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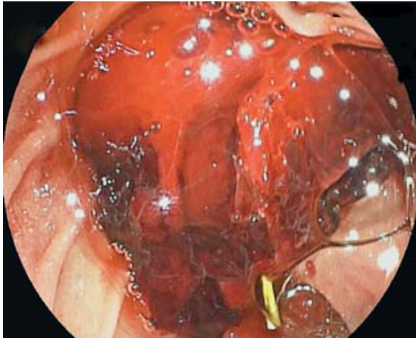
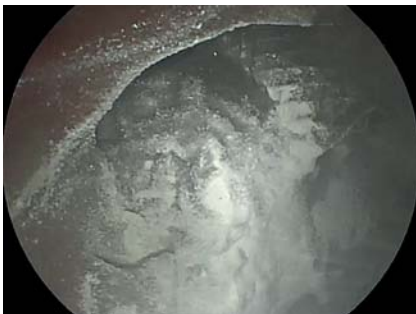
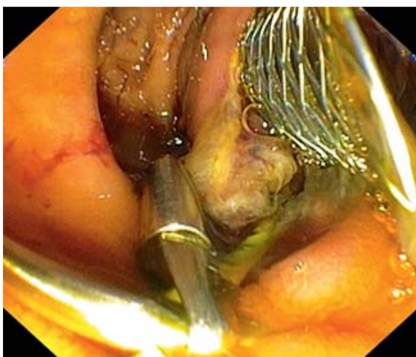
Endoscopic ultrasound-guided injection of coils for the treatment of refractory post-ERCP bleeding



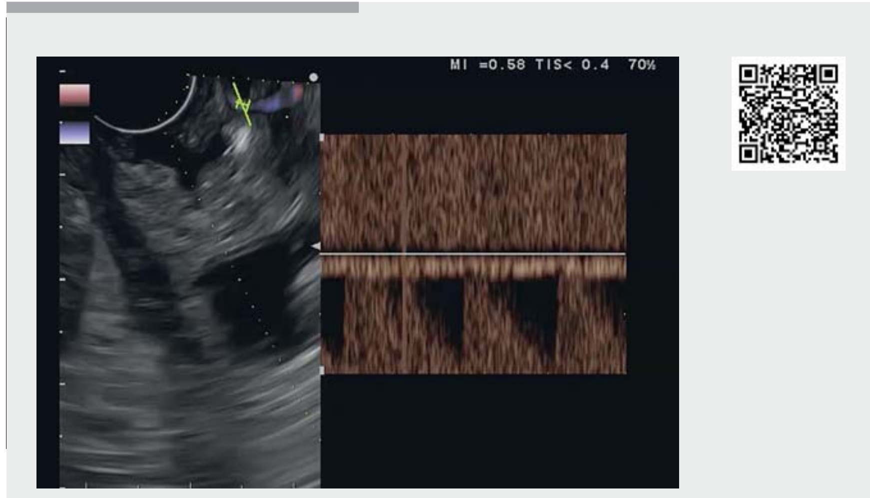
▶ **Fig. 1** The papilla showed persistent active bleeding.



▶ **Fig. 2** Hemostatic powder was used for the first rebleeding.



▶ **Fig. 3** Duodenoscopy was performed immediately after embolization, and the absence of bleeding was confirmed.



Video 1 Endoscopic ultrasound identified an arterial vessel in the duodenal wall at the level of the papilla. Endoscopic ultrasound-guided embolization was performed with a 0.018” coil through a 22-gauge needle. The absence of blood flow in the blood vessel after therapy was confirmed by color Doppler imaging.

An 82-year-old woman was referred for endoscopic retrograde cholangiopancreatography (ERCP) for choledocholithiasis. After cannulation of the pancreatic duct, transpancreatic sphincterotomy and placement of a 5-fr stent in the pancreas were performed.

A fully covered self-expandable metal stent was placed because of persistent post-biliary sphincterotomy bleeding. The next day, the patient showed melena, hematemesis, and decreased hemoglobin levels. A gastroscopy was performed and active oozing bleeding from the papilla was evident. Injection therapy with epinephrine and hemoclips was performed. A few hours later, a new episode of hematochezia occurred. Repeat endoscopy showed persistent active bleeding from the papilla (▶ **Fig. 1**). Hemostatic powder (Hemospray; Cook Medical, Winston Salem, North Carolina, USA) was used (▶ **Fig. 2**), but the bleeding persisted 24 hours later.

Endoscopic ultrasound (EUS) was performed. A curvilinear array echoendoscope (GF-UCT180; Olympus, Tokyo, Japan) that allowed color Doppler imaging was advanced to the second portion of the duodenum to visualize the peripapillary vascular anatomy. An arterial vessel was identified in the duodenal wall at the level of the papilla. EUS-guided embolization was performed with a 0.018” coil (Tornado; Cook Medical, Inc., Bloomington, Indiana, USA) through a 22-gauge needle. Color Doppler imaging confirmed the absence of blood flow after therapy (▶ **Video 1**). Duodenoscopy was performed immediately after embolization, and the absence of bleeding was confirmed (▶ **Fig. 3**).

The efficacy of EUS-guided treatments of nonvariceal upper gastrointestinal bleeding has been reported only in the form of small case series and case reports [1]. Fockens et al. [2] first reported on the usefulness of EUS in the diagnosis and treatment of small abnormal vessels in patients with Dieulafoy’s lesions. Currently, series have been described with success rates of 88 % – 100 % in the treat-

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ment of gastrointestinal stromal tumors, Dieulafoy lesions, duodenal ulcers, pancreatic pseudoaneurysms, ulcers related to esophageal cancer, and after Roux-in-Y gastric bypass [3 – 5]. EUS-guided injection of coils for the treatment of refractory post-ERCP bleeding has not been reported in the literature.

In conclusion, EUS-guided injection of coils is a safe and effective alternative for the treatment of refractory post-ERCP bleeding if other conventional techniques have failed.

Endoscopy_UCTN_Code_CPL_1AK_2AC

Competing interests

The authors declare that they have no conflict of interest.

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