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Recanalization using a novel drill-shaped dilator for a severe pancreatic duct stricture and impacted pancreatic duct stone

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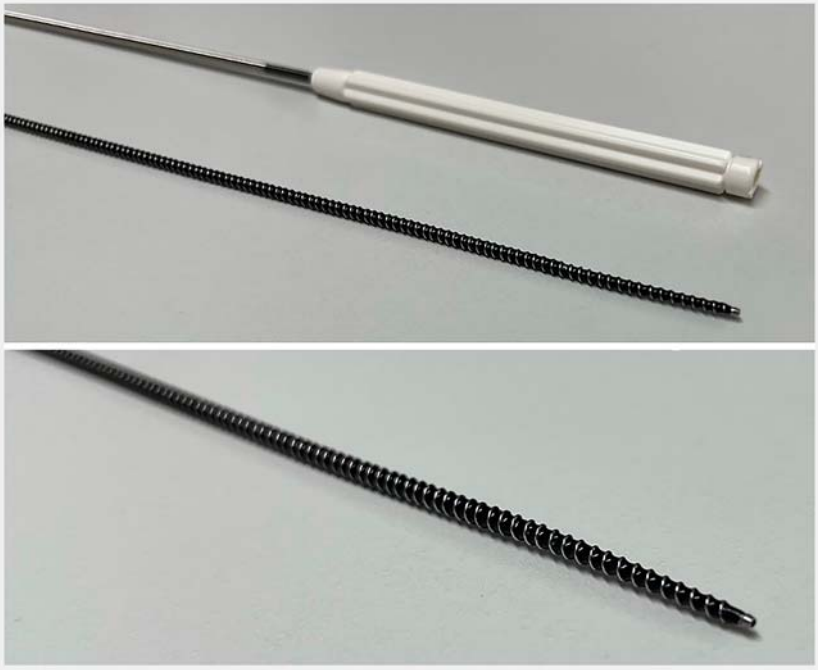
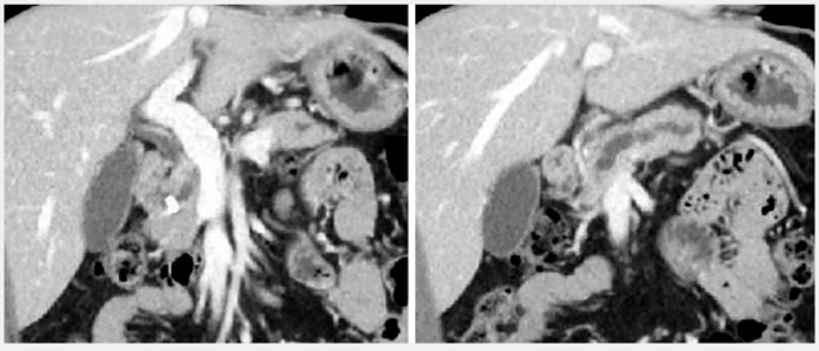
Pancreatic duct stones can cause severe acute pancreatitis and are sometimes fatal. Endoscopic pancreatic duct drainage has been established as a first-line treatment [1,2]; however, hard stones can make passing through strictures challenging. A Soehendra stent retriever with a screw tip (SSR-7; Cook Medical, Tokyo, Japan) may be useful in this situation [3], but a serious complication can occur should the tip of the stent retriever detach and migrate into the pancreatic duct [4]. A novel dilator with a unique shape was recently developed (Tornus ES for 0.025-inch guidewire; 7 Fr, stainless steel; Asahi Intecc, Aichi, Japan) [5] (▶ **Fig. 1**). This drill-shaped dilator can be rotated to break through strictures. Here, we describe recanalization using this novel drill-shaped dilator for a patient with severe pancreatic duct stricture and an impacted pancreatic duct stone (▶ **Video 1**).

A 49-year-old man with acute pancreatitis due to a pancreatic duct stone was admitted to our hospital. Computed tomography scans showed an impacted pancreatic duct stone in the pancreatic head with dilatation of the caudal pancreatic duct (▶ **Fig. 2**). We performed pancreatic duct drainage via the papilla. Although the caudal pancreatic duct could not be visualized on pancreatography because of the impacted stone, a guidewire was advanced across the stone into the dilated caudal pancreatic duct (▶ **Fig. 3**). Despite the use of various dilation devices, it was difficult to break through the stricture. With clockwise rotation, the novel drill-shaped dilator could however be passed through the stricture, while chipping away at the stone, without requiring a strong pushing force (▶ **Fig. 4**). A 5-Fr plastic stent was then successfully placed beyond the pancreatic duct stone (▶ **Fig. 5**). There were no adverse events and the patient was subsequently discharged.



▶ **Fig. 1** Photograph of the novel drill-shaped dilator that can be advanced by rotation of the handle.



▶ **Fig. 2** Computed tomography scans showing pancreatitis due to an impacted pancreatic duct stone in the head of the pancreas

This novel drill-shaped dilator may be safe and effective for severe pancreatic duct strictures, and provides an innovative device for recanalization.

