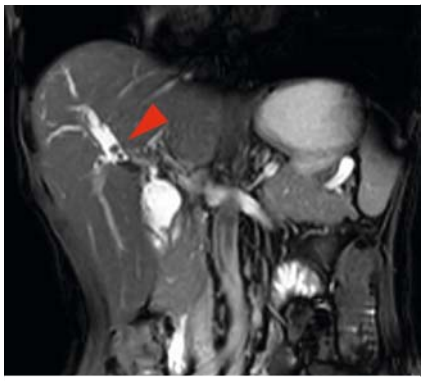
Electrohydraulic lithotripsy for hepatolithiasis in a stenotic intrahepatic bile duct after Roux-en-Y hepaticojejunostomy



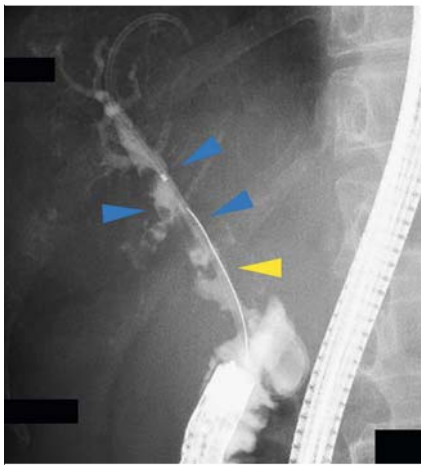
▶ **Fig. 1** Magnetic resonance cholangiopancreatography revealed stones in the right hepatic bile duct (red arrowhead).

Video 1 Electrohydraulic lithotripsy for hepatolithiasis in a stenotic intrahepatic bile duct after Roux-en-Y hepaticojejunostomy.

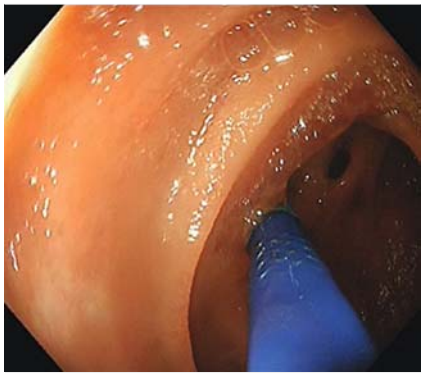
Digital single-operator cholangioscopy (DSOC) has increasingly been used in combination with electrohydraulic lithotripsy (EHL) to remove impacted stones, confluence stones, and stones in patients with surgically altered anatomy [1–4]. We present a case of hepatolithiasis in a stenotic intrahepatic bile duct after Roux-en-Y hepaticojejunostomy treated by EHL using DSOC (SpyGlass DS system; Boston Scientific Corp., United States) inserted through a colonoscope with a large working channel.

A 56-year-old woman with a history of Roux-en-Y hepaticojejunostomy for congenital biliary dilation and pancreaticobiliary maljunction was referred for treatment of hepatolithiasis. She underwent endoscopic retrograde cholangiography (ERCP) at the referring institution due to elevated hepatobiliary enzymes and hepatolithiasis noted on magnetic resonance cholangiopancreatography (▶ **Fig. 1**). There, the endoscopist could not remove the stones but managed to insert a plastic biliary stent.

The patient was admitted to our hospital and ERCP was performed using a colonoscope with a 3.7-mm working channel (CF-HQ290ZI; Olympus Corp., Japan) (▶ **Video 1**). Fluoroscopy confirmed multiple stones in the right intrahepatic bile duct (▶ **Fig. 2**). The stones could not be removed using a retrieval basket or balloon. We therefore inserted a cholangioscope through the channel of the colonoscope, which revealed intrahepatic biliary stenosis in addition to multiple stones (▶ **Fig. 3**). We dilated the biliary stenosis using a balloon dilator before reinserting the cholangioscope to perform EHL using Autolith (▶ **Fig. 4**). In two sessions all stones were removed (▶ **Fig. 5**). Brushing cytology of the biliary stenosis was negative for malignancy.

