

Needle-knife papillotomy of a choledochocele: a safe solution for a technically challenging dilemma



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When present, a type III choledochal cyst or choledochocele can obscure the papillary orifice, making biliary cannulation during ERCP exceedingly difficult. We present a novel needle-knife papillotomy technique to achieve biliary access in the presence of a choledochocele.

CASE PRESENTATION

A 79-year-old woman was transferred to our hospital with choledocholithiasis and abnormal liver tests (total bilirubin 4.5 mg/dL, aspartate aminotransferase 223 units/L, alanine aminotransferase 251 units/L, and alkaline phosphatase of 115 units/L). The initial attempt at ERCP was unsuccessful because of a large, obstructing subepithelial mass at the major papilla obscuring visualization of the papillary orifice (Fig. 1). This procedure was aborted, and the patient was referred for an MRCP, which revealed a cystic mass (21 × 27 mm) extending from the common bile duct in the duodenal lumen, consistent with a type A choledochocele (Fig. 2). She subsequently underwent EUS and a second attempt at ERCP.

The initial attempt at traditional biliary cannulation with a sphincterotome (Boston Scientific, Marlborough, Mass,

USA) was unsuccessful. Using a needle knife (Boston Scientific; ERBE USA, Marietta, Ga, USA) with the free-hand technique (ERBE ENDO CUT I Effect 2, Cut duration 2, Cut interval 3; ERBE USA), we performed fenestration of the cyst measuring approximately 25 mm in length with immediate release of bile and decompression of the cyst. Successful biliary cannulation was achieved via the fenestrated choledochocele. Contrast was noted as filling the biliary cyst and bile ducts (Fig. 3). Balloon sweeps of the main bile duct expressed stones and debris, and a plastic transpapillary stent (10F × 7 cm) was placed. The patient later underwent cholecystectomy and returned for follow-up ERCP; cholangioscopy and intracystic biopsy samples were negative for dysplasia or neoplasm.

DISCUSSION

Choledochal cysts are characterized by anomalous dilations of the extrahepatic or intrahepatic biliary system and are classified based on site, shape, and extent of biliary tree involvement.¹⁻³ Although rare, these cysts are clinically

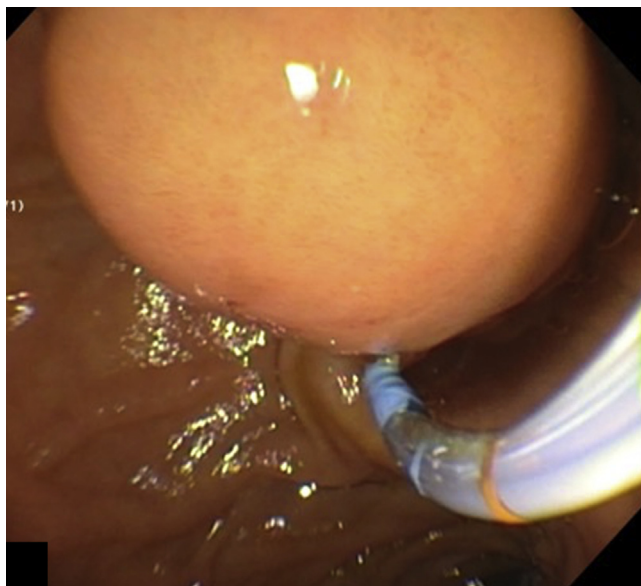


Figure 1. Endoscopic view of the major papilla with a large choledochocele obscuring the papillary orifice.



Figure 2. T2-weighted MRI sequence displaying a large choledochocele protruding into the duodenal lumen.



Figure 3. Cholangiogram displaying filling of the choledochocoele in the distal common bile duct.

significant because they carry an appreciable lifetime risk for malignancy, and surgical excision is generally recommended.³⁻⁵

A type III choledochal cyst is a cystic dilatation of the distal common bile duct that is confined to the wall of the duodenum (intraduodenal) and protrudes into the duodenal lumen.^{3,6} Termed “choledochocoele” by Wheeler in 1940,⁷ this subtype is considered the least common of choledochal cysts and represents less than 5% of all reported cysts.^{6,7}

Choledochocoeles are often discovered incidentally. However, when symptomatic, the most common clinical presentation is acute pancreatitis, comprising 38% to 70% of presentations.^{3,6} Primary choledocholithiasis or cystolithiasis is also commonly described as resulting from the accumulation of stones and debris within the cyst or intracystic biliary stasis, which contributes to stone formation in approximately 20% of cases.⁶ Compared with other types of choledochal cysts, choledochocoeles are less commonly associated with jaundice

or cholangitis.⁶ Choledochocoeles have an extremely low risk of malignancy, but neoplasms within these lesions have been reported, with an approximate risk of 2% to 2.5%. Concurrent ampullary carcinoma, periampullary carcinoma, or cholangiocarcinoma have also been reported.^{5,6} The necessity and duration of endoscopic surveillance are unknown.⁸

Because of the exceedingly low risk for malignancy, endoscopic sphincterotomy and surveillance is an acceptable treatment strategy and is generally recommended over formal excision.⁵ Novel endoscopic therapies have been described, and, in cases in which the biliary orifice is obscured, needle-knife papillotomy provides a safe and effective therapy for the drainage of choledochocoeles and access to the bile duct.

DISCLOSURE

All authors disclosed no financial relationships.

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<https://doi.org/10.1016/j.vgie.2020.04.019>