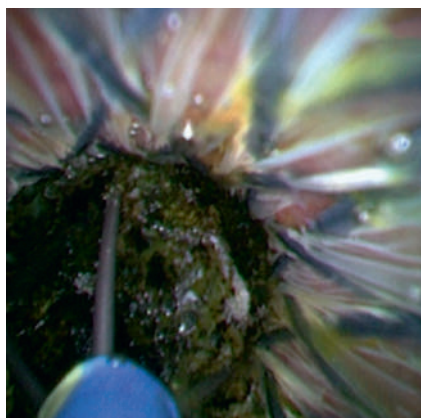


Cholangioscopy-assisted endoscopic mucosal resection for gallbladder polyp and stone extraction for cholecystocholedocholithiasis.

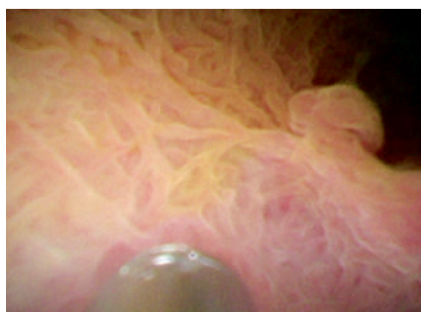
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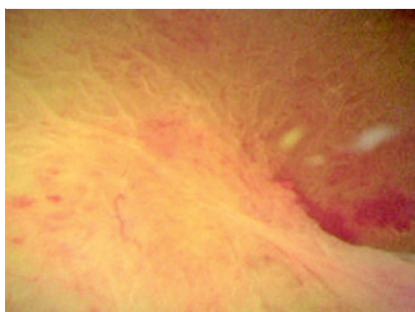
► **Fig. 1** A basket was inserted into the common bile duct (CBD) through the working channel of cholangioscope and frapped the stone firmly under direct vision.



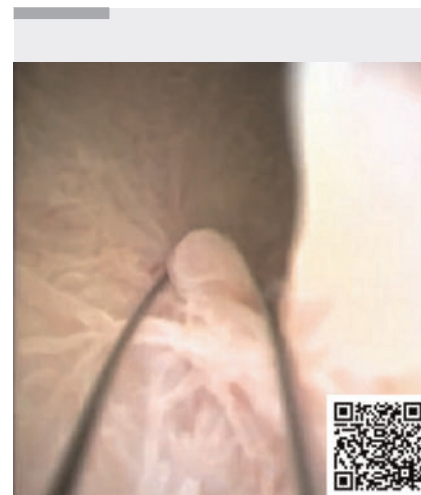
► **Fig. 3** The specially designed snare was inserted into the CBD, and the polyp was resected successfully using the snare by the electrocision function.



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



► **Fig. 4** The appearance of the post-operative wound.



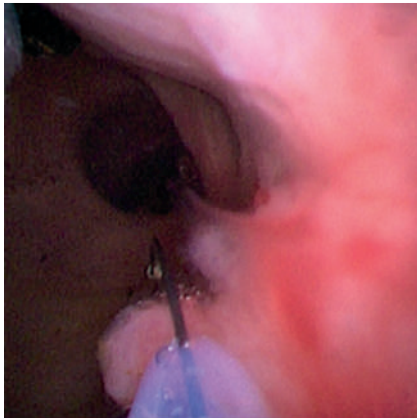
► **Video 1** The procedures of cholangioscopy-assisted endoscopic mucosal resection for a gallbladder polyp and stone extraction for cholecystocholedocholithiasis.

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, 9F; Micro-Tech, 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 gall-

bladder 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.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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