

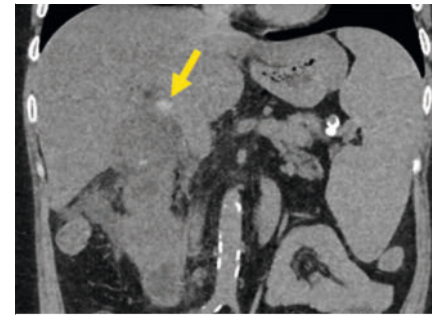
Simple endoscopic transpapillary gallbladder aspiration/irrigation using a double-pigtail plastic stent system ▶

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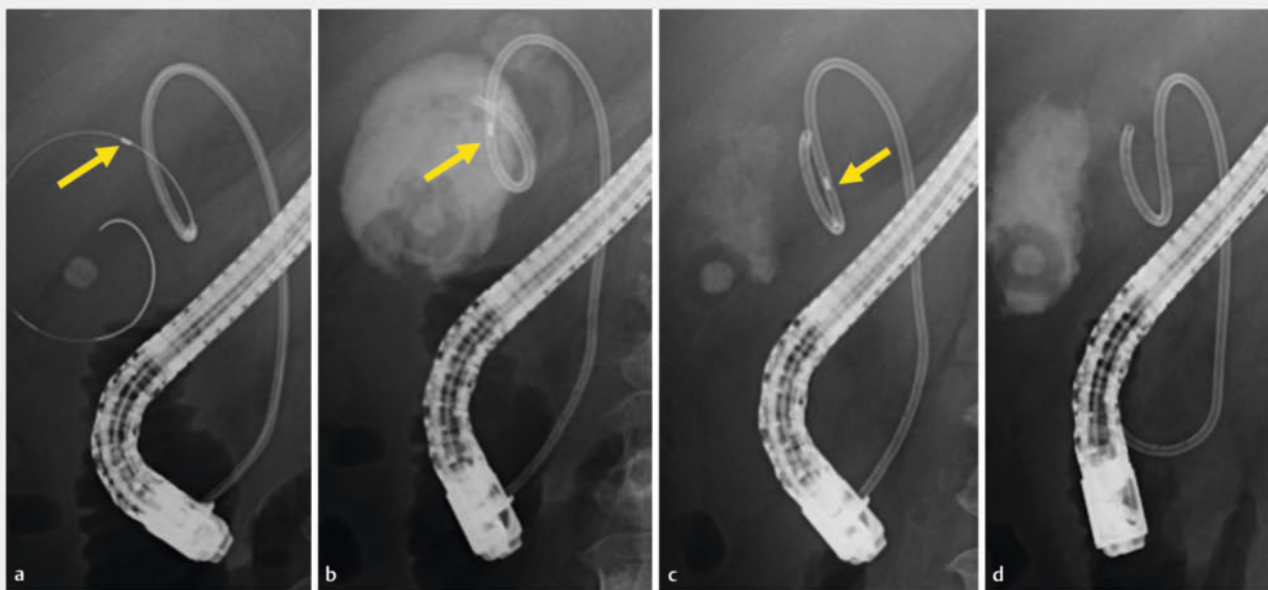
Endoscopic transpapillary gallbladder drainage (ET-GBD) using a double-pigtail plastic stent (DPPS) is an alternative intervention for patients with operable acute cholecystitis (AC) [1]. ET-GBD with nasobiliary drainage (NB) tube placement enables gallbladder aspiration/irrigation [1]. However, NB tubes can cause patient discomfort, become dislodged, and have short-term acceptability [1]. The clinical success rate of ET-GBD is unfavorable compared to that of percutaneous and endoscopic ultrasound-guided gallbladder drainage (EUS-GBD) [1, 2, 3]. However, what if effective aspiration/irrigation were possible during plastic stent deployment?

This study demonstrates simple gallbladder aspiration and irrigation during ET-GBD.

A 51-year-old woman with severe AC underwent an ET-GBD (▶ **Fig. 1**). Balloon-occluded cholangiography demonstrated disruption of the cystic duct, which was compressed by edema. After standard cannula advancement over a 0.025-inch guidewire, viscous bile was never aspirated, even after guidewire withdrawal due to the small single hole on the cannula. We advanced the stent system, which consisted of a DPPS over the inner sheath (Advanix J, 7F, 10 cm; Boston Scientific, Marlborough, Massachusetts, United States) (▶ **Fig. 2a**). Next, the inner



▶ **Fig. 1** Abdominal computed tomography on coronal section. An enlarged gallbladder with increased bile density caused by cystic duct impaction with a calcified stone was suspected. The solid red arrow indicates the impacted stone.



▶ **Fig. 2** One-step gallbladder aspiration/irrigation in the process of endoscopic transpapillary gallbladder drainage. **a** A double-pigtail plastic stent (DPPS) system is advanced over the guidewire into the gallbladder. The solid yellow arrow indicates the radiopaque marker at the top of the inner sheath. **b** After guidewire removal, the inner sheath was retracted into DPPS. The gallbladder was then rinsed in this position with 20 mL of contrast-containing saline after the aspiration of 40 mL of infectious bile. The solid yellow arrow indicates the radiopaque marker at the top of the inner sheath. **c** The irrigation saline was aspirated quickly. The solid yellow arrow indicates the radiopaque marker at the top of the inner sheath. **d** Finally, DPPS deployment was achieved after inner sheath removal.

VIDEO



▶ **Video 1** Simple endoscopic transpapillary gallbladder aspiration/irrigation using a double-pig-tailed plastic stent system

sheath was retracted into the DPPS after guidewire removal. We then aspirated 40 mL of gallbladder contents using this stent system halfway through stent deployment. Subsequently, we irrigated and aspirated the gallbladder three times with 20 mL of contrast-containing saline (▶ **Fig. 2b**, ▶ **Fig. 2c**). Finally, the inner sheath was completely withdrawn for the DPPS deployment (▶ **Fig. 2d**). This inner sheath retraction maneuver into the DPPS allowed one-step gallbladder aspiration/irrigation during DPPS deployment (▶ **Video 1**). In addition, multiple side holes on the large-caliber DPPS facilitated replacement of viscous bile with saline, which might have improved the clinical success of ET-GBD. Moreover, these tips can be utilized during EUS-GBD using a DPPS, where a lumen-apposing metal stent (LAMS) is unavailable, although LAMS is recommended for EUS-GBD [4].

Conflict of Interest

The authors declare that they have no conflict of interest.

The authors

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