Diagnosis and preoperative tagging of duodenal gastrinoma by endoscopic ultrasound

Fig. 1 Endoscopic ultrasound showing a hypoechoic, well-defined, 10-mm submucosal lesion of the duodenal bulb (arrows), without invasion of the muscularis propria, in a 57-year-old man presenting with chronic diarrhea of 6 years' duration.

Fig. 2 Endoscopic ultrasound visualization of the duodenal gastrinoma (arrows) at the end of the tagging procedure.

Fig. 3 Computed tomography 5 hours after the procedure demonstrating a Lipiodol tag (arrow).

Video 1

During upper gastrointestinal endoscopy with a side-viewing scope, a submucosal lesion of the bulb in an immediately post-pyloric location is observed and biopsied. The bulb exhibits a diffuse Brunner's gland hyperplasia.

Video 2

Endoscopic ultrasound-guided tagging of the tumor with 0.4 mL of contrast agent.

Almost 50% of sporadic duodenal gastrin-expressing neuroendocrine tumors (NETs), so-called gastrinomas, are associated with Zollinger–Ellison syndrome (ZES). The risk for lymph node metastasis is high (40%–70%), even in tumors smaller than 10mm [1]. We report the

endoscopic ultrasound (EUS) diagnosis of a case of sporadic duodenal gastrinoma manifesting with ZES. A 57-year old man presented with chronic diarrhea that had lasted for 6 years. Upper gastrointestinal endoscopy showed multiple ulcerations of the second part of the

duodenum. The patient's high levels of gastrin and chromogranin A (two and four times the normal values, respectively) and proton pump inhibitor-sensitive diarrhea were suggestive of ZES.

The results of computed tomographic enterography and somatostatin receptor scintigraphy were normal. EUS showed a hypoechoic, well-defined, 10-mm submucosal lesion of the duodenal bulb (● Fig. 1), without invasion of the muscularis propria, and two suspicious periduodenal lymph nodes. The lesion was then visualized with a side-viewing scope (● Video 1), and biopsy confirmed a well-differentiated NET. Surgical resection after endoscopic tagging of the lesion was proposed. Because of the immediately post-pyloric location of the lesion, tagging with clips was precluded. Under EUS guidance, a curvilinear echoendoscope (GF-UCT140;

Fig. 4 Pathological examination of the surgical specimen. **a** Typical appearance of a well-differentiated neuroendocrine tumor, without invasion of the muscularis propria (hematoxylin-eosin-saffron, original magnification $\times 10$). **b** Immunohistochemistry reveals a gastrin-expressing tumor (indirect immunoperoxidase, original magnification $\times 100$).

Olympus, Tokyo, Japan) and a 22-gauge needle (Wilson-Cook Medical, Winston-Salem, North Carolina, USA) (► **Fig. 2**, ► **Video 2**) were used to inject 0.4 mL of contrast agent (Lipiodol; Guerbet, Bloomington, Indiana, USA) into the tumor. The tag was seen at computed tomography 5 hours later (► **Fig. 3**).

Duodenectomy with antrectomy and lymph node dissection were performed. Pathological examination confirmed a

10-mm, gastrin-expressing G1 NET (► **Fig. 4**) and two metastatic lymph nodes (pT1N1R0). Despite normalization of the gastrin level after the surgery, esomeprazole at a dosage of 80 mg/d was maintained.

In conclusion, our case illustrates the high risk for lymph node invasion associated with even small sporadic duodenal gastrinomas, and the key role of EUS in the diagnosis, staging, and tagging of such lesions.

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Reference

- 1 Scherübl H, Jensen R, Cadiot G et al. Neuroendocrine tumors of the small bowels are on the rise: early aspects and management. *World J Gastrointest Endosc* 2010; 2: 325 – 334

Bibliography

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