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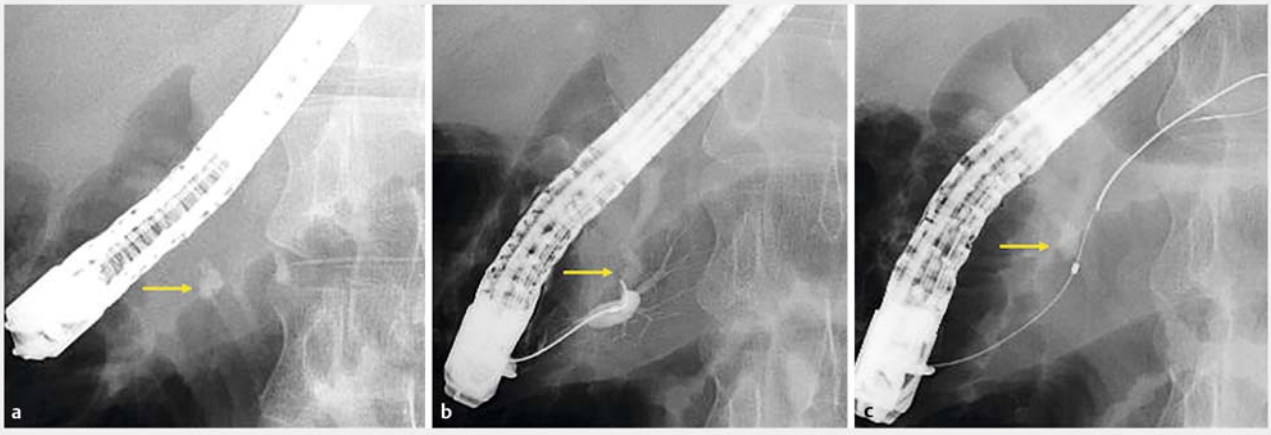
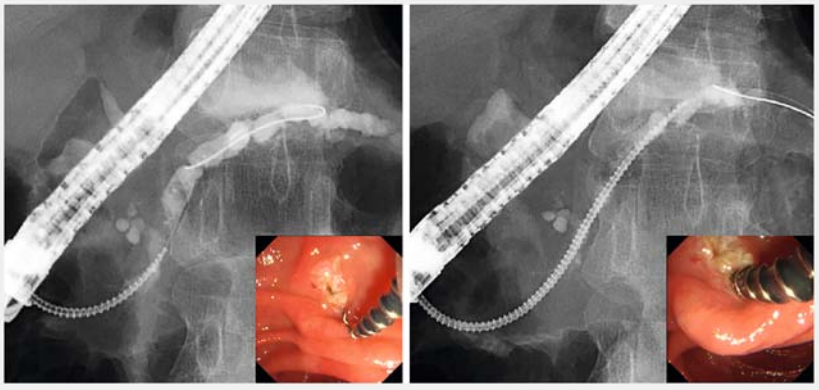


▶ **Fig. 3** Radiographic images taken during endoscopic retrograde pancreatography showing: **a** a large pancreatic duct stone in the pancreatic head (yellow arrow); **b, c** a guidewire advanced into the dilated caudal pancreatic duct, although attempts to pass various dilators through the pancreatic duct stone failed.



▶ **Fig. 4** Fluoroscopic images (inset endoscopic images) showing the drill dilator being successfully passed through the impacted pancreatic duct stone.

▶ **Fig. 5** Fluoroscopic images showing successful placement of a 5-Fr plastic stent beyond the pancreatic duct stone.

Competing interests

The authors declare that they have no conflict of interest.

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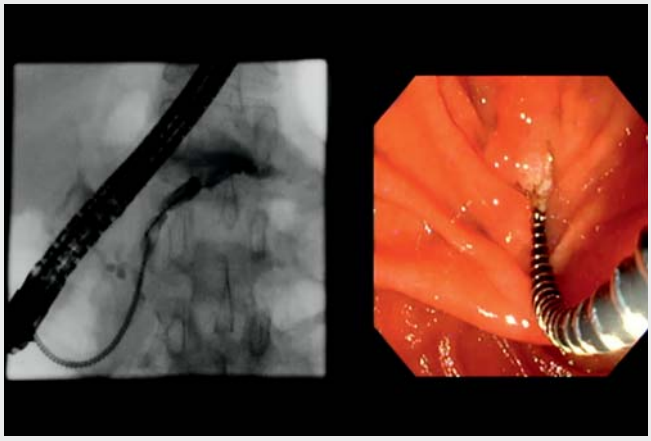

Video 1 Recanalization using a novel drill-shaped dilator in a patient with a severe pancreatic duct stricture and an impacted pancreatic duct stone.

References

[1] Deviere J. Pancreatic stents. Gastrointest Endosc Clin N Am 2011; 21: 499–510

[2] Adler DG, Lichtenstein D, Baron TH et al. The role of endoscopy in patients with chronic pancreatitis. Gastrointest Endosc 2006; 63: 933–937

[3] Ogura T, Kamiyama R, Yamada M et al. Recanalization method for pancreatic duct stricture complicated by a huge pancreatic stone. Endoscopy 2018; 50: E250–E251

[4] Ogura T, Okuda A, Miyano A et al. Successful digital cholangioscopy removal of a stent-retriever tip migrated into the periphery of the bile duct. Endoscopy 2018; 50: E113–E114

[5] Yamada M, Hara K, Haba S et al. Endoscopic ultrasound-guided hepaticogastrostomy using a novel drill dilator. Endoscopy 2022. doi:10.1055/a-1838-3682

Bibliography

Endoscopy 2023; 55: E351–E353
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