Cholangioscopy-assisted endoscopic mucosal resection for gallbladder polyp and stone extraction for cholecystocholedocholithiasis.

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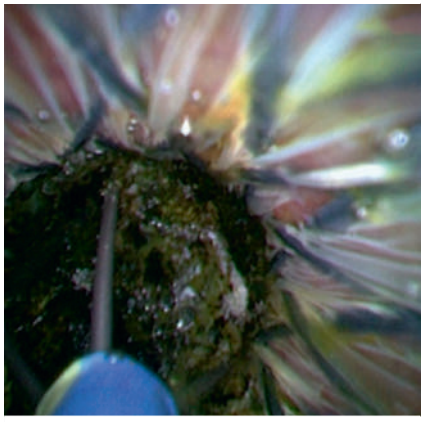
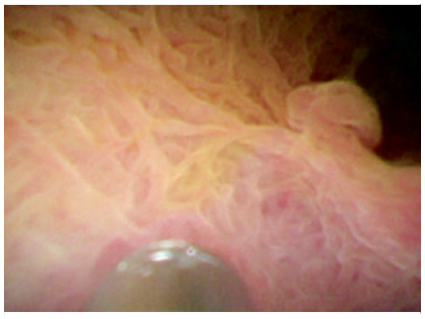
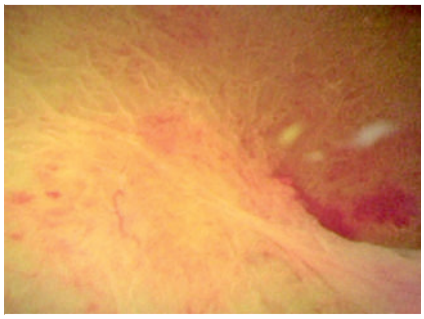


▶ **Fig. 1** A basket was inserted into the common bile duct (CBD) through the working channel of cholangioscope and frapped the stone firmly under direct vision.

▶ **Fig. 3** The specially designed snare was inserted into the CBD, and the polyp was resected successfully using the snare by the electrocision function.



▶ **Fig. 2** An approximately 0.2-cm gallbladder polyp was found.



▶ **Fig. 4** The appearance of the postoperative wound.

Video 1 The procedures of cholangioscopy-assisted endoscopic mucosal resection for a gallbladder polyp and stone extraction for cholecystocholedocholithiasis.

A 58-year-old man with cholecystocholedocholithiasis was assessed in our hospital. Preoperative computerized tomography (CT) showed a 0.6-cm common bile duct (CBD) stone combined with sediment-like gallstones. Therefore, we performed cholangioscopy-assisted extraction through papillary stent [1] for him.

First, biliary intubation was conducted and a single dumbbell-style papillary support was placed in the CBD and papilla. The cholangioscope (eyeMax, 9 F; MicroTech, Nanjing, China) was then inserted into the CBD and a black stone was found. A basket was inserted into the CBD through the working channel of cholangioscope and frapped the stone (▶ **Fig. 1**). We subsequently removed the stone from the CBD by withdrawing the cholangioscope and basket together. The cholangioscope was then inserted into gallbladder through the cystic duct over a guidewire, and the sediment-like gallstones were removed by the aspiration function under direct vision. An approximately 0.2-cm gallbladder polyp was found (▶ **Fig. 2**). We then performed cholangioscopy-assisted endoscopic mucosal resection (CA-EMR) [2] for the gallbladder polyp using a snare with the electrocision function (Jiangsu Changmei Medtech; Changzhou, China), which can pass through the working channel of a cholangioscope (▶ **Fig. 3**, ▶ **Fig. 4**). Finally, naso-gallbladder drainage was per-

▶ **Fig. 5** We performed a cholangioscopy-assisted endoscopic mucosal resection for another patient with a CBD polypoid lesion.

formed (▶ **Video 1**). The patient's recovery was smooth.

With the improvement and popularization of radiological techniques, more and more polypoid lesions in the biliary duct and gallbladder have been found [3]. Patients with polypoid lesions in the biliary system often faced a dilemma. Surgical treatment for polypoid lesions was accompanied by relatively major trauma; on the other hand, follow-up observation came with the risk of progression of the lesions. Recently, our team introduced CA-EMR for CBD mucosa in the porcine model [2]. Subsequently, we successfully performed this technique for a patient with a polypoid lesion in the clinic [4] (▶ **Fig. 5**). In this study, we further confirmed the feasibility of CA-EMR for a gallbladder polyp in the clinic. Moreover, this study verified that it was feasible to perform cholangioscopy-assisted extraction through papillary stent for CBD stones combined with sediment-like gallstones.

Endoscopy_UCTN_Code_TTT_1AS_2AH

Funding Information

National Key Research and Development Program of China
http://dx.doi.org/10.13039/501100012166
2022YFC2503600

Conflict of Interest

The authors declare that they have no conflict of interest.

The authors

Wengang Zhang[1], Ningli Chai[1], Yujie Feng[2], Jiafeng Wang[2], Qingzhen Wu[2], Zhenyu Liu[2], Enqiang Linghu[2]

1 Department of Gastroenterology, The First Medical Center of Chinese PLA General Hospital, Beijing, China
2 Department of Gastroenterology, Chinese PLA General Hospital, Beijing, China

Corresponding author

Enqiang Linghu, MD
Department of Gastroenterology, The First Medical Center of Chinese PLA General Hospital, 28 Fuxing Road, Haidian District, Beijing, China
linghuenqiang@vip.sina.com

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Endoscopy 2024; 56: E303–E304
DOI 10.1055/a-2281-9743
ISSN 0013-726X

Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany