VIDEO CASE REPORT

When cholecystostomy tube and transpapillary stents for recurrent cholecystitis fail due to large gallstones: rescue with laser lithotripsy via cholecystoduodenal fistula

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Surgical candidates with acute cholecystitis and symptomatic cholelithiasis have conventionally been managed with cholecystectomy. Alternative interventions for nonoperative candidates include percutaneous gallbladder drainage or endoscopic decompression through ERCP and cystic duct stents.[1,2] Percutaneous drains have inherent limitations and drain-related issues: pain, bleeding, obstruction, leaking, and dislodgement. Furthermore, they may fail to achieve definitive decompression, especially in cases of large-volume cholelithiasis. ERCP with cystic duct stent placement can provide effective gallbladder decompression as well; however, neither modality addresses the burden of stone disease. An evolving role exists for EUS-guided gallbladder drainage (EUS-GBD) using lumen-apposing metal stents (LAMSs) for definitive treatment of cholecystitis and to facilitate endotherapy of the stone burden.[3-5]

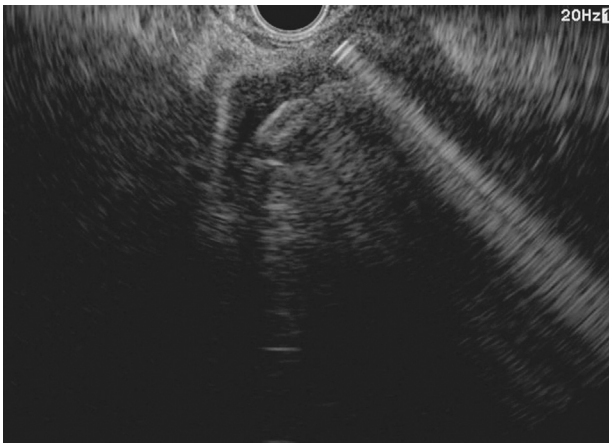

Figure 1. EUS image of a large volume of cholelithiasis occluding the gallbladder lumen.

CASE PRESENTATION AND ENDOSCOPIC METHODS

A 74-year-old woman with cholelithiasis causing recurrent cholecystitis and hepatic abscesses refractory to cystic duct stent placement and percutaneous gallbladder drainage presented for consideration of EUS-GBD. She had significant medical comorbidities that precluded surgical candidacy for elective cholecystectomy. After percutaneous drain placement by interventional radiology, she had unremitting drain-related pain and multiple bouts of drain dislodgement. She subsequently underwent ERCP for endoscopic transpapillary gallbladder drainage, including biliary sphincterotomy and placement of a 7F × 15-cm plastic double-pigtail stent. However, despite indwelling percutaneous and transcystic duct stent placement, she experienced recurrent bouts of cholecystitis, which prompted referral for EUS-GBD.

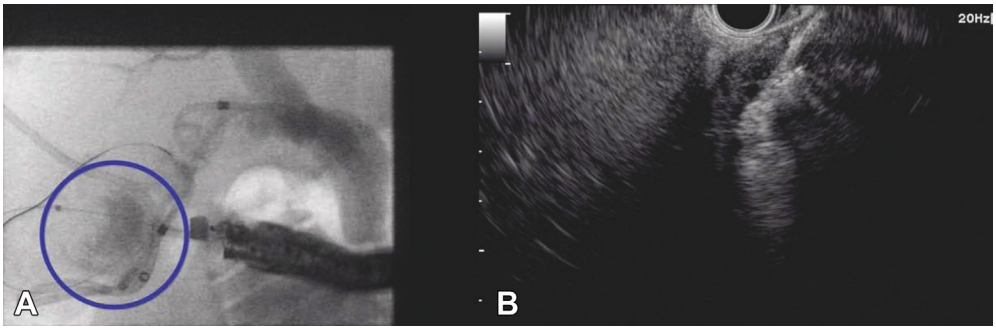

Figure 2. (A) Fluoroscopic (*circled*) and **(B)** EUS images of a difficult deployment of lumen-apposing metal stent to create the cholecystoduodenostomy in light of the substantial stone burden that compressed the gallbladder flange.

