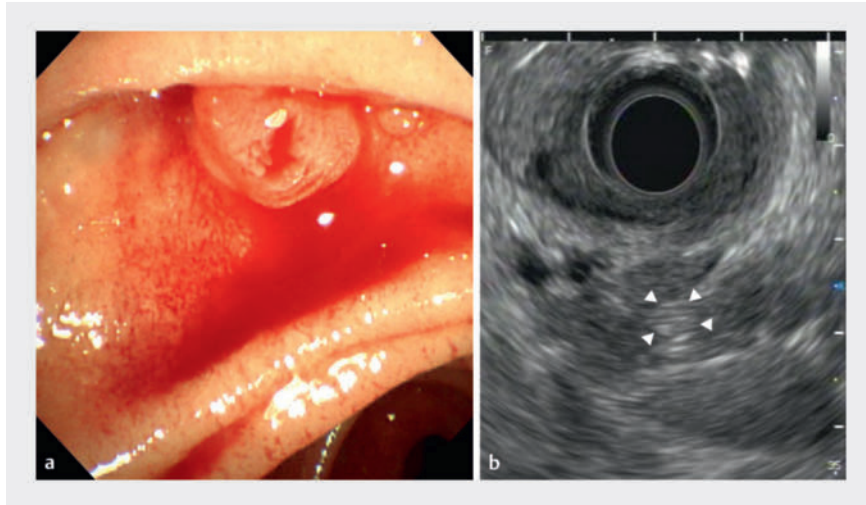


## Diagnostic utility of contrast-enhanced ultrasound endoscopy in a case of hemosuccus pancreaticus

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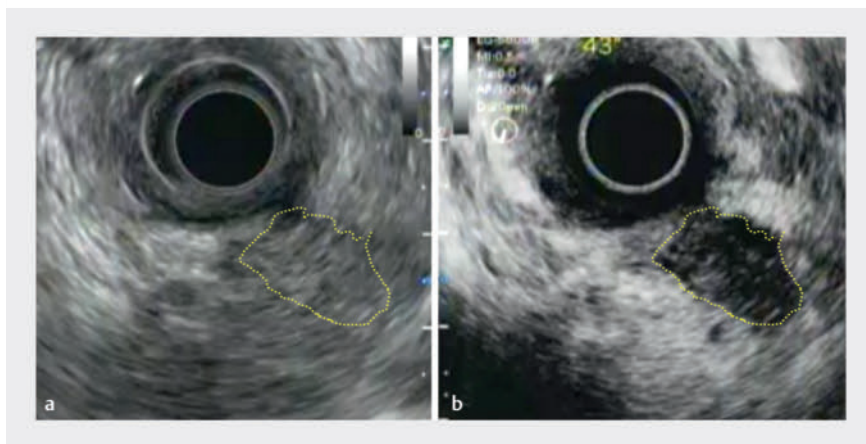
▶ **Video 1** Contrast-enhanced endoscopic ultrasound revealed a bleeding cystic area with debris indicative of hemosuccus pancreaticus.



▶ **Fig. 1** Endoscopic ultrasound (EUS) images. **a** Endoscopic observation during EUS showed bleeding from the duodenal papilla. **b** B-mode imaging demonstrated highly echogenic debris suggestive of a hematoma in the main pancreatic duct (arrowheads).

Hemosuccus pancreaticus is a rare condition characterized by bleeding from an intrapancreatic pseudocyst or ruptured peripancreatic aneurysm emptying from the main pancreatic duct (MPD) into the gastrointestinal tract via the duodenal papilla [1]. Contrast-enhanced computed tomography (CE-CT) is the primary diagnostic modality for hemosuccus pancreaticus. However, the indication for CE-CT should be carefully evaluated in individuals with renal dysfunction or an allergy to contrast media [2]. We describe a case where contrast-enhanced endoscopic ultrasound (CE-EUS) was useful in diagnosing hemosuccus pancreaticus (▶ **Video 1**).

