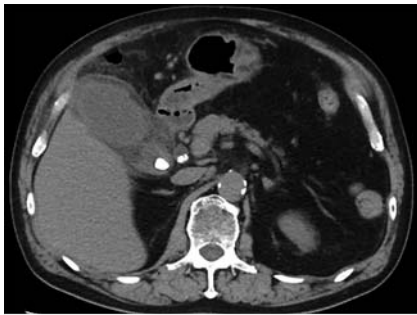


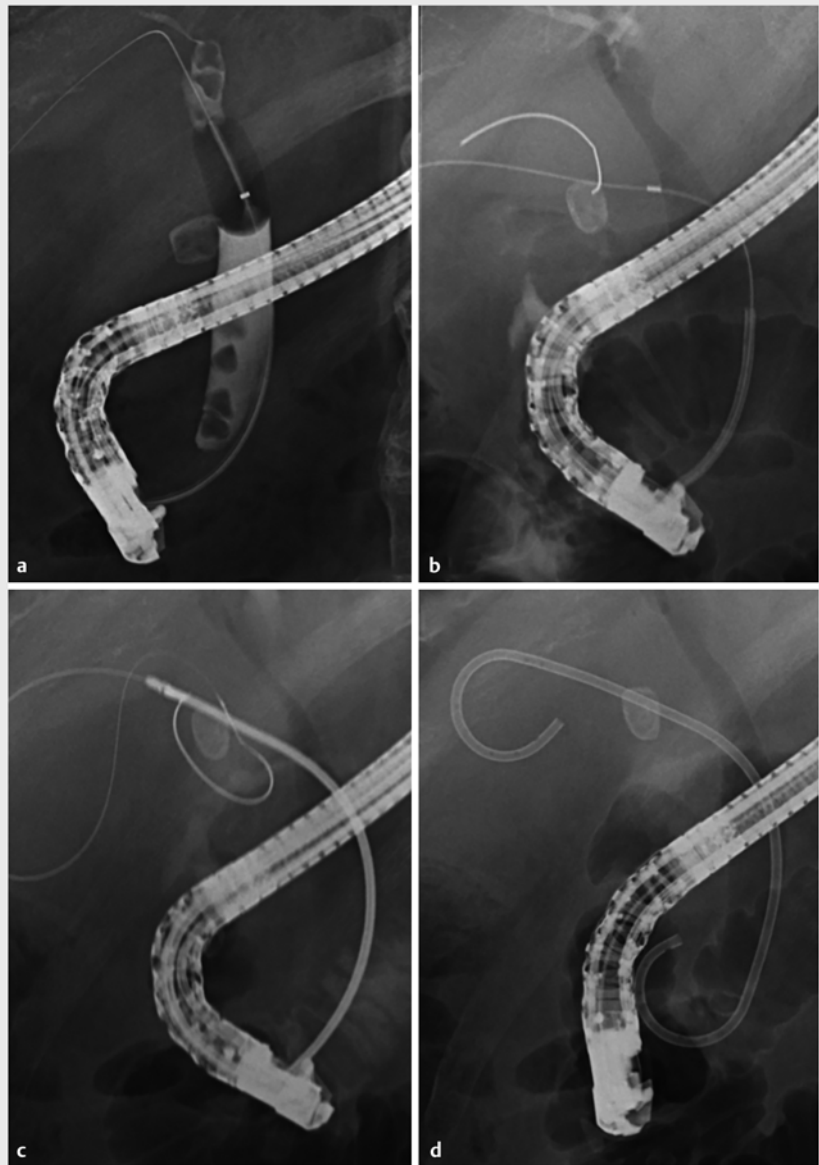
## Cystic duct recanalization with a screw tip stent retriever aids plastic stent delivery in endoscopic transpapillary gallbladder drainage