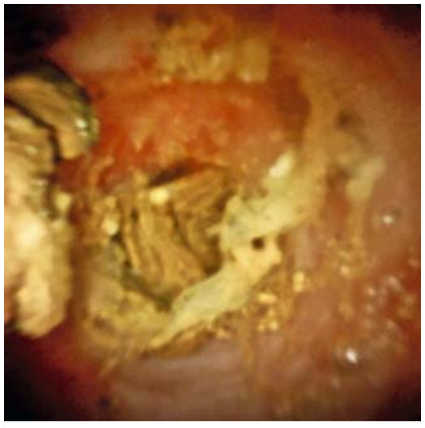


▶ **Fig. 2** Intrahepatic biliary stenosis (yellow arrowhead) and multiple filling defects suggestive of hepatolithiasis (blue arrowheads) were observed on fluoroscopy.



▶ **Fig. 3** Endoscopic view of the cholangioscope being inserted into the anastomosis of the right intrahepatic bile duct.

Successful EHL using DSOC through a colonoscope in a nonstenotic bile duct has been reported [5]. While percutaneous cholangioscopy and endosonography-guided lithotripsy are alternatives for dif-



▶ **Fig. 4** SpyGlass DS cholangioscopy showing the hepatolithiasis and intrahepatic biliary stenosis after dilation.

▶ **Fig. 5** Fluoroscopy confirmed the absence of residual stones in the right anterior duct.

ficult stones in surgically altered anatomy, in those procedures the bile duct must be dilated and a new fistula created. Our method can be used in a stenotic and/or nondilated intrahepatic bile duct without creating a new fistula.

Endoscopy_UCTN_Code_TTT_1AR_2AK

Competing interests

The authors declare that they have no conflict of interest.

The authors

Kenji Nakamura[1], Takeshi Okamoto[2], Tadashi Katayama[1], Yutaka Takigawa[3], Katsuyuki Fukuda[2], Hiroshi Kishikawa[1], Jiro Nishida[1]

1 Department of Gastroenterology, Tokyo Dental College, Ichikawa General Hospital, Chiba, Japan
2 Department of Gastroenterology, St. Luke's International Hospital, Tokyo, Japan
3 Department of Surgery, Tokyo Dental College, Ichikawa General Hospital, Chiba, Japan

Corresponding author

Kenji Nakamura, MD, PhD
Department of Gastroenterology, Tokyo Dental College, Ichikawa General Hospital, 5-11-13, Sugano, Ichikawa, 272-8513 Chiba, Japan
kenakamura@tdc.ac.jp

References

[1] Chen YK, Pleskow DK. SpyGlass single-operator peroral cholangioscopy system for the diagnosis and therapy of bile-duct disorders: a clinical feasibility study (with video). Gastrointest Endosc 2007; 65: 832–841
[2] Skinner M, Popa D, Neumann H et al. ERCP with the overtube-assisted enteroscopy technique: a systematic review. Endoscopy 2014; 46: 560–572
[3] Kawakami H, Kubota Y, Kawahata S et al. Peroral transhepatic cholangioscopy-guided electrohydraulic lithotripsy via an endoscopic ultrasonography-guided hepaticogastrostomy route for bile duct stones in a patient with Roux-en-Y anatomy. Endoscopy 2016; 48: E146–E147
[4] Weilert F, Binmoeller KF, Marson F et al. Endoscopic ultrasound-guided anterograde treatment of biliary stones following gastric bypass. Endoscopy 2011; 43: 1105–1108
[5] Baron TH, Saleem A. Intraductal electrohydraulic lithotripsy by using SpyGlass cholangioscopy through a colonoscope in a patient with Roux-en-Y hepaticojejunostomy. Gastrointest Endosc 2010; 71: 650–651

Bibliography

Endoscopy 2022; 54: E61–E62
DOI 10.1055/a-1381-6152
ISSN 0013-726X
published online 5.3.2021

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