VIDEO CASE REPORT

Endoscopic treatment of large impacted pancreatic ductal stone using digital pancreatoscopy and electrohydraulic lithotripsy

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Patients with chronic pancreatitis can develop pancreatic duct stones. These stones can be asymptomatic when they are small or located in the pancreatic parenchyma, but they can cause problems when they are large enough to obstruct the pancreatic duct, causing worsening abdominal pain, exacerbation of pancreatitis, or both.

In this video, we report the case of a large main pancreatic duct (MPD) stone treated endoscopically with the use of digital pancreatoscopy and electrohydraulic lithotripsy (EHL). A 50-year-old man presented with an acute exacerbation of his established chronic pancreatitis. Abdominal imaging demonstrated a 16-mm pancreatic stone within the MPD at the level of the

Figure 1. Enhanced CT abdominal image (**A**, axial; **B**, coronal) showing impacted stone in pancreatic head with tail-side dilation of main pancreatic duct. The stone is 16 mm in maximum diameter. Pancreatic parenchyma is swelling with an increase in soft tissue density circumference of pancreas.

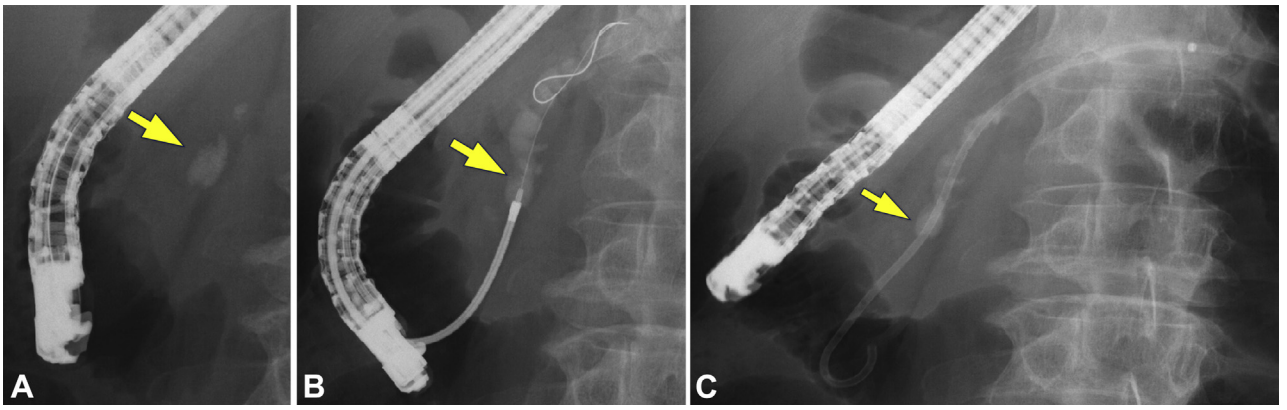

Figure 2. (**A**) ERCP views showing impacted pancreatic stone (*yellow arrow*) and stricture in the pancreatic head and (**B**) advancement of 0.025-inch guidewire upstream to the stone and stricture. After endoscopic pancreatic sphincterotomy, 5F Soehendra stent retriever advanced over the guidewire, 7F × 15cm pancreatic plastic was deployed (**C**).

Written transcript of the video audio is available online at www.VideoGIE.org.

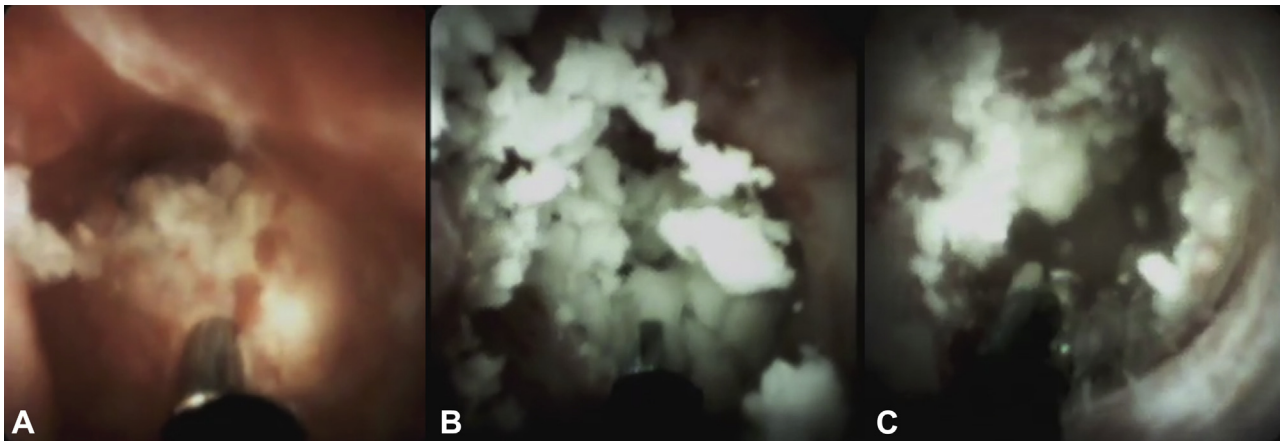

Figure 3. Digital pancreatoscopic image showing large whitish pancreatic duct stone (**A**), which was shattered by electrohydraulic lithotripsy (**B, C**).