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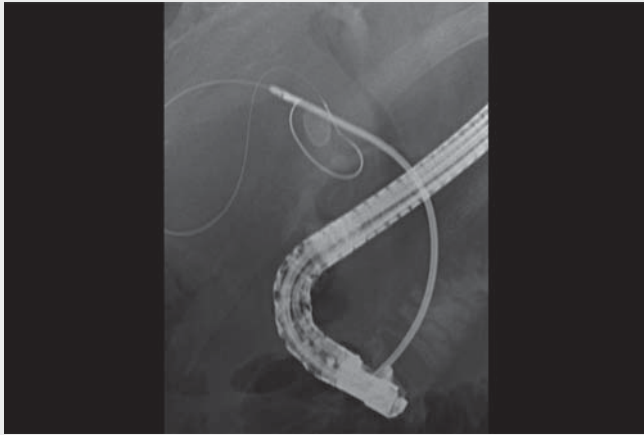


► **Fig. 1** Abdominal computed tomography in a 77-year-old man revealed acute cholecystitis with cholelithiasis and choledocholithiasis.

There are three nonsurgical gallbladder drainage methods available to treat patients with acute cholecystitis: percutaneous cholecystostomy, endoscopic transpapillary gallbladder drainage (ET-GBD), and endoscopic ultrasonography-guided drainage. ET-GBD is preferred in cases complicated by cholangitis/choledocholithiasis [1]. However, ET-GBD is technically challenging owing to the need to find the orifice of the cystic duct and to insert devices through a cystic duct that is long, narrow, tortuous, and inflamed by stone impaction [1]. This article presents a case in which the Soehendra stent retriever facilitated delivery of a plastic stent during ET-GBD. A 77-year-old man with a 1-week history of continuous right upper quadrant pain and signs of systemic inflammation and mild liver abnormality was referred to our department. Computed tomography revealed acute cholecystitis with cholelithiasis and choledocholithiasis (► **Fig. 1**). We performed ET-GBD. Balloon-occluded proximal cholangiography revealed multiple choledocholithiasis and an obscured cystic duct (► **Fig. 2a**). We attempted placement of a double-pigtail plastic stent (Advanix, 7 Fr, 10 cm; Boston



► **Fig. 2** Cystic duct recanalization with the Soehendra stent retriever for endoscopic transpapillary gallbladder drainage. **a** Balloon-occluded proximal cholangiography reveals multiple choledocholithiasis. The obscured cystic duct indicates obstruction caused by severe cystic duct edema or noncalcareous small stone impaction. **b** A double-pigtail plastic stent is inserted. However, the inner stent sheath becomes stuck in the cystic duct. **c** The Soehendra stent retriever passes through the cystic duct, recanalizing it. **d** The double-pigtail plastic stent is successfully inserted for endoscopic transpapillary gallbladder drainage.



**▶ Video 1** Cystic duct recanalization using a Soehendra stent retriever facilitates plastic stent delivery during endoscopic transpapillary gallbladder drainage.

Scientific, Marlborough, USA). Following stone extraction with sphincterotomy, the stent was inserted into the gallbladder over the guidewire, but the inner sheath became stuck in the cystic duct (▶ **Fig. 2b**). We attempted to recanalize the cystic duct using a drilling dilator (SSR-8.5; Cook Medical, Bloomington, USA) (▶ **Fig. 2c**). This maneuver succeeded easily, and after recanalization we were able to place the stent as planned (▶ **Fig. 2d**, ▶ **Video 1**).

In most cases, acute cholecystitis develops from stone impaction in the cystic duct. Stone impaction aggravates cystic duct stenosis by causing inflammation, congestion, and edema of the spiral valves of Heister in the early phase of acute cholecystitis [2]. In our case, the gap between the guidewire and the inner stent sheath, and between the inner sheath and the stent, became stuck in the cystic duct, especially at the curve and beside the impacted stone.


The Soehendra stent retriever has previously been utilized as a stent remover [3] and blunt tissue dilator [4, 5]. As shown by the case reported here, it also facilitates recanalization of an obstructed cystic duct in ET-GBD.

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### Competing interests

The authors declare that they have no conflict of interest.

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