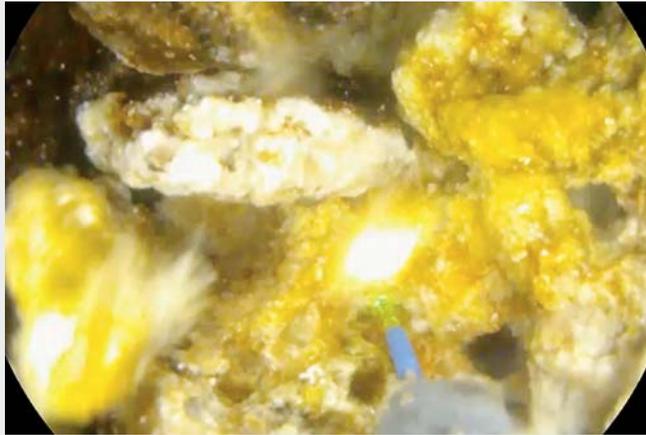


Elective endoscopic gallbladder treatment in patient with recurrent gallbladder colic and high surgical risk



▶ **Video 1** Endoscopic view of holmium laser lithotripsy of the central part of one of the stones inside the gallbladder.

An 80-year-old woman presented with a 1-year history of recurrent right upper quadrant colicky pain. Her medical history included abdominal surgery, ischemic stroke with impaired mobility, and obesity (body mass index >30.1 kg/cm²).

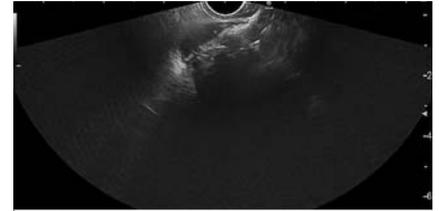
Transabdominal ultrasound showed distended gallbladder with thickened walls and two large stones (4 cm and 3 cm). Endoscopic ultrasound-guided gallbladder drainage (EUS-GBD) followed by intra-cholecystic lithotripsy was offered as a minimally invasive treatment alternative to surgery and scheduled for 2 weeks later.

EUS examination confirmed gallbladder wall thickening and two large stones (▶ **Video 1**). Transduodenal EUS-GBD using a 15×10 mm AXIOS stent (Boston Scientific, Marlborough, Massachusetts, USA) mounted onto a cautery device was successfully performed (▶ **Fig. 1**).

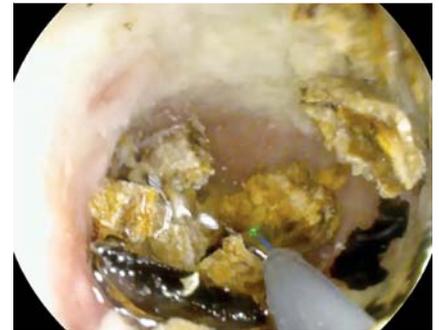
After 48 hours, the central stent was dilated up to 15 mm and the gallbladder lumen accessed with a gastroscope. After adequate water irrigation, holmium laser lithotripsy with variable pulse power and frequencies was performed [1], and fragmented stones were flushed out or removed using a Dormia basket or Roth net until complete gallbladder clearance was achieved (▶ **Fig. 2**). No adverse events occurred and the patient was discharged.

Outpatient cholecystoscopy 2 weeks later revealed complete gallbladder clearance. The stent was removed using a grasping forceps (▶ **Fig. 3**) and exchanged for two double-pigtail stents (7Fr, 4cm), which were left in place (▶ **Fig. 4**).

Elective endoscopic gallbladder treatment has been described previously in five relatively young patients with a mean age of 50 years and giant gall-



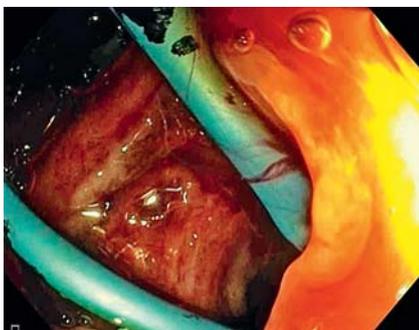
▶ **Fig. 1** Endoscopic ultrasound view of the distal flange of the AXIOS stent (Boston Scientific, Marlborough, Massachusetts, USA) opened inside the gallbladder after pushing one of the stones forward.



▶ **Fig. 2** Endoscopic view of holmium laser lithotripsy of the stone fragments inside the gallbladder.



▶ **Fig. 3** Endoscopic view of the gastric side of the fistulous tract after removal of the AXIOS stent (Boston Scientific, Marlborough, Massachusetts, USA).



► **Fig. 4** Endoscopic view of the two double-pigtail stents placed from the stomach into the gallbladder through the fistulous tract.

stones, who rejected surgery and desired gallbladder preservation [2]. With an aging population, the number of elderly frail individuals at high surgical risk and gallstone disease requiring surgical intervention is expected to increase [3], and elective endoscopic gallbladder treatment may be a valid alternative treatment option in such patients.

Endoscopy_UCTN_Code_TTT_1AS_2AD

Competing interests

Dr. Larghi is a consultant for Boston Scientific Corp. and Pentax Medical. He has also received research support from Medtronic. All other authors declare that they have no conflict of interest.

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