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Hemorrhage into the bile duct after endoscopic ultrasound-guided fine needle aspiration for pancreatic cancer

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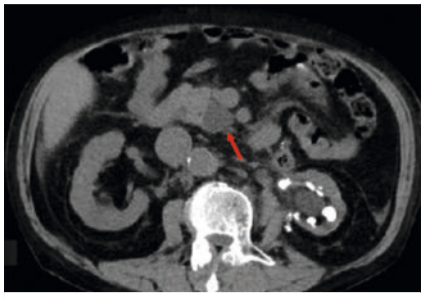
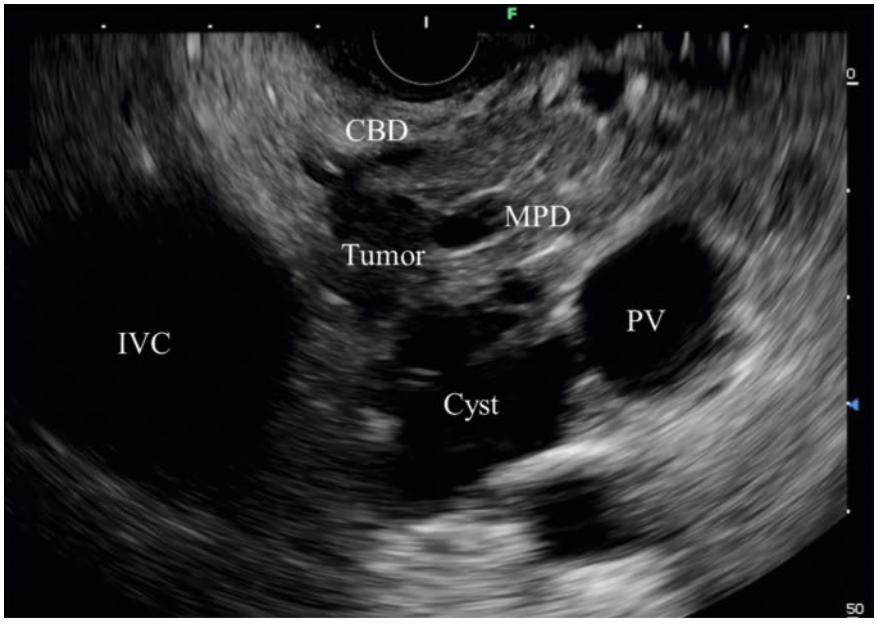
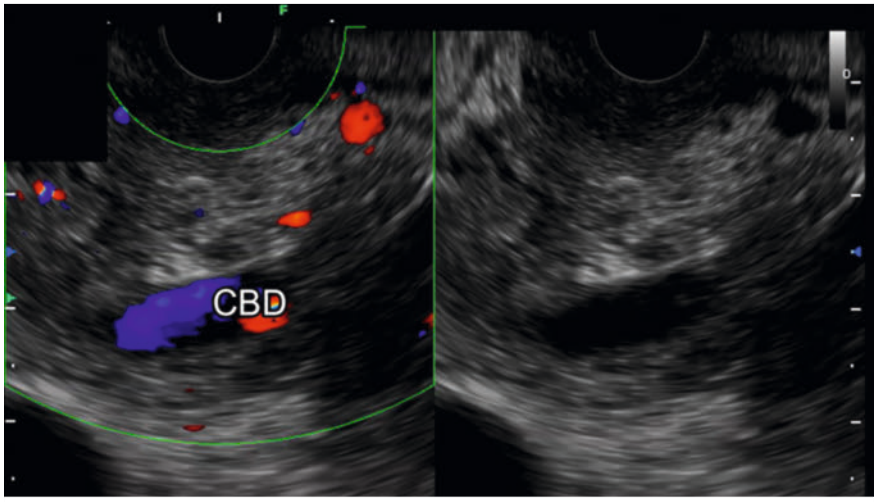


▶ **Fig. 1** Computed tomography shows a cystic lesion in the pancreatic head (red arrow).



