



(CASE REPORT)



GIANT NON-FUNCTIONING NEUROENDOCRINE TUMOR OF THE PANCREATIC BODY MIMICKING A LESSER OMENTUM MASS AND INVADING THE LIVER AND STOMACH: A CASE REPORT

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ABSTRACT

Introduction: Pancreatic neuroendocrine tumors are rare neoplasms, most of which are non-functioning. Because they cause no hormonal syndrome, they are often diagnosed late, when they have reached a large size. Their location and their relationships with adjacent organs may make the preoperative identification of the organ of origin difficult.

Case presentation: We report the case of a 60-year-old woman with treated asthma who presented with a one-year history of progressively worsening epigastric pain radiating to the back. Physical examination and laboratory tests were normal, including gastrinemia, blood glucose, the other secretory neuroendocrine markers and urinary metanephrines. Abdominopelvic computed tomography showed a 9 cm hypervascular mass in the lesser omentum, in contact with the pancreas, liver and stomach, supplied by a branch of the celiac trunk. Endoscopic ultrasound-guided biopsy concluded to a low-grade neuroendocrine tumor. Surgery was indicated because of the tumor size and symptoms. Exploration revealed a highly vascularized neuroendocrine tumor arising from the pancreatic body and invading the left lobe of the liver and part of the stomach. A distal (body and tail) pancreatectomy was performed after meticulous dissection, and histopathology of the specimen confirmed a neuroendocrine tumor. The postoperative course was uneventful and the patient was discharged on postoperative day 5.

Conclusion: A giant non-functioning pancreatic neuroendocrine tumor may mimic a lesser omentum mass. Surgical resection, even with locoregional invasion, remains the treatment of choice when feasible.

Keywords: Pancreatic neuroendocrine tumor; Non-functioning; Giant tumor; Lesser omentum; Endoscopic ultrasound; Distal pancreatectomy

1 INTRODUCTION

Neuroendocrine neoplasms arise from cells of the diffuse neuroendocrine system and may develop in any digestive organ. Their incidence has increased about 6.4-fold over four decades in the United States, partly because of the wider use of cross-sectional imaging [1]. Pancreatic neuroendocrine tumors (PanNETs) account for only 1% to 2% of

pancreatic neoplasms, and most of them are non-functioning, meaning that they are not associated with a clinical hormonal hypersecretion syndrome [2].

Non-functioning PanNETs are often discovered incidentally or when they cause symptoms related to their mass effect, such as abdominal pain, and they may then reach a large size [2,4]. When the tumor is large and exophytic, its organ of origin may be difficult to identify on imaging, and it may mimic a mass of an adjacent organ or space.

We report the case of a giant 9 cm non-functioning neuroendocrine tumor of the pancreatic body that presented as a mass of the lesser omentum and invaded the left lobe of the liver and the stomach. This case is reported in line with the CARE guidelines [8].

2 CASE PRESENTATION

2.1 Patient information

A 60-year-old woman, followed for asthma under treatment, presented with a one-year history of epigastric pain radiating to the back, which had become progressively more intense. There were no associated symptoms, in particular no change in bowel habits. She had no history of diabetes or peptic ulcer disease.

2.2 Clinical findings

Physical examination was unremarkable.

2.3 Diagnostic assessment

Routine laboratory tests were normal. A functional hormonal syndrome was ruled out: gastrinemia and blood glucose were normal, and the other markers of secretory neuroendocrine tumors were within normal limits. Urinary methoxylated derivatives (metanephrines) were normal, excluding a pheochromocytoma.

Abdominopelvic computed tomography showed a 9 cm mass located in the lesser omentum, in contact with the pancreas inferiorly, the liver on the right and the stomach on the left (Figure 1). The mass was hypervascular, contained calcifications and was supplied by a branch of the celiac trunk (Figure 2).



