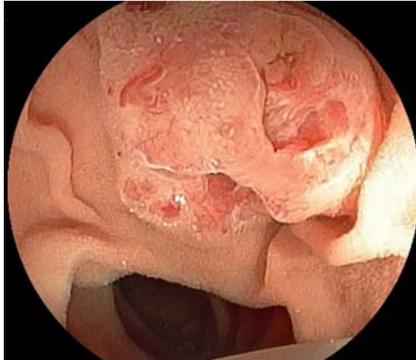


## Unprecedented case of duodenal papillary disinsertion after endoscopic papillectomy for a neuroendocrine tumor

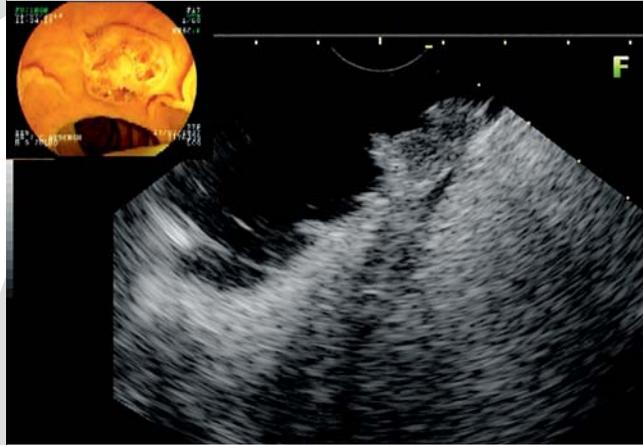


**Fig. 1** Endoscopic view in a 77-year-old woman who had previously undergone Billroth II gastrectomy for a gastrointestinal stromal tumor (GIST) showing a rounded ulcerated tumor in the region of the papilla of Vater.



**Fig. 3** Endoscopic views showing: **a** the tumor completely grasped by a polypectomy snare; **b** the resection site immediately after endoscopic papillectomy.

Disinsertion of the ampulla of Vater is a serious but rare event during gastric resection. Injury to this area is possible during any operation on the duodenum, but occurs most frequently in the presence of scarring or inflammation that causes secondary shortening of the duodenal bulb [1–4]. Endoscopic papillectomy is a “high



**Fig. 2** View during endoscopic ultrasound (EUS) showing a regular hypoechoic area restricted to the duodenal wall with no invasion of the common bile duct and main pancreatic duct.



**Fig. 4** Macroscopic appearance of the resected tumor.

risk” procedure: the reported complication rate varying from 8% to 35%, with acute pancreatitis the most common complication (5%–15%) [5,6]; however, disinsertion of the ampulla of Vater has not been reported in the literature after endoscopic papillectomy.

We present the first report of a patient developing papillary disinsertion after endoscopic papillectomy for a papillary neuroendocrine tumor. The patient was a 77-year-old woman who had undergone Billroth II gastrectomy 3 years previously for a gastrointestinal stromal tumor (GIST; >2.5 cm and Ki67 >10%). A papillary neuroendocrine tumor was identified during a follow-up endoscopy (Fig. 1) and the patient was referred for endoscopic treatment.

Endoscopic ultrasound (EUS) revealed a lesion that was restricted to the duodenal wall without invasion of the common bile duct, main pancreatic duct, or pancreas

(Fig. 2; Video 1). The tumor was removed with a snare (Fig. 3a) and, immediately after its removal, the site of the resection appeared to be in excellent condition (Fig. 3b).

After the specimen had been recovered (Fig. 4), the echoendoscope was reintroduced in order to observe the outcome of the procedure. At this point, we observed complete disconnection of the duodenal papilla from the duodenal bulb wall (Fig. 5). The diagnosis was confirmed by injection of contrast with the endoscope positioned in front of the site of the resection (Fig. 6).

### Video 1

Images of the lesion, its removal, and the signs of papillary disinsertion, including fluoroscopy that showed retroperitoneal contrast, and the final pancreaticoduodenectomy specimen.



**Fig. 5** Endoscopic view showing disruption of the muscle fibers and the sinking of the pancreas in relation to the duodenal wall.

In our experience with endoscopic papillectomy in 56 patients treated since 2010, this adverse event has never previously occurred. We assume that the most important factor related to this event was the altered anatomy caused by the antrectomy with Billroth II reconstruction, which hindered the progression of the endoscope into the afferent loop and its positioning in front of the duodenal papilla. Another key point was the kinking of the jejunal loop that occurred during the positioning of the endoscope in front of the duodenal papilla.

The prognosis of this adverse event is related to early diagnosis. In this case, treatment success was achieved by the patient undergoing pancreaticoduodenectomy, with lymph node removal in the same procedure as she had a papillary neuroendocrine tumor of greater than 2.0 cm in size.

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**Competing interests:** None



**Fig. 6** Fluoroscopic appearance after contrast had been injected just in front of the site of the resection showing a collection of contrast in the retroperitoneum.

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