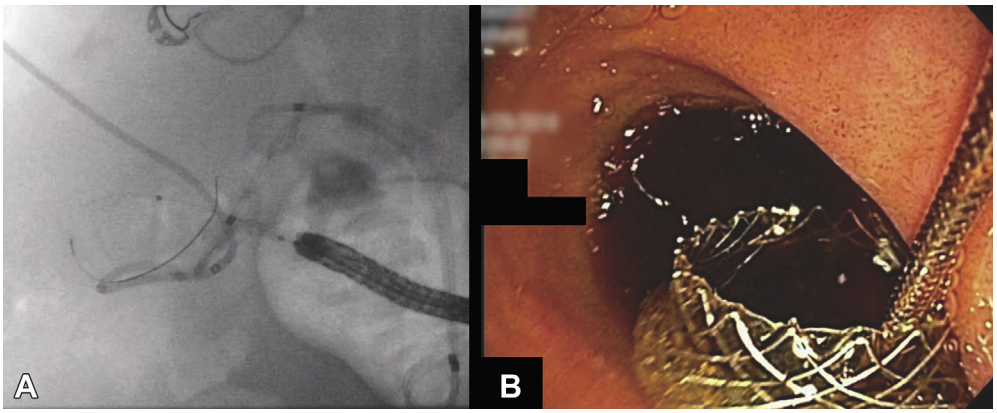

Figure 3. (A) Fluoroscopic and **(B)** endoscopic images of successful 15-mm × 10-mm cautery-enhanced lumen-apposing metal stent deployment.

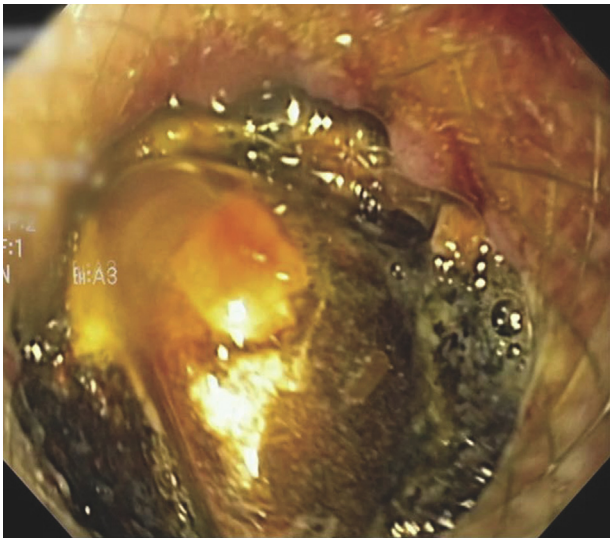

Figure 4. Endoscopic view of the occluding stone within the body of the gallbladder.

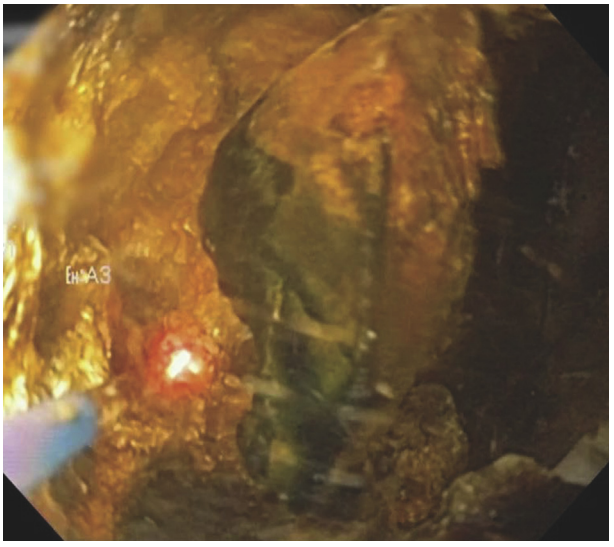

Figure 5. Successful fragmentation of the stone by using laser lithotripsy.

Examination with EUS confirmed a large occluding stone within the body of the gallbladder measuring 6 cm in size with a very narrow area of lumen available for stent deployment (Fig. 1; and Video 1, available online at www.VideoGIE.org). An EUS-guided, cholecystoduodenal fistula was created using a 15-mm cautery-enhanced LAMS for gallbladder decompression, which was challenging owing to the entire gallbladder lumen being filled with stones (Fig. 2A and B; Fig. 3A and B). The stone could not be fractured with electrohydraulic lithotripsy owing to its density and size (Fig. 4). The stone was subsequently obliterated over 2 endoscopic treatment sessions by using laser lithotripsy (Figs. 5 and 6). The gallbladder was successfully emptied of all stone debris (Figs. 7 and 8), permitting removal of the percutaneous drain and transpapillary stents. The transmural LAMS was left in place indefinitely. In >2-year follow-up, the patient remained without recurrent cholecystitis.

Despite complete occlusion of the gallbladder lumen by large symptomatic cholelithiasis, a LAMS can be carefully deployed. Cholecystoscopy and gallstone laser lithotripsy are feasible when electrohydraulic lithotripsy fails, and they offer a safe and efficacious treatment option for patients who fail conventional therapy for cholecystitis.

