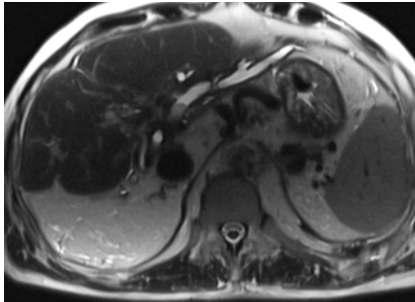
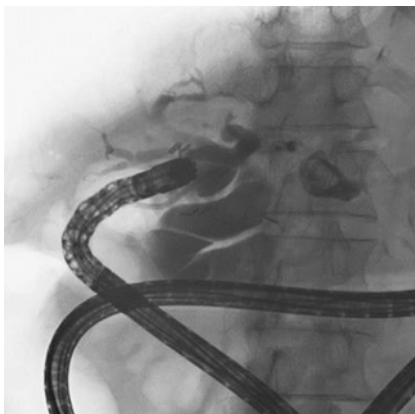


Percutaneous transhepatic digital single-operator cholangioscopy-guided laser lithotripsy in treating difficult intrahepatic duct stone in surgically altered anatomy

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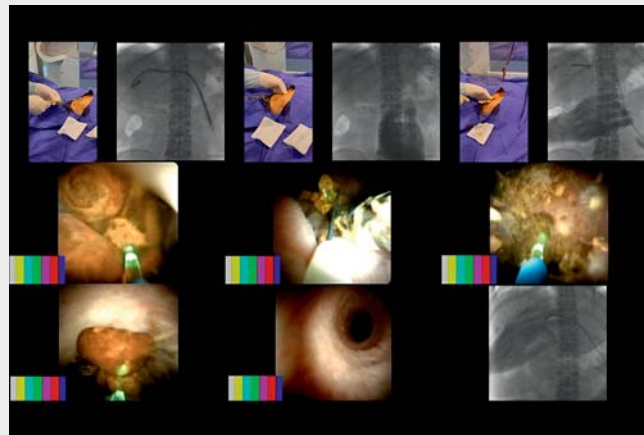
► **Fig. 1** Magnetic resonance imaging showed multiple large and impacted left intrahepatic duct stones.



► **Fig. 2** Cholangiogram showed residual intrahepatic duct stone proximal to the intrahepatic duct stricture.

Endoscopic intrahepatic duct (IHD) stone management in patients with surgically altered anatomy is a major technical challenge [1,2].

A 74-year-old man with a history of hilar resection with Roux-en-Y hepaticojejunostomy from a hilar tumor presented with a history of cholangitis. Magnetic resonance imaging showed multiple large left IHD stones (► **Fig. 1**). Despite balloon enteroscopy-assisted endoscopic retrograde cholangiopancreatography and percutaneous cholangioplasty, residual impacted IHD stones were present



► **Video 1** Presentation of the case and percutaneous transhepatic cholangioscopy-guided laser lithotripsy.



► **Fig. 3** A novel short-length (65 cm) cholangioscope.

within the left IHD proximal to the stricture (► **Fig. 2**). After multidisciplinary team discussion, the patient underwent percutaneous transhepatic cholangioscopy-guided laser lithotripsy (► **Video 1**). The percutaneous tract was dilated up to 14 Fr and left to mature for 8 weeks. General anesthesia and prophylactic antibiotic administration were performed. The guidewire (0.035-inch, Visiglide; Olympus, Tokyo, Japan) via the percutaneous transhepatic biliary drainage catheter (14Fr, biliary catheter; Cook Medical, Bloomington, Indiana, USA) was inserted into the left IHD to reach the jejunum beyond the anastomosis. The catheter was then removed. A novel short-length (65 cm) cholangioscope (SpyGlass Discover Digital Catheter; Boston Scientific, Marlborough, Massachusetts, USA) was introduced over the wire into the IHD (► **Fig. 3**). The previously placed stent was removed using a SpySnare (Boston Scientific). A laser fiber (Jena Surgical, Brüsseler, Germany) was introduced. We performed laser lithotripsy from the central portion and moved upstream to the periphery. Stone fragments were flushed downstream into the jejunum until completely cleared. The patient recovered well and was discharged on Day 2 after the procedure.

For technical consideration, the percutaneous access tract of at least 12 Fr in size should be left for at least 4–8 weeks to ensure tract maturation. The short-length cholangioscope was preferable for percutaneous access owing to the ease of scope maneuverability and high scope stability, as well as low risk of endoscopy-related infection.

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Competing interests

The authors declare that they have no conflict of interest.

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References

- [1] Skinner M, Popa D, Neumann H et al. ERCP with the overtube-assisted enteroscopy technique: a systematic review. *Endoscopy* 2014; 46: 560–572
- [2] Wang J, He Y, Yu D et al. Endoscopic retrograde cholangiopancreatography with balloon-assisted enteroscopy in patients with Roux-en-Y anastomosis and Whipple operation. *Medicine (Baltimore)* 2020; 99: e22653

Bibliography

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