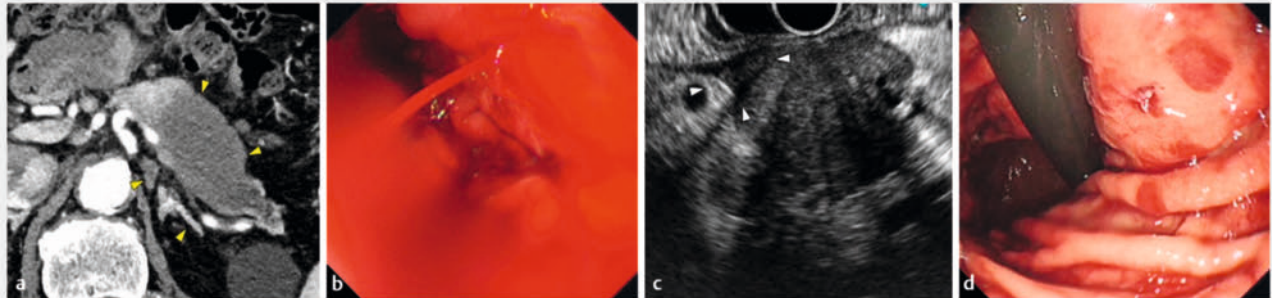
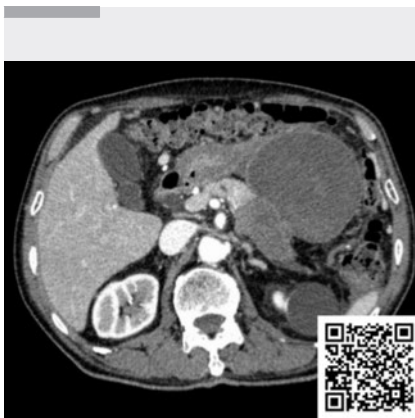


The case of infected intra-abdominal hematoma complicating endoscopic ultrasound-guided tissue acquisition

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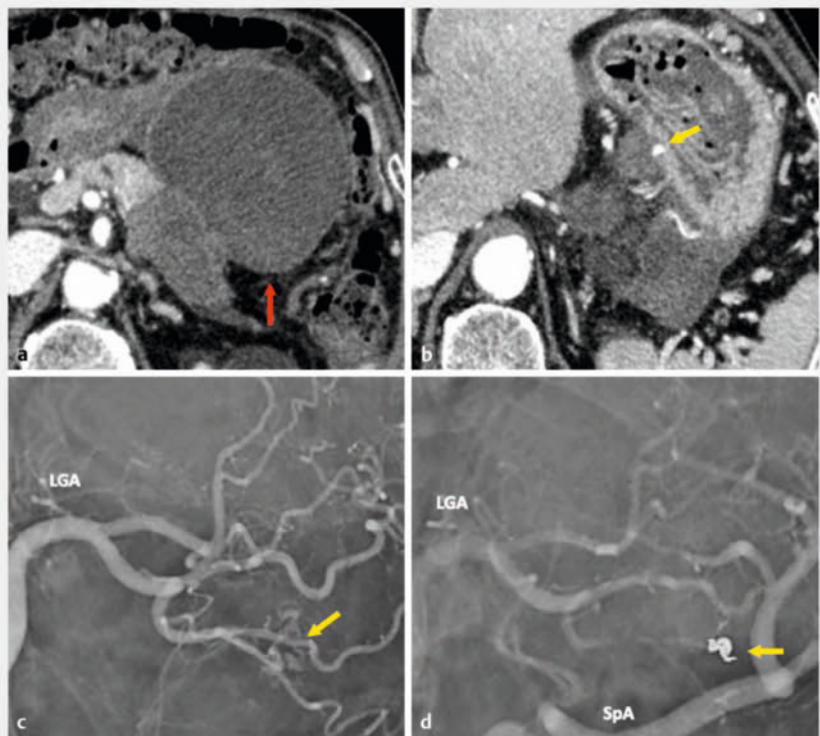
► **Fig. 1** Bleeding and hemostasis during endoscopic ultrasound-guided tissue acquisition (EUS-TA). **a** 52 × 31-mm mass was observed in the pancreatic tail (yellow arrowheads). **b** Bleeding into the stomach was observed after EUS-TA. **c** A small amount of fluid around the tumor (white arrowheads). **d** Hemostasis confirmed after scope balloon compression (white arrows).



► **Video 1** An infected intra-abdominal hematoma complicating endoscopic ultrasound-guided tissue acquisition.

Endoscopic ultrasound-guided tissue acquisition (EUS-TA) rarely causes complications. Severe bleeding requiring blood transfusion or hemostasis has occurred only in 0.05–0.2% of cases [1–3]. Herein we report, to the best of our knowledge, the first case of EUS-TA complicated by an infected intra-abdominal hematoma (► **Video 1**).

