VIDEO CASE REPORT

Endoscopic approach for management of dropped gallstones using percutaneous cholangioscopy

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Dropped gallstones (DGS) are unable to be retrieved in 2% of cholecystectomy cases.[1] While mostly asymptomatic, adverse events such as abscess formation have been described.[2] Data on management are limited and most abscess cases in the literature required open laparotomy and surgical exploration.[2]

A 73-year-old man, with a history of laparoscopic cholecystectomy 19 months prior for gallstones pancreatitis,

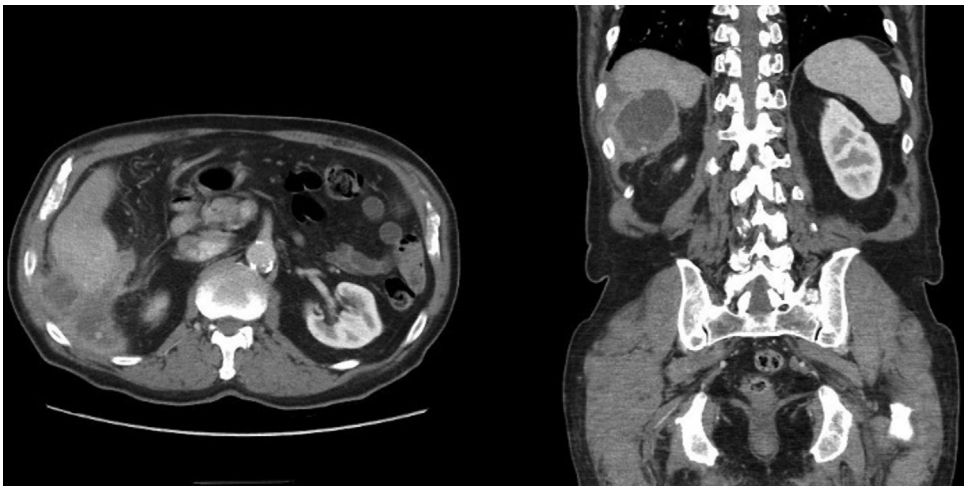

Figure 1. CT scan of abdomen pelvis with intravenous (IV) contrast showed moderate volume encapsulated fluid collection overlying the lateral and posterior right hepatic lobe measuring 5.4 × 12.2 × 7.2 cm with a thin extension tracking anteromedial to the gallbladder fossa and contiguous with the cystic duct remnant. There was one and possibly a few hyperdense foci in the dependent portion of the fluid collection measuring up to 7 mm.

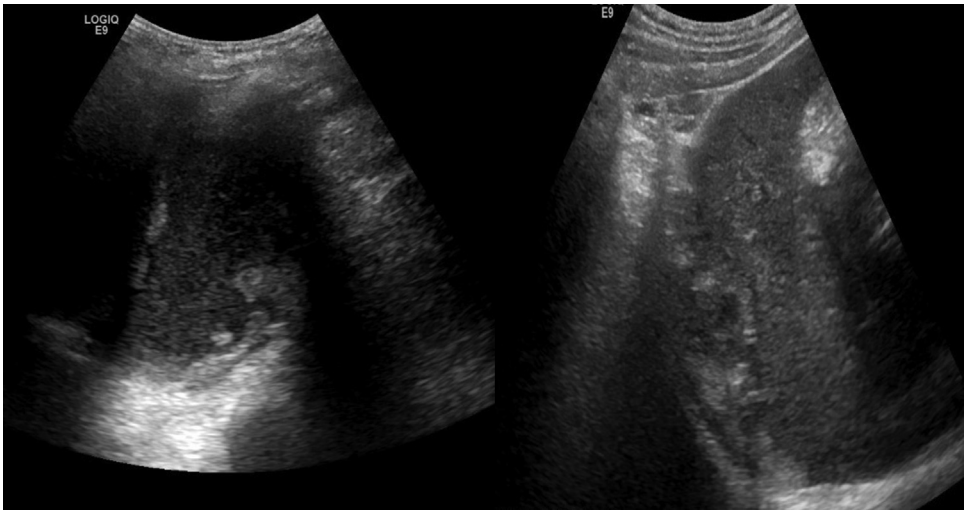

Figure 2. Ultrasound-guided placement of a 10F catheter into the fluid collection. A 7-mm echogenic lesion in the dependent aspect of the collection was visualized suspicious for a dropped gallstone.

Figure 3. The cholangioscope was guided over the wire, through a mature tract, all the way up to the cavity under fluoroscopy guidance. Systematic stone extraction was performed using a miniature basket through the cholangioscope.

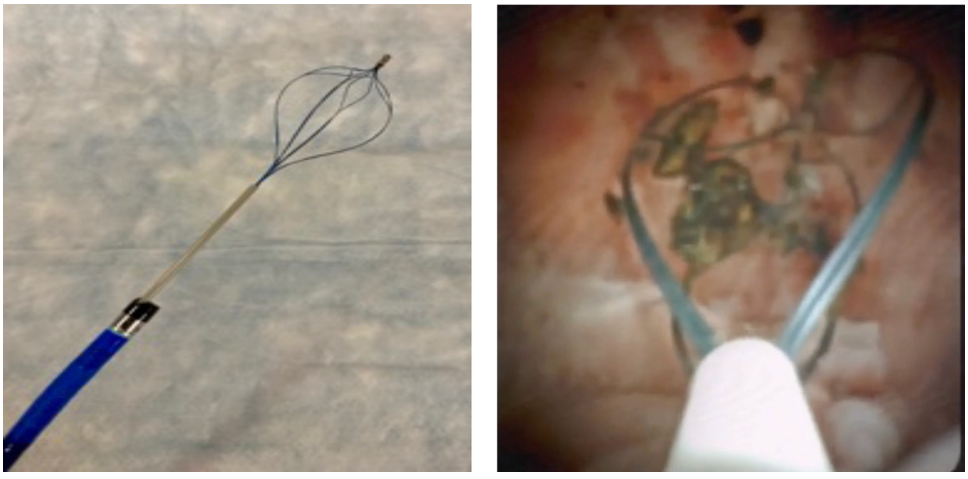

Figure 4. Illustration of the miniature basket through the cholangioscope both ex vivo and during the procedure. This accessory consists of a flexible sheath with a braided self-expanding basket at the distal end with a handle located at the proximal end of the instrument designed to open, close, and rotate the basket.

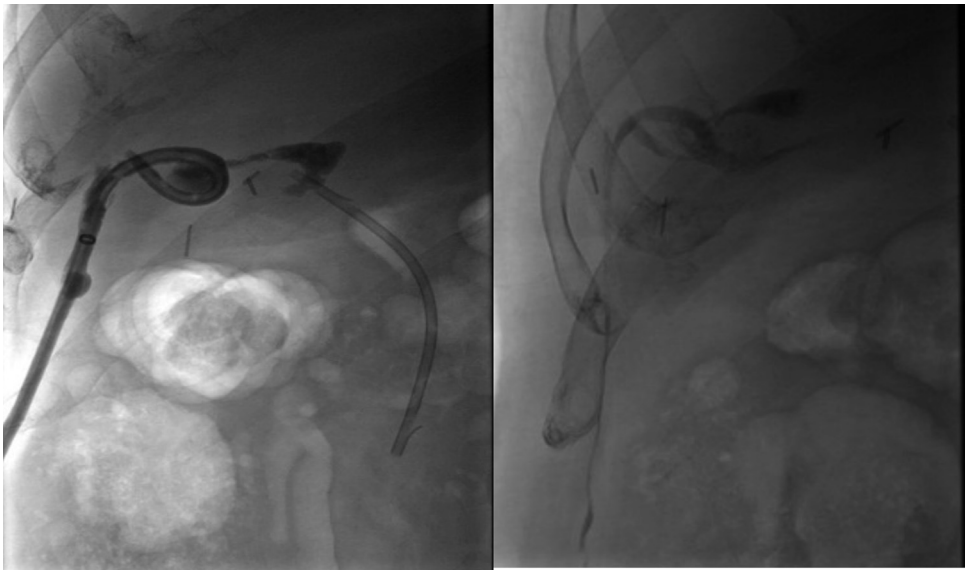

Figure 5. Diagnostic sinogram demonstrated a collapsed cavity around the drain without evidence of residual stone. The drain was cut and removed in its entirety.

