



## Surgical Management of Pancreatic Neuroendocrine Neoplasms Women

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### Editorial Note

Pancreatic Neuroendocrine Neoplasms (PNETs) are rare, accounting for less than 3% of all pancreatic tumors. PNETs exhibit a wide spectrum of clinical behavior that has made classification and staging difficult. While the majority of PNETs are associated with relatively good survival, there can be significant variability in outcomes based on their biological heterogeneity. PNETs share a unique genetic identity, functional behavior and clinical course. Compared with tumors of the exocrine pancreas, they are rare and show a different biological behavior and prognosis. Some PNETs are associated with symptoms of hormone secretion, with increased systemic levels of insulin, gastrin, glucagon or other hormones. More commonly, PNETs are non-functional, without hormone secretion. Surgical resection is the mainstay of therapy, particularly for localized disease that must be tailored to tumor and clinical characteristics. Surgery is indicated in patients with PNETs to alleviate systemic symptoms due to hormone over production, compressive symptoms due to local mass effect and to prevent malignant transformation or dissemination. Small, incidental PNETs are increasingly managed non-operatively. Surgery may also be indicated in some instances of metastatic disease, if all metastatic foci may be removed.

This study outlines the surgical management and clinicopathological findings of pancreatic neuroendocrine tumors (PNETs). There are various surgical options, such as enucleation of the tumor, spleen-preserving distal pancreatectomy, distal pancreatectomy with splenectomy, pancreatoduodenectomy, and duodenum-preserving

pancreas head resection. Lymph node dissection is performed for malignant cases. New guidelines and classifications have been proposed and are now being used in clinical practice. However, there are still no clear indications for organ-preserving pancreatic resection or lymph node dissection. Hepatectomy is the first choice for liver metastases of well-differentiated neuroendocrine carcinoma without extrahepatic metastases. On the other hand, cisplatin-based combination therapy is performed as first-line chemotherapy for metastatic poorly differentiated neuroendocrine carcinoma. Other treatment options are radiofrequency ablation, transarterial chemoembolization/embolization, and liver transplantation. Systematic chemotherapy and biotherapy, such as that with somatostatin analogue and interferon- $\alpha$ , are used for recurrence after surgery. The precise surgical techniques for enucleation of the tumor and spleen-preserving distal pancreatectomy are described.

### Endocrine Physiology

Pancreatic neuroendocrine tumours (pNETs) represent 1 to 2% of all pancreatic neoplasm with an increasing incidence. They have a varied clinical, biological and radiological presentation, depending on whether they are sporadic or genetic in origin, whether they are functional or non-functional, and whether there is a single or multiple lesions. These pNETs are often diagnosed at an advanced stage with locoregional lymph nodes invasion or distant metastases. In most cases, the gold standard curative treatment is surgical resection of the pancreatic tumour, but the postoperative complications and functional consequences are not negligible. Thus, these patients should be managed in specialised high-volume centres with multidisciplinary discussion involving surgeons, oncologists, radiologists and pathologists. Innovative managements such as “watch and wait” strategies, parenchymal sparing surgery and minimally invasive approach are emerging. The correct use of all these therapeutic options requires a good selection of patients but also a constant update of knowledge. The aim of this work is to update the surgical management of pNETs and to highlight key elements in view of the recent literature. The only effective medication for functional pancreatic endocrine neoplasms in general is a long-acting somatostatin analog (eg, octreotide). Somatostatin analog treatment can improve symptoms and quality of life in all the functional pancreatic endocrine neoplasms except somatostatinoma