Article published online: 2023-01-16



# Endoscopic ultrasound-guided transgastric pyogenic liver abscess drainage using a drill dilator

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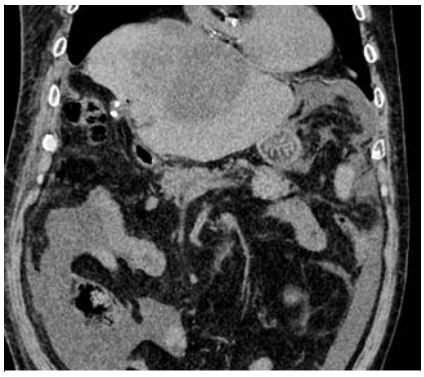
▶ **Fig. 1** Photograph of the novel drill dilator (Tornus ES; Asahi Intecc).

Percutaneous transhepatic drainage (PTD) is the gold standard treatment for pyogenic liver abscess [1], but PTD can be challenging where a pyogenic liver abscess is located at a site that is difficult to access via the percutaneous approach and in patients with severe dementia, in whom self-removal of the tube is a risk. An endoscopic ultrasound (EUS)-guided procedure offers internal drainage via a transluminal approach and may be an alternative option in such cases. Several studies have reported the clinical benefits of EUS-guided access for pyogenic liver abscesses [2–4]; however, this technique requires tract dilation prior to metal stent deployment. In patients with a pyogenic liver abscess, severe inflammation can cause the cystic wall to become thickened and hardened and this can make tract dilation challenging.

A novel drill dilator has recently become available in Japan (Tornus ES; Asahi Intecc) (▶ **Fig. 1**) [5]. This allows a tract to be easily dilated using a clockwise rotation of the device handle, without force needing to be applied. We herein describe EUS-guided transgastric pyogenic liver abscess drainage using a drill dilator. An 89-year-old man was admitted to our hospital for treatment of a pyogenic liver abscess (▶ **Fig. 2**). The percutaneous approach was difficult because the abscess was located at segment 4 and the caudate lobe, with intervening vessels, and EUS-guided access was therefore selected. The abscess was punctured from the stomach using a 19G needle and contrast medium was injected. Balloon catheter insertion was attempted after deployment of a 0.025-inch guidewire (▶ **Fig. 3a**); however, the procedure



▶ **Fig. 2** Computed tomography scan showing a pyogenic liver abscess at segment 4 and the caudate lobe.

failed because the wall of the abscess was extremely hard. We then attempted drill dilator insertion and easily achieved successful tract dilation (▶ **Fig. 3b**). Finally, a partially covered self-expandable metal stent was deployed from the pyogenic liver abscess to the stomach, with no adverse events (▶ **Fig. 3c**; ▶ **Video 1**).

In conclusion, a drill dilator appears to be useful for pyogenic liver abscess drainage, as well as for bile duct dilation.

Endoscopy_UCTN_Code_TTT_1AS_2AD

## Competing interests

The authors declare that they have no conflict of interest.

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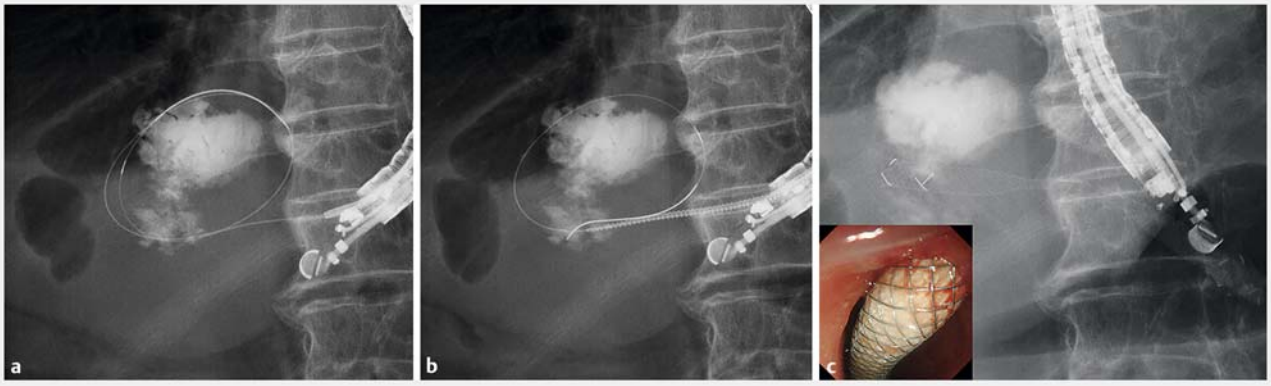
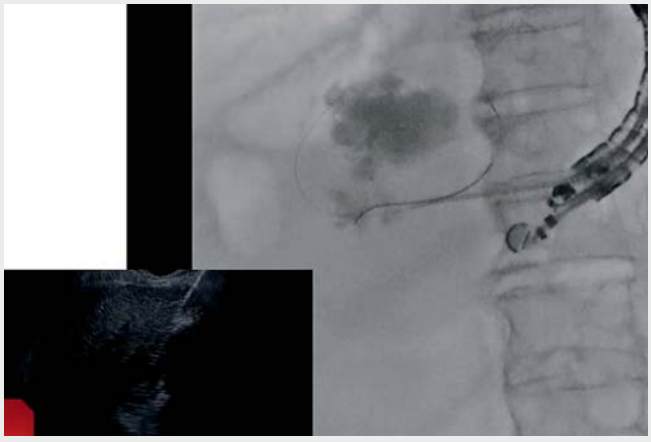



▶ **Fig. 3** Fluoroscopic images showing: **a** a 0.025-inch guidewire deployed after puncture of the pyogenic liver abscess with a 19G needle; **b** the drill dilator being easily inserted under endoscopic ultrasound guidance; **c** transgastric drainage of the abscess with a self-expandable metal stent (inset, endoscopic view).



**Video 1** Endoscopic ultrasound-guided drainage of a pyogenic liver abscess using a novel drill dilator.

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Endoscopy 2023; 55: E342–E343
**DOI** 10.1055/a-1990-0798
**ISSN** 0013-726X

Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany