Gastric neuroendocrine tumors display deep invasive features, with amorphous pit and irregular vascular pattern, using narrow-band imaging and magnification

To the best of our knowledge, gastric neuroendocrine tumors are rare, usually diagnosed with endoscopic ultrasound [1], and their endoscopic aspect has rarely been described in the literature [2]. We present the case of a 71-year-old man who was referred for endoscopic submucosal dissection (ESD) of a gastric neuroendocrine tumor, 2 cm in size and without secondary lesions. The patient had previously been diagnosed with Biermer disease with gastric atrophy, and refused surgery for the tumor. Gastroscopy showed a 2-cm nodular submucosal lesion, with ulceration to the top and lateral aspect, in the anterior part of the fundus (Fig. 1 a, c). Within the ulcerated zone, a clearly demarcated area appeared. Initially, this area was covered with a thick mucus cap, which was easily washed using a peristaltic pump.

Narrow-band imaging with dual focus magnification showed absence of pit pattern and presence of large amorphous areas, as described by Kudo as a Vn pit pattern [3]. The vascular pattern was composed of high-density straight and "spark-like" capillary vessels, without any avascular areas. This vascular pattern was clearly irregular, as described by Sano’s classification as a type 3a pattern (Fig. 1 b, d) [4].

We performed ESD with large safety margins, without any adverse events (Video 1). Pathological examination (Fig. 2) showed a 5.5-cm specimen containing a nodular lesion of 2.7 cm, with safe margins. A grade 1 neuroendocrine tumor was diagnosed. The multidisciplinary team considered the resection to be curative: only follow-up with computed tomography scan to assess for lymph node involvement was indicated.

Fig. 1 Endoscopic aspect of gastric neuroendocrine tumor. a Submucosal nodular aspect with two ulcerations. b Narrow-band imaging (NBI) aspect before removing the mucus cap. c White-light aspect after removing the cap, revealing red vessels. d NBI aspect with amorphous mucosal pattern and irregular "spark-like" capillary vessels (arrow).

Video 1 Endoscopic aspect and endoscopic submucosal dissection of a grade 1 gastric neuroendocrine tumor.
This case illustrates the specific endoscopic aspect of gastric neuroendocrine tumors when ulcerated, and the ability to cure such tumors safely with ESD without always having to use full-thickness resection devices [5].

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Competing interests

None

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