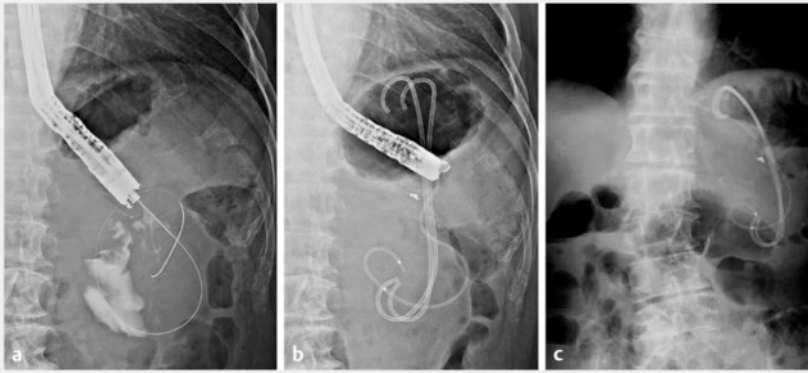
An 81-year-old man presented with a pancreatic tail tumor on contrast-enhanced computed tomography (CECT) (► **Fig. 1 a**). EUS-TA was performed using a 22-gauge Franseen needle (Sonotip TopGain; Medi-Globe, Rohrdorf, Germany). After puncture, little fluid accumu-



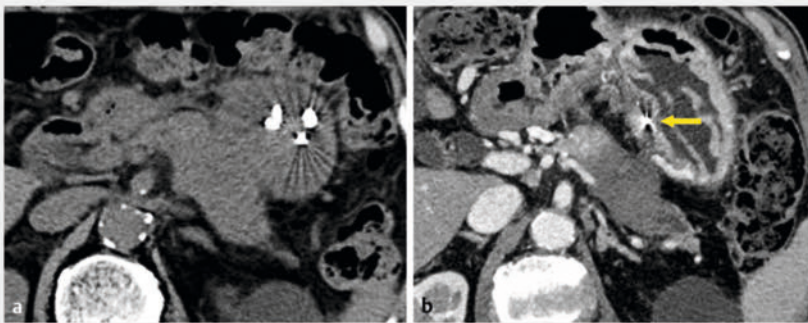
► **Fig. 2** Contrast-enhanced computed tomography (CECT) image of hematoma and emergency transcatheter arterial embolization (TAE) image. **a** CECT showing a hematoma 80 mm in diameter (red arrow). **b** Pseudoaneurysm in the left gastric artery branch (yellow arrow). **c, d** TAE was performed targeting the pseudoaneurysm (yellow arrow).

lated around the tumor, and bleeding into the stomach was observed (► **Fig. 1 b, c**). Scope balloon compression was performed, and hemostasis was achieved (► **Fig. 1 d**). The following day, gastro-

intestinal endoscopy was performed to confirm that hemostasis was maintained, and the patient was discharged. Five days after EUS-TA, the patient was rehospitalized because of fever and abdominal



► **Fig. 3** Endoscopic ultrasound-guided cyst drainage was performed for an infected hematoma with insertion of two plastic stents and a nasal drainage catheter.



► **Fig. 4** CECT images of the hematoma after cyst drainage. **a** CT scan on the day after the cyst drainage showing shrinkage of the hematoma. **b** CECT two months later showing complete disappearance of the hematoma. Yellow arrows indicate the coil embolization area.

pain. Computed tomography (CT) revealed an intra-abdominal hematoma (► **Fig. 2a**) and a pseudoaneurysm in a branch of the left gastric artery (► **Fig. 2b**). Antibiotic treatment was initiated, followed by transcatheter arterial embolization (► **Fig. 2c, d**). The symptoms improved; however, C-reactive protein level elevated to 17.7 mg/dL 12 days after EUS-TA. Therefore, EUS-guided cyst drainage was performed and two plastic stents and a nasal drainage catheter were inserted (► **Fig. 3**). Hematoma cultures revealed an *Enterococcus faecalis* infection. CT performed on the day after the cyst drainage showed hematoma shrinkage (► **Fig. 4a**).

The pancreatic tumor was diagnosed as an adenocarcinoma and neoadjuvant chemotherapy was initiated 12 days after EUS-guided cyst drainage. Two months later, CT confirmed the disappearance of the hematoma (► **Fig. 4b**). Three months

later, a pancreatic tail resection was performed. Although slight adhesions were observed, surgery was completed without complications. The patient is recurrence-free for one year postoperatively. A retrospective review of the EUS-TA video identified a small vascular structure within the puncture pathway. Even vessels of small diameter are susceptible to hemorrhage; therefore, the puncture pathway should be carefully observed.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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