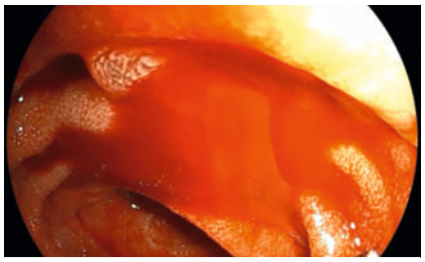
▶ **Fig. 2** Endoscopic ultrasound shows a hypoechoic tumor adjacent to the multilocular cyst.



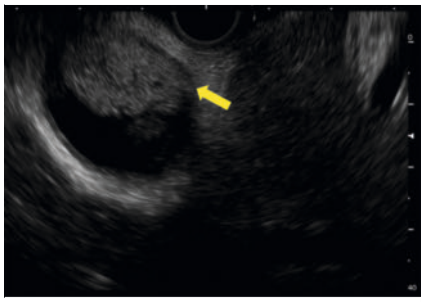
▶ **Fig. 3** A turbulent flow signal was observed in the common bile duct after endoscopic ultrasound-guided fine needle aspiration.

A 71-year-old man presented to our department with an elevated serum amylase level of 695 IU/L. Computed tomography revealed a cystic lesion measuring 26 mm in diameter in the pancreatic head (▶ **Fig. 1**). Endoscopic ultrasound (EUS) identified a hypoechoic tumor measuring 15 mm in diameter adjacent to this multilocular cyst. The common bile duct (CBD) was compressed by the tumor without proximal dilation (▶ **Fig. 2**). We performed EUS-guided fine needle aspiration (EUS-FNA) using a 22-gauge Franseen needle from the duodenal bulb in the long scope position. After three punctures, Doppler imaging revealed a turbulent flow signal in the CBD (▶ **Fig. 3**). Subsequently, we confirmed bleeding from the papilla endoscopically (▶ **Fig. 4**). Additionally, hyperechoic clots in the gallbladder were observed endosonographically (▶ **Fig. 5**). The patient remained stable, with a gradual reduction in the turbulent flow signal. Thereafter, we performed endoscopic biliary drainage using a 5-Fr nasobiliary catheter to monitor hemobilia and found no rebleeding. The pathological diagnosis was adenocarcinoma. (▶ **Video 1**).

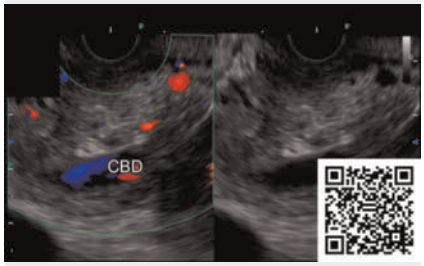
The incidence of iatrogenic hemobilia is reportedly increasing [1]. However, hemorrhage is a rare complication during EUS-FNA [2], and only two case reports of hemobilia after EUS-FNA have been documented [3, 4]. In our case, an impressive video of the turbulent flow signal by Doppler imaging was captured as a sign of hemobilia. Fortunately, hemobilia stopped spontaneously in this case. If the bleeding was severe, interventional radiology might have been needed. Despite taking precautions to determine a puncture route to avoid injuring intervening vessels and organs by B-mode and Doppler imaging, small arteries adjacent to the CBD might remain undetectable



▶ **Fig. 4** Bleeding from the papilla was observed endoscopically.



▶ **Fig. 5** Hyperechoic clots were seen in the gallbladder (yellow arrow).



Video 1 Hemorrhage into the bile duct was detected as a turbulent flow signal by Doppler imaging after endoscopic ultrasound-guided fine needle aspiration for a pancreatic head tumor.

due to scope compression. To ensure early detection of adverse events following EUS-FNA, it is essential to assess for hemorrhage both endosonographically and endoscopically.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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