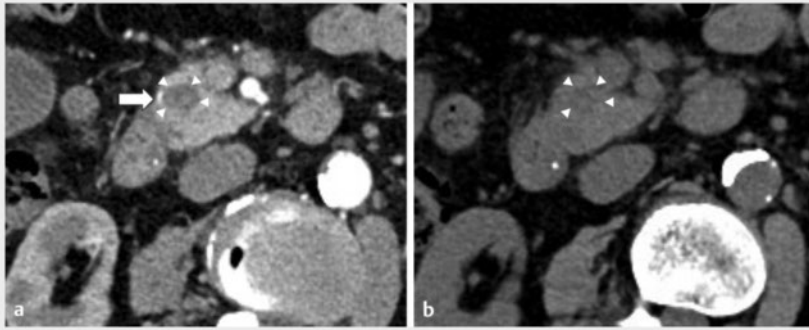
A 64-year-old man under follow-up for chronic pancreatitis presented with tarry stools. Clinical examination revealed anemia, renal failure (creatinine 2.5 U/L), and elevated pancreatic enzyme levels (amylase 324 IU/L; lipase 473 IU/L). CE-CT was difficult to perform due to renal dysfunction. Endoscopic findings revealed bleeding from the duodenal papilla. In EUS, high-echoic debris suggestive of hemorrhage was observed in the MPD. How-



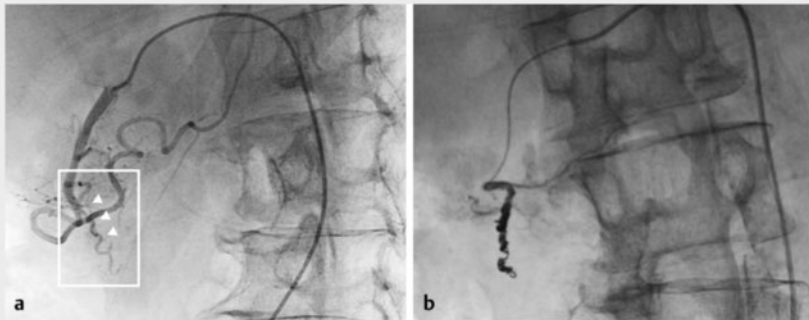
▶ **Fig. 2** Endoscopic ultrasound images. **a** B-mode observation revealed no lesions in the pancreatic parenchyma. **b** Contrast-enhanced endoscopic ultrasound with Sonazoid (GE Healthcare, Oslo, Norway) showed a pancreatic cystic lesion with debris (yellow dotted line).

ever, B-mode findings alone could not identify the hemorrhaging areas in the pancreatic parenchyma (▶ **Fig. 1**). CE-EUS with Sonazoid (GE Healthcare, Oslo, Norway) revealed a pancreatic cystic lesion with debris (▶ **Fig. 2**), the suspected bleeding point of the hemosuccus pancreaticus. However, the cystic lesion was obscured on plain CT (▶ **Fig. 3**). After

adequate hydration, CE-CT revealed contact between the anterior superior pancreaticoduodenal artery (ASPDA) and the cystic lesion. Angiography revealed irregular caliber changes in the ASPDA, confirming it as the bleeding point. Next, coil embolization was performed (▶ **Fig. 4**), which subsequently improved stool quality and anemia.



► **Fig. 3** Computed tomography (CT) images. **a** Contrast-enhanced CT revealed the anterior superior pancreaticoduodenal artery (arrow) in contact with the cystic lesion with internal hematoma (arrowheads). **b** The cystic lesion was obscured by plain CT (arrowheads).



► **Fig. 4** Angiography images. **a** Angiography showed irregular caliber changes in the anterior superior pancreaticoduodenal artery (arrowheads). **b** Coil embolization was performed on the vessel causing the bleeding.

Diagnosing hemosuccus pancreaticus using B-mode EUS or plain CT is challenging because of poor visualization of the hemorrhage area in the pancreatic parenchyma. CE-EUS is valuable in identifying the small arterial pseudoaneurysm with a fistula to the MPD [3, 4]. CE-EUS can visualize the area of hemosuccus pancreaticus in patients who cannot undergo CE-CT due to renal dysfunction or other reasons.

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### Conflict of Interest

The authors declare that they have no conflict of interest.

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### Bibliography

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