DISCLOSURE

All authors disclosed no financial relationships.

Abbreviations: GBD, gallbladder drainage; LAMS, lumen-apposing metal stent.

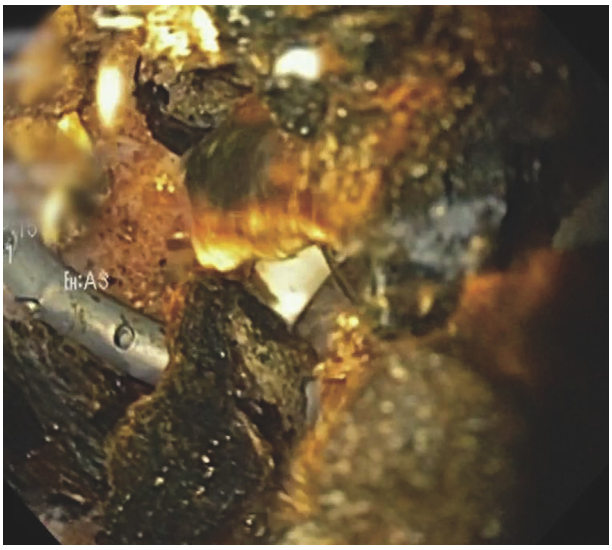

Figure 6. After stone fragmentation, the previously placed drains (percutaneous interventional radiology drain and the transpapillary pigtail stent) were visible within the gallbladder lumen.

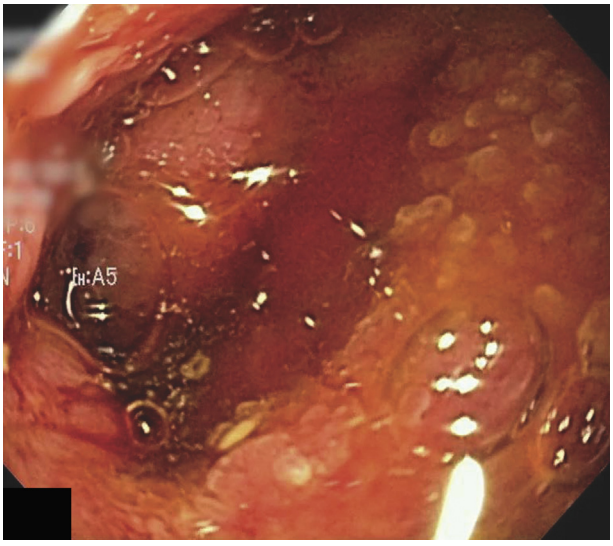

Figure 7. Cholecystoscopy was performed after drain removal to confirm clearance of the gallbladder lumen.

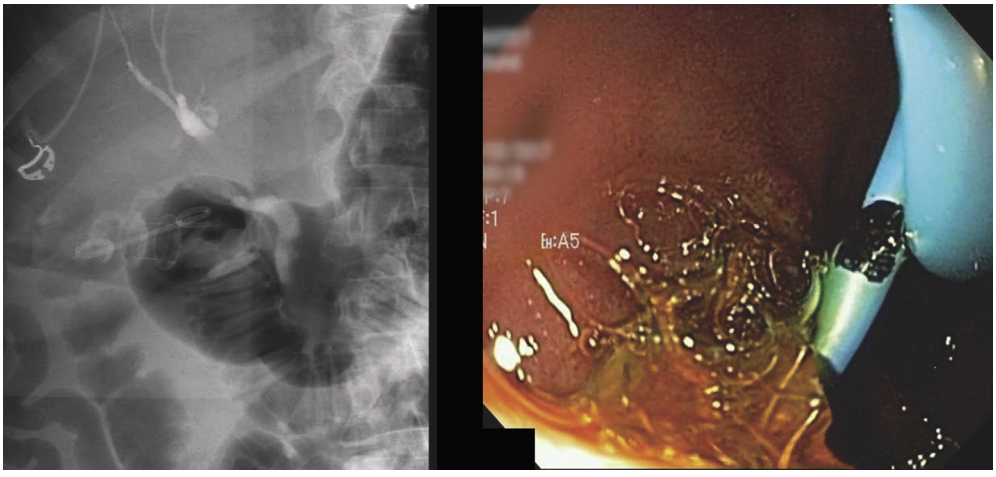

Figure 8. The transduodenal lumen-apposing metal stent plus 7F × 3-cm double-pigtail stents were left indefinitely without any recurrent cholecystitis in >3 years of follow-up.

REFERENCES

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