

## Solid pseudopapillary neoplasm of the pancreas. Case report.

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### ABSTRACT

**Introduction:** Solid pseudopapillary neoplasm of the pancreas (SPN) is a rare, low-grade malignant tumour that accounts for approximately 1–3% of all exocrine tumours. It usually occurs in teenagers or young women below 40 years. Most SPNs are asymptomatic or minimally symptomatic and incidentally found by imaging. The most common clinical symptoms are abdominal pain and abdominal tumour.

**Case presentation:** A 41-year-old woman with morbid obesity and type 2 diabetes was admitted to the hospital with upper abdominal pain, vomiting, and diarrhoea. The ultrasound found a cystic lesion in the tail of the pancreas. Subsequent MRI examination revealed polycyclic litho cystic tumour 63x 52 mm, 72mm c-c within the tail of the pancreas. Afterwards, the pancreatic tail with the tumour was laparoscopically resected. Histopathological evaluation of collected tumour tissues found a solid pseudopapillary neoplasm (SPN) in those pancreatic cells. Subsequently, the patient was prescribed an additional 2U of Lispro insulin before each and

Creon enzyme replacement therapy for the SPN. A month after the procedure, the patient was admitted to the ICU with sharp abdominal pain, abdominal cramps, and high inflammatory markers. She was successfully treated for acute pancreatitis and discharged after ten days. The patient is in stable condition and continues the Creon treatment.

**Conclusions:** SPN can be detected by ultrasound, computed tomography, magnetic resonance imaging, and positron emission tomography. SPN is a type of cancer with low malignancy potential due to the low metastasis and vascular invasion probability. Metastases to other organs have been reported in 15% to 20% of SPN. Distant metastases are typically found in the liver and lymph nodes, but the peritoneum, omentum, and lungs can also be involved. The treatment of choice is pancreatic surgery, including resection of distant metastases. The 10-year disease-specific survival rate is 96%.

**Keywords:** SPN, solid pseudopapillary neoplasm of the pancreas

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## **INTRODUCTION**

Solid pseudopapillary neoplasm of the pancreas (SPN) is a rare, low-grade malignant tumour that accounts for approximately 1–3% of all exocrine tumours. It usually occurs in teenagers or young women below 40 years [1,2].

The most common site for an SPN is the distal pancreas, followed by the retroperitoneal area. Histologically, SPN is composed of poorly cohesive epithelial cells and pseudopapillary structures that lack a specific line of pancreatic epithelial differentiation [2,3].

Most SPNs are asymptomatic or minimally symptomatic and incidentally found by imaging. The most common clinical symptoms are abdominal pain and abdominal tumour. Most patients have non-specific symptoms, including back pain, nausea, vomiting, fever, and jaundice [1,4].

## **CASE REPORT**

A 41-year-old woman with morbid obesity and type 2 diabetes was admitted to the hospital with upper abdominal pain, vomiting, and diarrhoea.

The patient was being treated with Liraglutide for obesity and type 2 diabetes for three months. She had been under MTX treatment for psoriatic arthritis for 1.5 years.

The patient was a chronic smoker and underwent gall bladder resection eleven years prior.

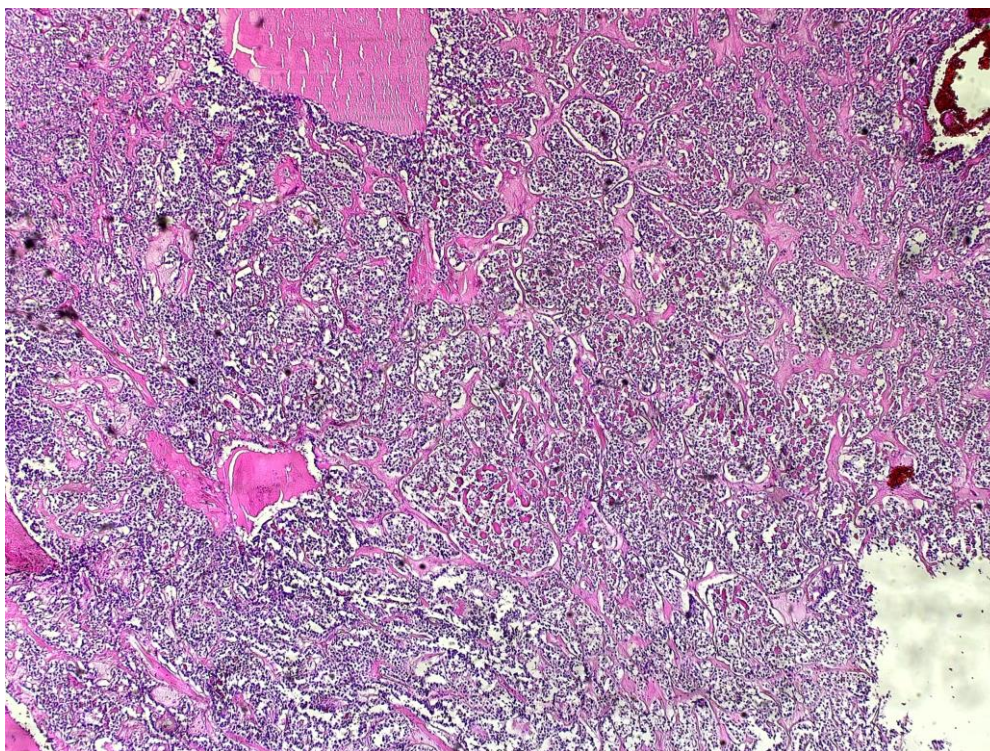
The ultrasound found a cystic lesion in the tail of the pancreas. Subsequent MRI examination revealed polycyclic litho cystic tumour 63x 52 mm, 72mm c-c within the tail of the pancreas. No other abnormalities were described. Afterwards, the pancreatic tail with the tumour was laparoscopically resected.