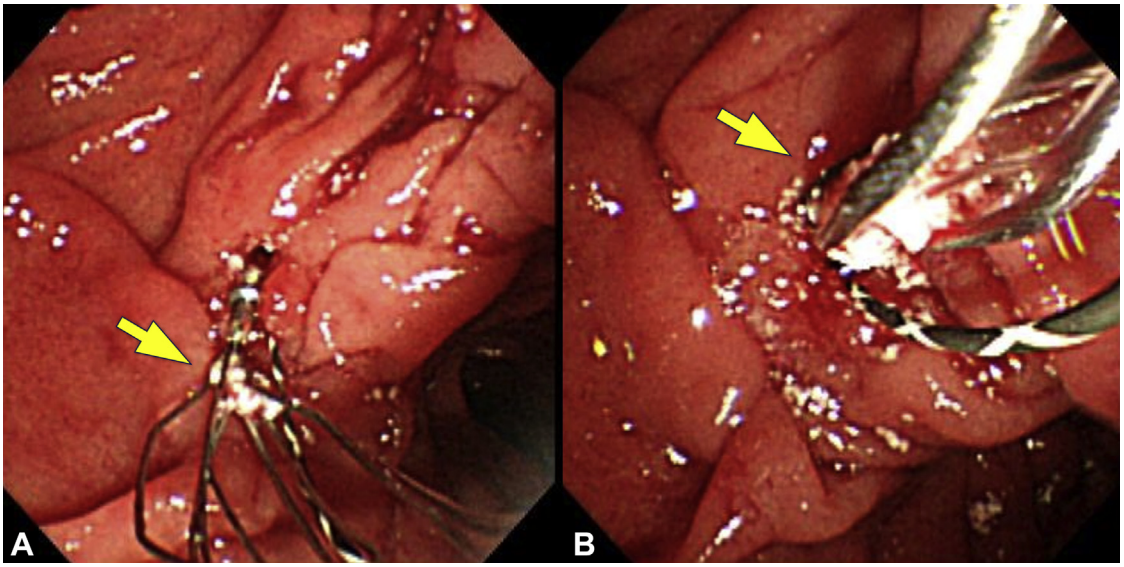

Figure 4. (**A, B**) Shattered pancreatic stones (*yellow arrow*) were seen endoscopically. Fragment and stone extraction and sweeping performed by use of Tetra Catch and Flower Catch.

pancreatic head, upstream pancreatic duct (PD) dilation, and pancreatic edema (Fig. 1). He initially underwent ERCP during which a 7F × 15 cm pancreatic plastic stent was placed to bypass the obstruction (Fig. 2). The patient's symptoms initially improved, and he was discharged. As planned, the patient was readmitted 30 days later. The previously placed plastic stent was removed, and digital pancreatoscopy with direct EHL (number of shots 10, frequency of shots 10, power level 30-40) was performed (Fig. 3; Video 1, available online at www.VideoGIE.org). After successful lithotripsy, the remaining fragments were removed endoscopically with use of a metallic basket (Fig. 4). The pancreatoscope was reintroduced to confirm PD clearance. A pancreatic stent was placed after lithotripsy. The patient was discharged after 3 days, and he has had no recurrence of pancreatic stones after 8 months.

Patients with symptomatic pancreatic duct stones require surgical or endoscopic treatment. In general, extracorporeal shockwave lithothripsy (ESWL) is recommended as a first-line treatment for MPD stones over 5 mm,[1,2] with follow-up ERCP to remove the stone fragments. Direct endoscopic therapy alone with pancreatoscopy and new technologies such as laser lithotripsy and (EHL) have been attempted, with encouraging early reports, but the safety and efficacy of these techniques have not been well described.[3,4] The decision to use

this technique should be made based on available local expertise and multidisciplinary input for patient selection.

DISCLOSURE

All authors disclosed no financial relationships relevant to this publication.

Abbreviations: EHL, electrohydraulic lithotripsy; ESWL, extracorporeal shockwave lithothripsy; MPD, main pancreatic duct.

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