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Perspective

# Pathophysiology of Duodenal Pancreatic Heterotopia

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## DESCRIPTION

Pancreatic Heterotopia (PH) is defined as ectopic pancreatic tissue that exists outside of the normal pancreas, as well as its vasculature and duct system. The majority of the time, PH is discovered unintentionally through histological analysis. The goal of this study was to assess the clinical presentation of a heavy particular-center of duodenal PH cases. Pancreatic Heterotopia (PH) refers to pancreatic tissue that lacks an anatomical or circulatory connection to the pancreas, a condition first described by Jean-Schultz in 1729. The ectopic pancreatic tissue has its own blood supply and duct system. Although it can appear anywhere in the GIT, it is most commonly found in the upper GIT. Common locations include the duodenum (93.6%), stomach (24-38%), jejunum (0-27%), and meckel's diverticulum (2-6.5%). According to the most popular theory for the cause of PH, the ectopic tissue separates from the pancreas during foetal rotation and the union of the dorsal and ventral pancreatic buds (misplacement theory). If one is to have a clinical understanding of PH, it is critical to recognise that any disorders that originate in the actual pancreas can also manifest in heterotopic tissue.

We looked for cases of duodenal PH in our upcoming pancreatic database. All pancreatic and duodenal resections performed at the department of Visceral, Thoracic, and Vascular Surgery, university Hospital, TU Dresden, between January 2000 and October 2015, were included. The clinical symptoms, surgical techniques, and pathological results of each case were documented. The samples were stained with hematoxylin and eosin for histological analysis, and each sample was examined by a senior GI pathologist (DEA) to determine the elements of pancreatic tissue (including acini, ducts, and islets of Langerhans). PH was classified using Heinrich's categorization. In PH Types I, II, and III, acini, ducts, and endocrine islet cells are present, whereas pancreatic ducts are the only component of PH Type III. If the surgery was directly indicated for PH-associated pathologies, PH was classified as "symptomatic," whereas incidental PH diagnosed on postoperative histopathological examination was classified as "asymptomatic." We compared the two groups in terms of PH type, associated disease, and treatment.

### Malignant transformation of pancreatic heterotopia

Several studies have shown that any disease of the ordinary pancreas, such as acute and chronic pancreatitis, pseudocystic changes, or even malignant transformation to adenocarcinoma or acinar cell carcinoma, can occur in the heterotopic tissue. The current findings are consistent with these findings, as two out of 67 PH patients (2.9%) developed adenocarcinoma from malignant transformation of heterotopic pancreatic tissue. The incidence of malignancy due to heterotopic pancreatic tissue is 0.7%, making it extremely rare. They looked at the frequency of malignant transformations in 146 PH cases from 1975 to 1991, including surgical and autopsy specimens. Between 1970 and 1997, PH of the gastrointestinal tract were diagnosed with adenocarcinoma. Malignancy is thus a differential diagnosis that should be ruled out. Furthermore, histopathological examination of the resected specimens of the 11 symptomatic patients in the current study revealed chronic pancreatitis in seven cases (63.6%) and a duodenal tumour (adenoma) in two cases (18%) with no signs of chronic pancreatitis or malignancy. Surprisingly, no cystic lesions or NET from a duodenal PH were found in our symptomatic subgroup. Furthermore, no specific Heinrich's type was linked to symptoms or cancer.

## CONCLUSION

Duodenal PH is a very difficult to diagnosis, and the majority of patients are asymptomatic. Histological examination of surgical specimens resected for various pathologies is the most common method of diagnosing duodenal PH. Nonetheless, the current findings suggest that nearly all diseases of the genuine pancreas can manifest in heterotopic pancreatic tissue. As a result, depending on the current disease, different symptoms may appear, leading to a different diagnosis. When a duodenal lesion is discovered, ectopic duodenal pancreatic tissue should be considered in the differential diagnosis.

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