Histopathological evaluation of collected tumour tissues found a solid pseudopapillary neoplasm (SPN) in those pancreatic cells.

Immunohistochemical assay indicated that the tumour was positive for CD10, CD34, CD31, Cyclin-D1,  $\beta$ -catenin, and Ki67-1%. Subsequently, the patient was prescribed an additional 2U of Lispro insulin before each meal (to enhance diabetes treatment) and Creon (Pancreatin) enzyme replacement therapy for the SPN.

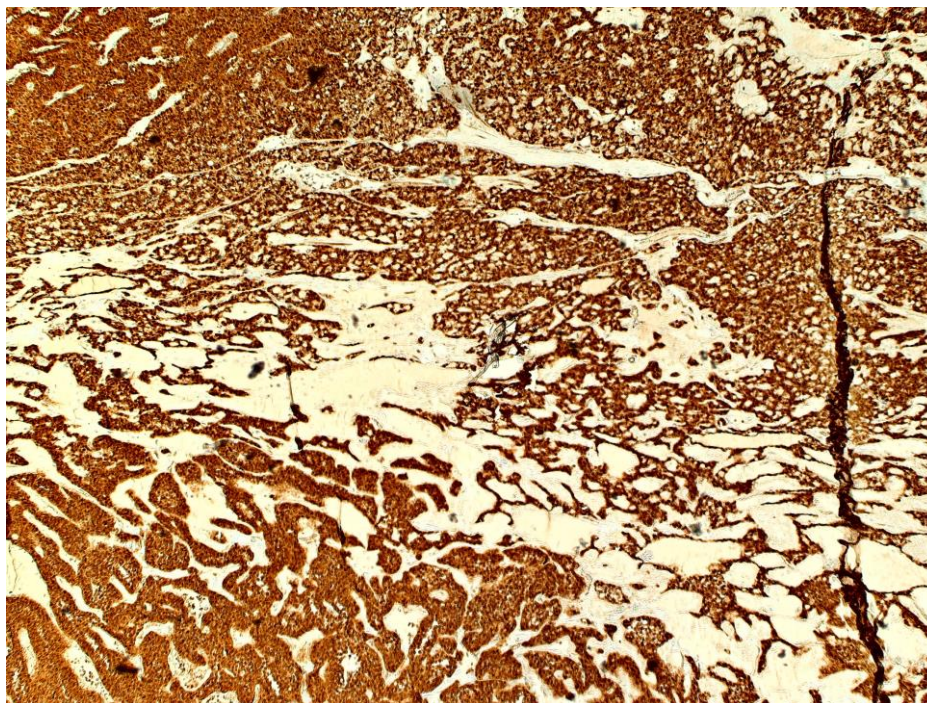
A month after the procedure, the patient was admitted to the ICU with sharp abdominal pain, abdominal cramps, and high inflammatory markers. She was successfully treated for acute pancreatitis and discharged after ten days.

A month later, a CT control scan indicated no abnormalities. The patient is in stable condition and continues the Creon treatment. Her diabetes is under treatment (with 5U Lispro insulin with meals and 5U Lantus insulin daily), and she undergoes regular medical check-ups.



**Figure 1.** Histological section H&E (x40)





**Figure 2.** Expression of Beta-catenina (x40)

## DISCUSSION

SPN can be detected by ultrasound, computed tomography, magnetic resonance imaging, and positron emission tomography. Currently, there are no specific immunohistochemical biomarkers for SPN. Clinically, several biomarkers are used in cancer diagnosis. Some of the most prominent are CD56, CD99, progesterone receptor (PR),  $\beta$ -catenin, and Ki67 [2,4] (it's worth noting the last two were positive on the case study subject). Recent studies have shown the nuclear expression of Lymphoid Enhancer-Binding Factor (LEF1), which exhibits high sensitivity and specificity for SPN and may be a valuable biomarker for diagnosis and differential diagnosis of SPN [2,5].

SPN is a type of cancer with low malignancy potential due to the low metastasis and vascular invasion probability. Metastases to other organs have been reported in 15% to 20% of SPN. Distant metastases are typically found in the liver and lymph nodes, but the peritoneum, omentum, and lungs can also be involved [6,7].

The treatment of choice is pancreatic surgery, including resection of distant metastases. Patients with SPN typically have an excellent prognosis after surgery - more than 95% of patients with SPN limited to the pancreas are cured by complete surgical excision. The 10-year disease-specific survival rate is 96% [4,8].

SPNs are prone to late relapse; therefore, appropriate monitoring of relapse and metastasis is required, particularly in patients with high-risk cancers.

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## Conflicts of interest

The authors have declared no conflict of interest

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