow-up 1 year after endoscopic resection.

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