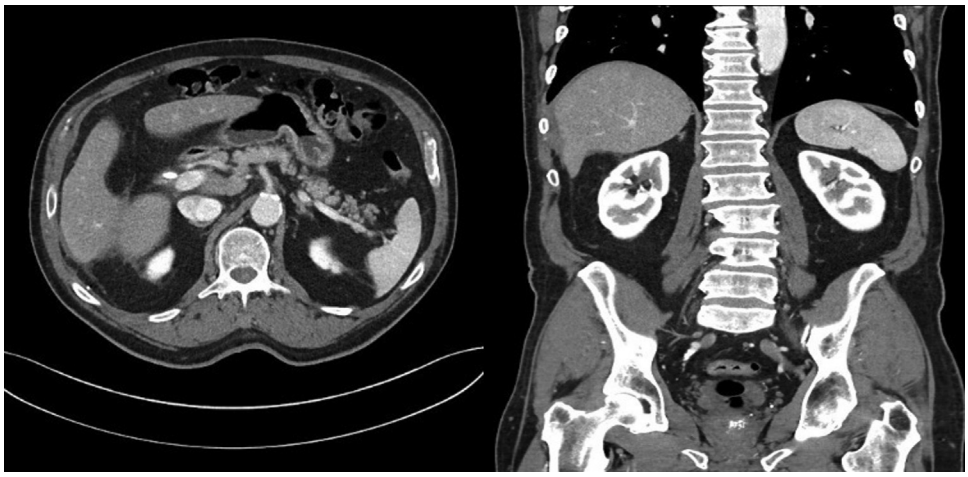

Figure 6. CT scan of abdomen pelvis with IV contrast showed residual small fluid collection along the posterior lateral aspect of the right hepatic lobe without stones or signs of infection.

presented with loss of appetite, early satiety, and right upper quadrant discomfort. An abdominal CT scan showed a perihepatic fluid collection extending to the gallbladder fossa, communicating with the cystic duct remnant suspicious for a biloma because of a chronic bile leak (Fig. 1).

Surgical intervention was deferred, and percutaneous drainage was recommended. Although the initial CT scan just reported an abscess, during an ultrasound percutaneous drainage, DGS were identified, which were retrospectively visible on the CT scan (Figs. 1 and 2). These were not visible fluoroscopically on a subsequent sinogram, making percutaneous image-guided stone removal extremely difficult.

After a multidisciplinary discussion, the decision was made for attempted endoscopic stone removal. ERCP was first performed, and although a cystic duct leak was not demonstrated, empiric biliary sphincterotomy and plastic biliary stenting was performed. With the assistance of interventional radiology, the percutaneous tube was removed and the tract was dilated (Video 1, available online at www.giejournal.org). A 10F disposable cholangioscope was introduced through the tract into the cavity with visualization of a few stones measuring at least 3 mm (Fig. 3). Stone extraction was performed using a miniature basket through the cholangioscope, removing the stones with the scope through the percutaneous tract (Fig. 4). This maneuver was repeated until all stones were retrieved. Some of the stones fragmented upon retrieval, and copious saline lavage was performed. A percutaneous drain was replaced.

A sinogram 1 week later demonstrated a collapsed cavity without evidence of residual DGS, and the drain was removed (Fig. 5). The biliary stent was removed. On follow-up, the patient remained asymptomatic, and a CT scan 3 months later demonstrated resolution of the cavity and no further DGS (Fig. 6).

The diagnosis of DGS is frequently delayed because of the unusual presentation and nondiagnostic imaging.[3] Some authors recommend surgery to ensure complete evacuation and prevent recurrence. Percutaneous drainage of the abscess may also be considered as a less invasive measure or in nonsurgical candidates. Few cases of percutaneous stone removal performed with a dilator system and retrieval basket via a conventional sheath or nephroscope have been reported.[4,5] This approach may be possible in patients with larger stones requiring lithotripsy fragmentation prior to removal.[6]

This case illustrates an innovative, minimally invasive multidisciplinary approach to successfully remove DGS. Recent advances in endoscopic devices and accessories have made it easier for endoscopists to use percutaneous approaches for endoscopic therapy, including percutaneous stone removal.

DISCLOSURE

The authors disclosed no financial relationships.

Abbreviations: DGS, dropped gallstones; PD, percutaneous drainage.

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https://doi.org/10.1016/j.vgie.2022.10.005

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