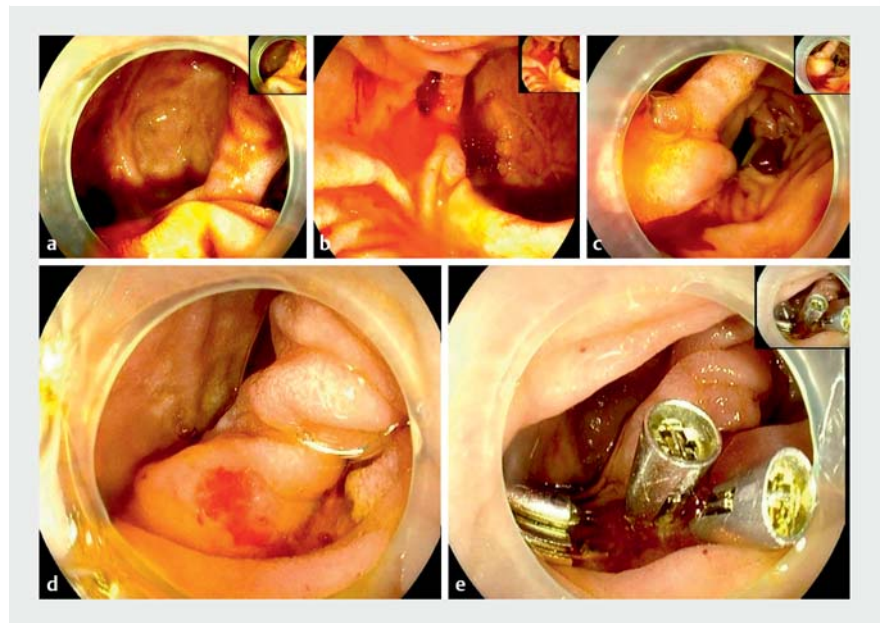


Successful hemostasis of multiple parapapillary diverticular hemorrhage by clip-with-rubber-band traction technique at the descending duodenum

Various traction devices and techniques have been used to facilitate endoscopic submucosal dissection by creating a clear field of vision and allowing dissections to be performed more quickly and safely [1]. Here, we report successful endoscopic hemostasis of parapapillary diverticular hemorrhage by the clip-with-rubber-band traction technique at the descending duodenum.

A 74-year-old man experienced intermittent tarry stools for 3 days, and about 50 mL hematemesis on the day before admission. Emergency gastroscopy found no obvious blood remaining in the esophagus, stomach, or duodenal bulb (▶ **Video 1**). As gastroscopy progressed, part of a huge diverticulum was seen at the papillary region of the descending duodenum, and a large amount of bright red blood had accumulated in the diverticulum (▶ **Fig. 1 a**). As the gastroscope is a forward-viewing device, the bleeding point, as well as the papilla and entire diverticulum, could not be identified. The gastroscopy was therefore replaced with a side-viewing duodenoscope, which allowed visualization of two diverticula and a 2-mm erosion on the ridge of the smaller diverticulum, with the active bleeding site on its surface (▶ **Fig. 1 b**). However, clips could not be applied to the lesion due to the inconvenient angle, even with use of the elevator. We therefore switched back to the gastroscope and attempted the clip-with-rubber-band traction technique. A rubber band was used to assist two clips in pulling the mucosa of the diverticulum ridge to the opposite side of the intestinal wall (▶ **Fig. 1 c**); the papilla was also turned toward the intestinal lumen. In order to present the bleeding point clearly, another rubber band was used with two additional clips for improved



▶ **Fig. 1** Endoscopic views of parapapillary diverticular hemorrhage. **a** Gastroscope view of the huge bleeding parapapillary diverticulum; however, the papilla and bleeding point could not be clearly identified. **b** Duodenoscope view of two diverticula and a 2-mm erosion on the ridge of the smaller diverticulum, with the active bleeding site on its surface. **c** Using a gastroscope, a rubber band was used to assist two clips in pulling the mucosa of the diverticulum ridge to the opposite side of the intestinal wall. **d** Using the clip-with-rubber-band traction technique, the bleeding point was presented clearly. **e** Gastroscope view of four clips applied to the superficial mucous membrane of the bleeding point.

traction (▶ **Fig. 1 d**). Finally, four clips were used to clip the superficial mucous membrane of the bleeding point, and the bleeding was effectively suppressed (▶ **Fig. 1 e**). Special attention should be paid to avoid clipping the common bile duct and pancreatic duct during the clipping operation [2].

The bleeding point was hidden in the parapapillary diverticulum, which opened toward the anal side making access difficult [3]. In this case, the clip-with-rubber-band method was a good option.

Endoscopy_UCTN_Code_CPL_1AH_2AC

Competing interests

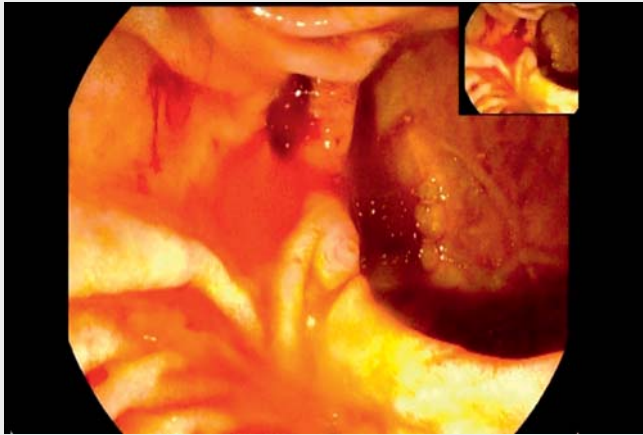
The authors declare that they have no conflict of interest.

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Video 1 Successful hemostasis of a parapapillary diverticular bleeding by clip-with-rubber-band traction technique.

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