Figure 1: Sagittal contrast-enhanced computed tomography (maximum intensity projection) showing a large heterogeneous, hypervascular mass with calcifications in the lesser omentum, above the pancreas



Figure 2: Sagittal computed tomography (maximum intensity projection) showing the arterial supply of the mass from a branch of the celiac trunk (arrow)

Endoscopic ultrasound was performed, with a guided biopsy of the mass. Histological examination concluded to a low-grade neuroendocrine tumor.

2.4 Therapeutic intervention

Given the large size of the tumor and its symptomatic nature, surgical resection was indicated. After preoperative preparation, the patient underwent laparotomy. Exploration showed that the mass was in fact a neuroendocrine tumor arising from the body of the pancreas. The tumor was highly vascularized and invaded the left lobe of the liver and part of the stomach. After meticulous dissection of this highly vascularized tumor, a distal pancreatectomy (corporeocaudal pancreatectomy) was performed, removing the tumor arising from the pancreatic body.

2.5 Follow-up and outcomes

The postoperative course was uneventful, and the patient was discharged on postoperative day 5. Histopathological examination of the surgical specimen confirmed the diagnosis of a neuroendocrine tumor of the pancreas.

3 DISCUSSION

PanNETs are rare, with an incidence of less than one case per 100,000 inhabitants per year, but their incidence has risen steadily [1,2]. Non-functioning tumors represent the large majority of PanNETs. In the absence of a hormonal syndrome, they remain asymptomatic for a long time and are revealed either incidentally or by nonspecific symptoms related to their volume, such as abdominal pain, weight loss or compression of adjacent structures [2,4]. Our patient had one year of epigastric pain radiating to the back, a symptom that is not specific but that fits the slow growth of these tumors.

A complete hormonal work-up is essential to rule out a functioning tumor, which would require specific perioperative management. Hormonal assays should be guided by the clinical presentation [4,5]. In our patient, gastrinemia, blood glucose and the other secretory markers were normal, confirming the non-functioning nature of the tumor. Measuring metanephrines before any biopsy or surgery is also recommended when a pheochromocytoma or paraganglioma cannot be excluded, as in the case of a hypervascular mass of uncertain origin [5].

Contrast-enhanced computed tomography with arterial and portal venous phases is the reference imaging examination. Well-differentiated PanNETs typically appear as well-circumscribed, hypervascular masses enhancing intensely in the arterial phase; large tumors are often heterogeneous, with necrosis or calcifications [5,6]. Liver MRI with diffusion-weighted sequences and somatostatin receptor imaging, ideally 68Ga-DOTA-peptide PET/CT, are recommended to complete the staging and to search for distant metastases [5,6]. In our case, the exophytic development of the tumor toward the lesser omentum, its contact with the liver and the stomach, and its arterial supply from a celiac branch made the organ of origin difficult to establish preoperatively. Endoscopic ultrasound with guided biopsy is the key examination to obtain a histological diagnosis and a grade before treatment, and it is strongly recommended for pancreatic lesions larger than 10 mm [4,5].

PanNETs are classified according to the World Health Organization by their differentiation and their proliferation index, measured by Ki-67 and the mitotic count: grade 1 (Ki-67 below 3%), grade 2 (3% to 20%) and grade 3 (above 20%) [3]. Low-grade tumors have a better prognosis than high-grade tumors, but tumor size above 2 cm, nodal involvement and invasion of adjacent organs are associated with a higher risk of recurrence [4,5].

