

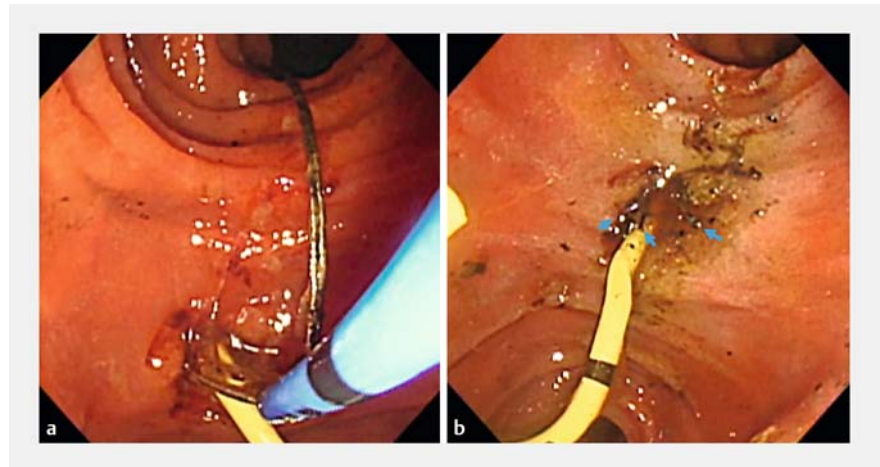
Successful troubleshooting for “stone-basket impaction” using argon plasma coagulation and a novel device delivery system



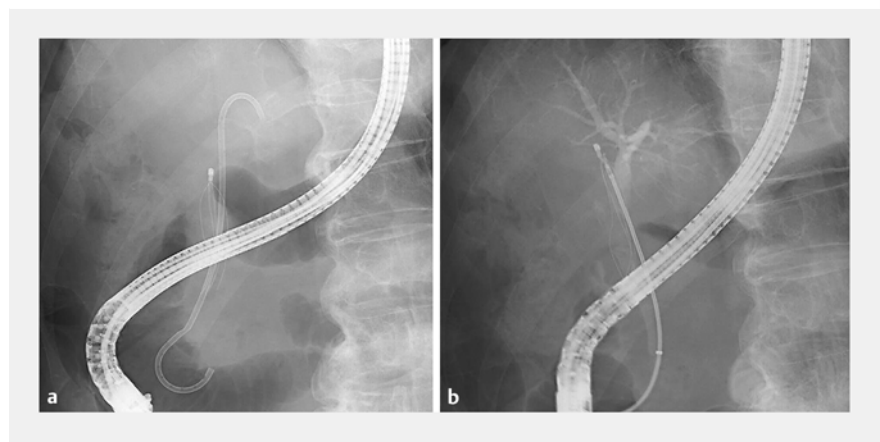
Various techniques, including the use of a transoral endotripter, extracorporeal shock wave lithotripsy, and electrohydraulic lithotripsy (EHL), have been reported to resolve basket catheter impaction [1]. Additionally, argon plasma coagulation (APC) may be effective in cutting metal wires [2]. We describe a successful troubleshooting method to resolve stone-basket impaction that is achieved by cutting the basket wires using APC and removing them via a novel device delivery system.

An 88-year-old man was referred to our hospital with obstructive jaundice caused by a biliary stone. Endoscopic retrograde cholangiopancreatography (ERCP) showed a 12-mm stone in the common bile duct. A mechanical lithotripter (StoneSmash; Boston Scientific, Massachusetts, USA) was used in an attempt to remove the stone, but the stone could not be crushed and the lithotripter became stuck in the bile duct. Rescue therapy using a transoral endotripter failed and emergent EHL was not available. After biliary stenting had been performed, the wires were cut in the duodenum, taking 5 minutes, with APC (VIO300D with APC2; 80W, flow rate 2 L/min; ERBE Elektromedizin, Tübingen, Germany) (► **Fig. 1 a**). Thereafter, it was possible to extract the body of the mechanical lithotripter (► **Fig. 1 b**), but the impacted wires and entrapped stone remained in the bile duct.

A second ERCP was performed 1 week later to remove these. The cut wire ends had migrated into the common bile duct (► **Fig. 2 a**). After the stent had been removed, an endoscopic sheath (outer and inner diameters 2.4 mm and 2.06 mm, respectively; Endosheather; Piolax Medical Devices, Kanagawa, Japan) [3] was inserted over the guidewire. The inner catheter and guidewire were removed, leaving the outer sheath in place. A biopsy forceps (diameter 1.8 mm; Radial Jaw;



► **Fig. 1** Endoscopic images showing: **a** the basket wire about to be cut by argon plasma coagulation in the duodenum; **b** the extracted body of the mechanical lithotripter and the cut wire ends exposed to the duodenum (blue arrows).



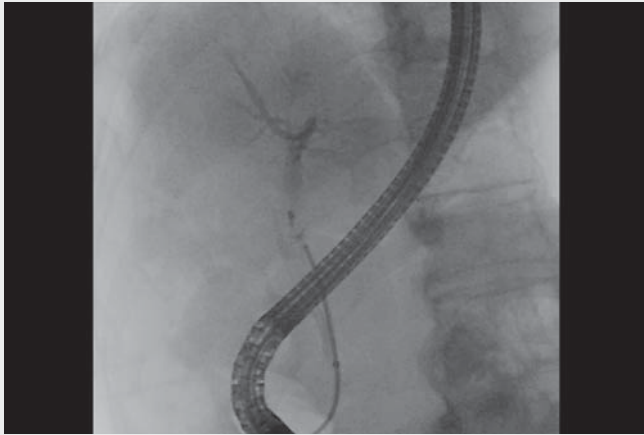
► **Fig. 2** Fluoroscopic images showing: **a** the cut wire ends that had migrated into the common bile duct; **b** the migrated wires grasped with a forceps that had been inserted through a novel delivery system.

Boston Scientific) was inserted through the outer sheath, and the migrated wires were successfully grasped with the forceps and removed (► **Fig. 2 b**). The stones were then crushed by cholangioscopy-guided EHL and removed using a balloon catheter (► **Video 1**).

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Competing interests

The authors declare that they have no conflict of interest.



Video 1 An impacted basket wire catheter is cut by argon plasma coagulation and the migrated wires within the common bile duct are removed with forceps inserted through a novel device delivery system, allowing cholangioscopy-guided electrohydraulic lithotripsy to be performed, with subsequent successful removal of the stones.

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References

- [1] Tsuchiya T, Itoi T, Sofuni A et al. Rescue of basket-impacted stone by use of electrohydraulic lithotripsy under cholangioscopy. *Gastrointest Endosc* 2014; 79: 376
- [2] Mandai K, Uno K, Suzuki A et al. Use of argon plasma coagulation to successfully retrieve a snare forceps stuck in a laser-cut covered self-expandable metal biliary stent. *Endoscopy* 2020; 52: E255–E256
- [3] Mandai K, Inoue T. A novel technique of intraductal ultrasonography using a newly designed endoscopic sheath and Y-connector during endoscopic retrograde cholangiography. *Endoscopy* 2023; 55: E159–E160

Bibliography

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