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VISCERAL SURGERY VIDEOS

Surgical procedure for multifocal duodenopancreatic gastrinomas in a MEN-1 patient (with video)

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Gastrinoma;
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Duodenotomy;
Endoscopic duodenal transillumination;
Lymphadenectomy

Gastrinomas are duodenal or pancreatic neuroendocrine tumours (NETs) responsible for hypergastrinemia and Zollinger-Ellison Syndrome (ZES). Because gastric acid hypersecretion can be controlled in almost every patient by proton pump inhibitors, surgery is not required for the hormone excess state. Duodenal and pancreatic gastrinomas are frequently multiple in patients with MEN-1, and their surgical management is controversial for the management of the metastatic risk. Surgical treatment for MEN-1 patients might be indicated for tumors over 2 cm, in case of localized metastatic disease or ''aggressive'' gastrinoma family [1—3].

This video showed a 62-year-old MEN-1 woman with multifocal duodenal gastrinomas and metastatic lymph node. Clinical symptoms were controlled using proton pump inhibitors. CT-Scan, MRI with diffusion weighted sequences and PET/CT 68Ga-DOTA-TOC demonstrated high fixation uptake of a duodenopancreatic adenopathy, facing the genu superius. Endoscopic ultrasonography and duodenoscopy revealed at least 3 duodenal gastrinomas among which one was grade G1 on pathological examination, and several NETs in the pancreatic head. The biggest one, infracentimetric, was localized at the direct contact of main pancreatic duct. It was not possible to define whether or not this lesion was functional from preoperative workup. After a bi-subcostal laparotomy, surgical procedure began with a complete abdominal exploration. A large colo-epiploic detachment and a Kocher maneuver allowed good exposure of the duodenum and pancreas. The intraoperative pancreatic ultrasonography showed an 8 mm cephalic NET, in contact with the main pancreatic duct. We performed its partial enucleation and immunohistochemistry confirmed its nonfunctional nature. A regional lymphadenectomy of hepatic pedicle, right

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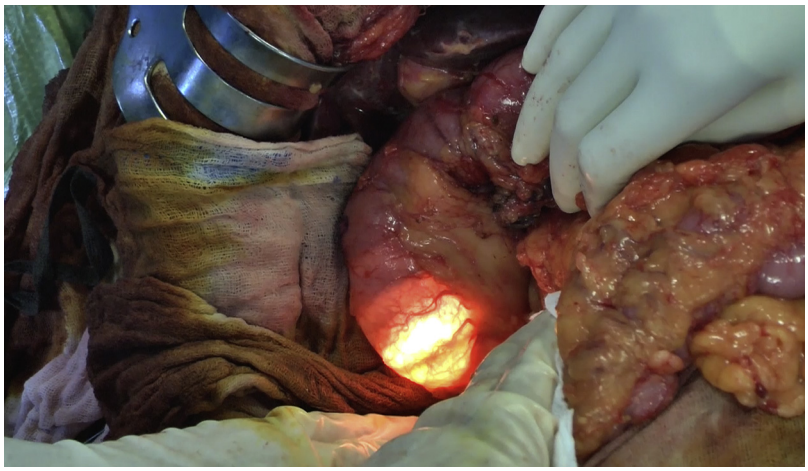

Figure 1. Endoscopic duodenal transillumination.

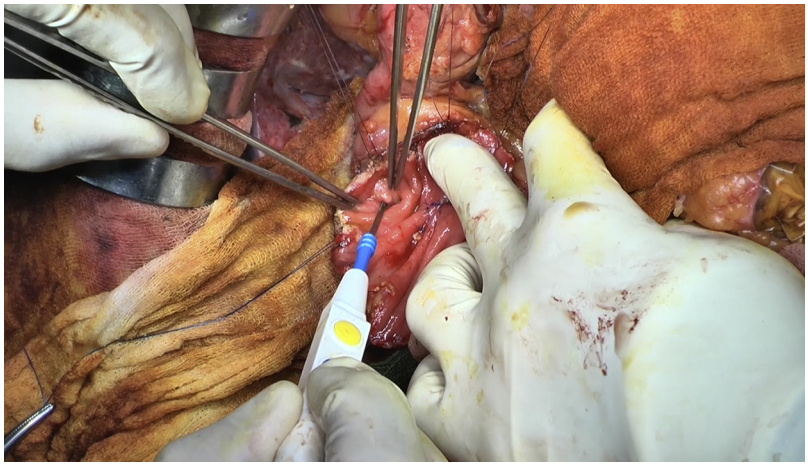

Figure 2. Longitudinal duodenotomy. Inspection and palpation of gastrinomas.

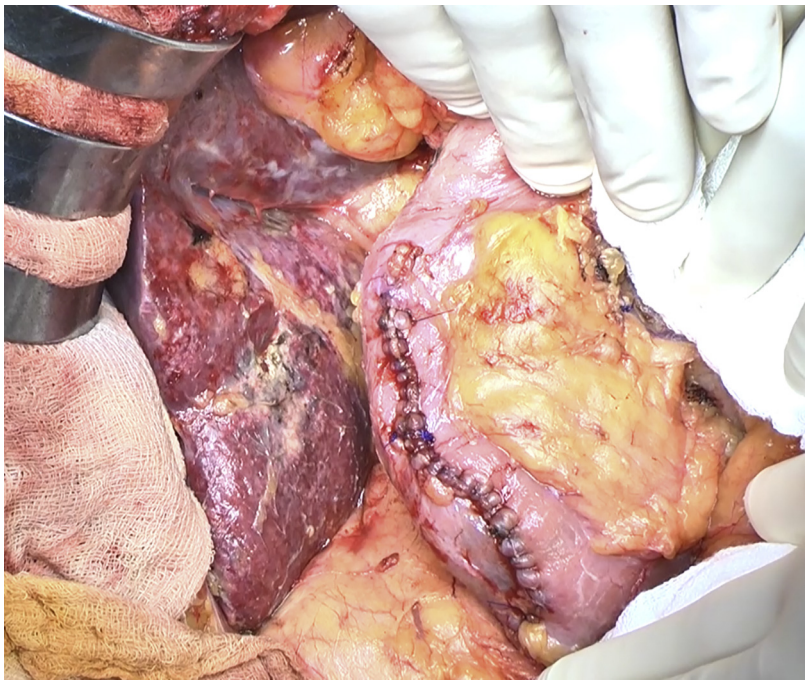

Figure 3. Longitudinal duodenotomy closed by two hemi-continuous sutures.

gastro-epiploic pedicle, upper edge of the pancreas, and a large inter-aortico-caval lymphadenectomy, up to the renal veins, including adenopathies at the posterior face of the pancreas were performed. Endoscopic transillumination showed a lesion in the second duodenum (D2) (Fig. 1). A longitudinal duodenotomy on D2 allowed inspection and palpation of 3 gastrinomas (Fig. 2). Duodenotomy was closed by two hemi-continuous sutures with an epiplooplasty at its contact (Fig. 3). Postoperative gastrin level decreased from 612 to 220 ng/L (N < 115 ng/L) in this patient still under proton pump inhibitors. This video is useful for surgeons because it described different surgical steps to perform multifocal and metastatic duodenal gastrinomas resection, with endoscopic duodenal transillumination, intraoperative pancreatic ultrasound and duodenotomy).

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at https://doi.org/10.1016/j.jviscsurg.2018.09.005.

Disclosure of interest

The authors declare that they have no competing interest.

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