Surgery is the only curative treatment of localized PanNETs. Whereas small asymptomatic non-functioning tumors of 2 cm or less may be safely monitored, as shown by the ASPEN study [7], resection is indicated for larger or symptomatic tumors. Current French and European guidelines recommend that resection should always be considered, even in the presence of locoregional extension, unless the operative risk is too high, and that it should include a lymphadenectomy with at least 12 to 13 lymph nodes [4,5]. When adjacent organs are invaded, an en bloc multivisceral resection aiming at a complete (R0) resection is justified, given the slow evolution of these tumors and the long survival that can be expected after complete resection [4,5]. These procedures should be performed in high-volume centers with expertise in pancreatic surgery and neuroendocrine tumors [5]. For tumors of the pancreatic body and tail, distal pancreatectomy is the standard procedure, and a minimally invasive approach should be favored when feasible [5]. In our patient, the size of the tumor, its marked vascularity and its relationships with the liver and the stomach justified an open approach; meticulous dissection allowed a distal pancreatectomy with a simple postoperative course, and histopathology confirmed the neuroendocrine nature of the tumor. No adjuvant treatment is recommended after resection of a well-differentiated PanNET [4,5].

After resection, prolonged follow-up is required because recurrences may occur late. Imaging (CT alternating with liver MRI) is recommended every 6 to 12 months during the first five years, then at longer intervals, for at least 10 to 15 years in patients at risk of recurrence [5].

4 CONCLUSION

Non-functioning pancreatic neuroendocrine tumors may reach a very large size before becoming symptomatic and may mimic a mass of the lesser omentum when they develop exophytically. Endoscopic ultrasound-guided biopsy allows a preoperative diagnosis. Surgical resection, by distal pancreatectomy for tumors of the body and tail and including invaded adjacent structures when necessary, remains the treatment of choice and offers the best chance of long-term survival. Long-term follow-up is essential.

STATEMENTS ON COMPLIANCE WITH ETHICAL STANDARDS

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Disclosure of conflict of interest

The authors declare no conflict of interest.

Statement of informed consent

Written informed consent was obtained from the patient for the publication of this case report and the accompanying images.

REFERENCES

- [1] Dasari A, Shen C, Halperin D, Zhao B, Zhou S, Xu Y, et al. Trends in the incidence, prevalence, and survival outcomes in patients with neuroendocrine tumors in the United States. *JAMA Oncol.* 2017;3(10):1335-42.
- [2] Halfdanarson TR, Rabe KG, Rubin J, Petersen GM. Pancreatic neuroendocrine tumors (PNETs): incidence, prognosis and recent trend toward improved survival. *Ann Oncol.* 2008;19(10):1727-33.
- [3] WHO Classification of Tumours Editorial Board. Digestive system tumours. WHO classification of tumours. 5th ed. Lyon: International Agency for Research on Cancer; 2019.
- [4] Kos-Kudła B, Castaño JP, Denecke T, Grande E, Kjaer A, Koumariannou A, et al. European Neuroendocrine Tumour Society (ENETS) 2023 guidance paper for nonfunctioning pancreatic neuroendocrine tumours. *J Neuroendocrinol.* 2023;35(12):e13343.

- [5] de Mestier L, Lepage C, Hadoux J, Cros J, Deguelte S, Gaujoux S, et al. Néo­plasies neuroendocrines digestives. Thésaurus National de Cancérologie Digestive (TNCD), chapitre 11. Version du 07/09/2026. Available from: <http://www.tncd.org>
- [6] Sundin A, Arnold R, Baudin E, Cwikla JB, Eriksson B, Fanti S, et al. ENETS consensus guidelines for the standards of care in neuroendocrine tumors: radiological, nuclear medicine and hybrid imaging. *Neuroendocrinology*. 2017;105(3):212-44.
- [7] Partelli S, Massironi S, Zerbi A, Niccoli P, Kwon W, Landoni L, et al. Management of asymptomatic sporadic non-functioning pancreatic neuroendocrine neoplasms no larger than 2 cm: interim analysis of prospective ASPEN trial. *Br J Surg*. 2022;109(12):1186-90.
- [8] Gagnier JJ, Kienle G, Altman DG, Moher D, Sox H, Riley D; CARE Group. The CARE guidelines: consensus-based clinical case reporting guideline development. *Glob Adv Health Med*. 2013;2(5):38-43.