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A novel technique of endoscopic introducer-assisted transpapillary gallbladder aspiration prior to drainage in a patient with acute cholecystitis

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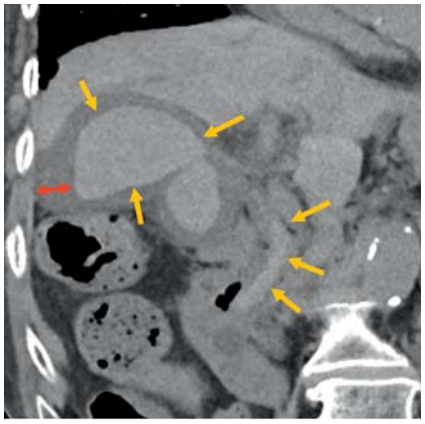
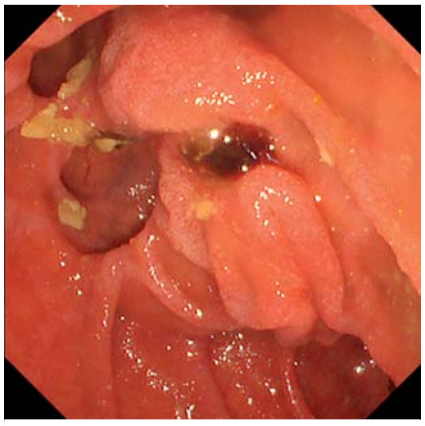
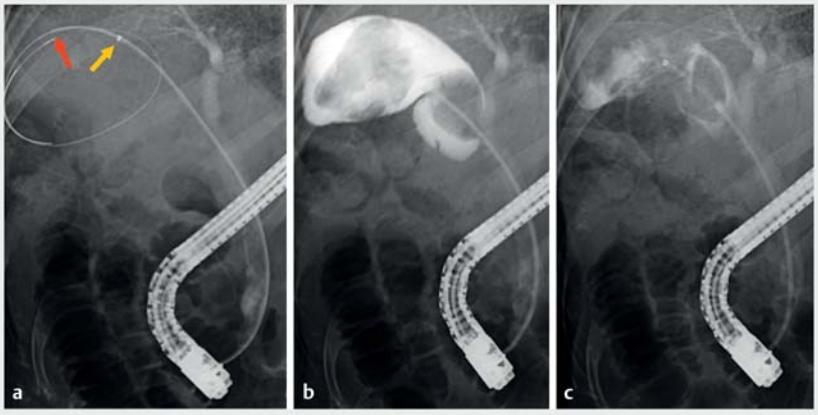


▶ **Fig. 1** Abdominal computed tomography (CT), coronal section. CT revealed a swollen gallbladder with an edematous wall and peripheral effusion (red double-headed arrow) containing a high-density structure suggestive of blood clots. The clots had flooded the common bile duct (yellow arrows).



▶ **Fig. 2** Endoscopic view of the papilla of Vater before biliary cannulation, demonstrating the clots impacted in the papilla.



▶ **Fig. 3** Gallbladder aspiration and saline/contrast medium irrigation through the outer sheath of the endoscopic introducer. **a** An endoscopic introducer (EndoSheather) is advanced over the guidewire into the gallbladder. The red arrow indicates the tip of the inner sheath and the yellow arrow the radiopaque tip of the outer sheath. **b** Through the outer sheath, saline/contrast medium liquid is injected following aspiration of the gallbladder contents (80 ml) using a 50-ml syringe. Massive clots emerge in the gallbladder. **c** Gallbladder aspiration through the outer sheath is quickly performed.

Endoscopic transpapillary gallbladder drainage (ET-GBD) is the preferred technique in patients with acute cholecystitis and cholangitis [1]. Meta-analyses have reported technical and clinical success rates of 83 % and 88.1 % respectively [1, 2]. Aspiration of the infected bile and saline irrigation using nasobiliary drainage is an acceptable method [1]; however, the performance of this maneuver during ET-GBD is time-consuming because of the high viscosity of the bile and the small caliber of the conventional endoscopic retrograde cholangiopancreatography catheter. Endoscopic introducer-assisted procedures have recently emerged as effective pancreaticobiliary interventions [3, 4]. This article describes gallbladder aspiration and irrigation using a novel dual-structure catheter.

An 83-year-old woman was referred to our department with suspected moderate acute hemorrhagic cholecystitis and cholangitis (▶ **Fig. 1**). ET-GBD was performed, followed by biliary clot removal (▶ **Video 1**). With the swollen Vater's papilla (major duodenal papilla) impacted by blood clots, we assumed the presence of acute hemorrhagic cholecystitis (▶ **Fig. 2**). Following biliary cystic duct cannulation using a traditional cannula with a guidewire, we exchanged the cannula for an endoscopic introducer (EndoSheather; Piolax, Yokohama, Japan). After removal of the inner sheath of this device, gallbladder aspiration and saline/contrast medium irrigation using a 50-ml syringe were quickly performed through the outer sheath (▶ **Fig. 3**). ET-GBD was then performed without complications.

The endoscopic introducer is composed of an inner sheath with a tapered tip, and an outer sheath (▶ **Video 1**). The internal and external diameters of the outer sheath are 6.2 Fr and 7.2 Fr, respectively [3]. Therefore, the outer sheath can easily advance into the gallbladder without obstruction in the cystic duct. In addition, the large caliber of the outer sheath facilitates quick aspiration and/or irrigation of the gallbladder in appropriate cases.

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Video 1 A novel technique of endoscopic introducer-assisted transpapillary gallbladder aspiration prior to drainage in a patient with acute cholecystitis.

Competing interests

The authors declare that they have no conflict of interest.

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