Pancreatoscopy-guided laser lithotripsy in a patient with difficult ductal stone

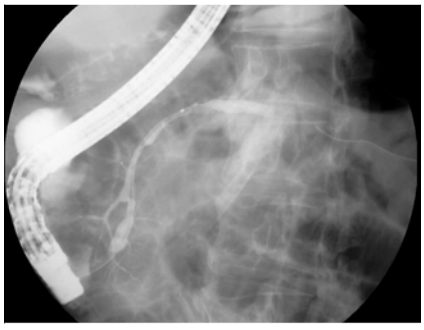
▶ **Fig. 1** Magnetic resonance cholangiopancreatography, showing an abrupt stop at the pancreatic body, followed by major dilation of the remaining body and tail.

A 63-year-old man with heavy alcohol consumption was referred to our institution for upper abdominal pain, weight loss, and a computed tomography scan showing signs of chronic pancreatitis (parenchymal calcifications and atrophy of the pancreatic body/tail).

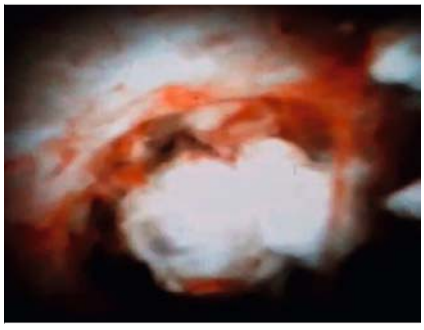
A magnetic resonance cholangiopancreatography was performed, showing Wirsung dilation, namely of the tail, and an abrupt stop in the pancreatic body of unknown cause (▶ **Fig. 1**). Endoscopic ultrasound revealed an intraductal stone in the pancreatic body (7.4 mm), and a dilated Wirsung in the body and tail (▶ **Fig. 2**). The patient underwent endoscopic retrograde cholangiopancreatography (ERCP).

Pancreatography showed an irregular Wirsung contour in the head and irregularity in the body–tail transition, suggestive of an intraductal stone (▶ **Fig. 3**). Pancreatic sphincterotomy was performed, and the calculus was crossed with the guidewire, but it was impossible to cross it with a 6-mm dilation balloon. After hydrostatic balloon dilation of the pancreatic head (up to 6 mm), a pancreatoscope (Spyglass Direct Visualization System; Boston Scientific, Marlborough, Massachusetts, USA) was advanced over a 0.025-inch guidewire to reach a large intraductal stone of 7 – 8 mm in size (▶ **Fig. 4**, ▶ **Video 1**). After targeting the stone, laser bursts (Holmium laser, Auriga XL; Boston Scientific) of less than 5 seconds were delivered through the aqueous medium using a 365-µm diameter fiber (energy level 1200 mJ; frequency of 12 Hz). After stone fragmentation, ductal clearance was achieved with an 8.5-mm extraction balloon. Two pancreatic stents (12 cm, 7 Fr) were placed.

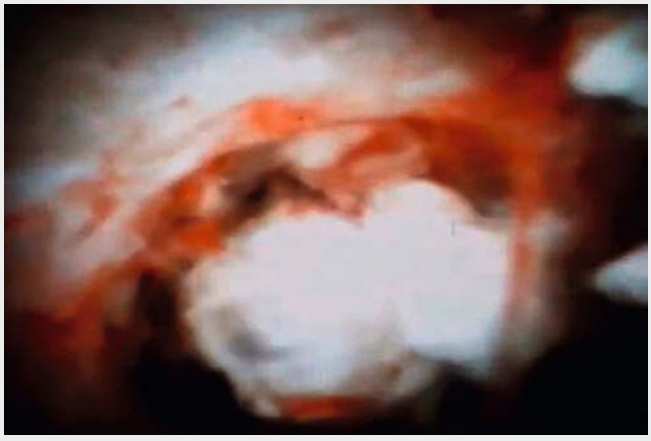
▶ **Fig. 2** Endoscopic ultrasound revealed a large intraductal stone in the pancreatic body (7.4 mm), and a dilated Wirsung in the body and tail.



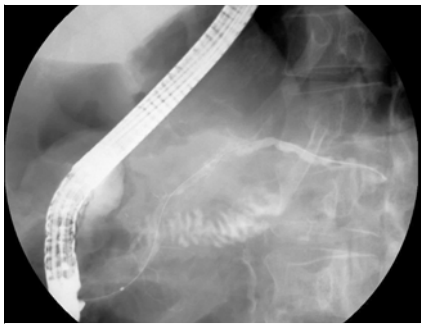
▶ **Fig. 3** Pancreatography showing irregularity in the proximal body, suggesting a large intraductal stone.



▶ **Fig. 4** Pancreatoscopy image showing a large intraductal stone impacted on a main duct stricture.



Video 1 Intraductal pancreatoscopy with holmium laser lithotripsy was performed until complete stone fragmentation was achieved.



▶ **Fig. 5** Pancreatogram image showing resolution of the pancreatic stricture after successful endotherapy.

At follow-up 3 months later, repeat ERCP showed frank improvement of the head stricture, without filling defects in the remaining Wirsung (▶ **Fig. 5**). The patient remained asymptomatic during follow-up (6 months) without further interventions.

Published experience is limited, but pancreatoscopy-guided laser lithotripsy for calcific chronic pancreatitis is a promising technique that can be used as a supplementary approach to extracorporeal shock wave lithotripsy or as a single modality in a small number of stones obstructing the main pancreatic duct [1 – 4].

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Competing interests

Jorge Canena is a consultant for Boston Scientific but did not receive any financial arrangements for this research or any assistance with manuscript preparation.

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References

[1] Attwell AR, Patel S, Kahaleh M et al. ERCP with per-oral pancreatoscopy-guided laser lithotripsy for calcific chronic pancreatitis: a multicenter U.S. experience. Gastrointest Endosc 2015; 82: 311 – 318
[2] Shah J. Innovations in intraductal endoscopy: cholangioscopy and pancreatoscopy. Gastrointest Endosc Clin N Am 2015; 25: 779 – 792
[3] Ang TL. Chronic pancreatitis with pancreatic duct stricture and calculi treated by fully covered self-expandable metal stent placement and intraductal pancreatoscopy-guided laser lithotripsy. Endoscopy 2017; 49: E145 – E146
[4] Maydeo A, Kwek BE, Bhandari S et al. Single-operator cholangioscopy-guided laser lithotripsy in patients with difficult biliary and pancreatic ductal stones (with videos). Gastrointestin Endosc 2011; 74: 1308 – 1314

Bibliography
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