



Oncology

A case of solid pseudopapillary neoplasm preoperatively diagnosed as left renal tumor

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ABSTRACT

Solid pseudopapillary neoplasm is a rare disease that accounts for approximately 2% of pancreatic neoplasms, and the treatment is complete resection of the tumor. We experienced a case preoperatively diagnosed as a left renal tumor with pancreatic invasion and histologically diagnosed with solid pseudopapillary neoplasm of the pancreas. The purpose of this case report is to illustrate the importance of differentiating solid pseudopapillary neoplasm in patients who present a left renal tumor with pancreatic invasion.

Introduction

Solid pseudopapillary neoplasm (SPN) is a rare disease accounting for approximately 2% of pancreatic neoplasms and is frequently reported in young women under 40 years of age.^{1,2} The treatment is complete resection of the tumor.³ Adjacent organ invasion is reported in only 2.6% of cases, and SPN patients who underwent a distal pancreatectomy combined with left nephrectomy were rarely reported.^{2,3}

The purpose of this case report is to illustrate the importance of differentiating SPN in patients who present a left renal tumor with pancreatic invasion. To the best of our knowledge, we report the first case of SPN preoperatively diagnosed with a left renal tumor.

Case presentation

A 76-year-old woman presented to the previous hospital with left hypochondriac pain. Abdominal contrast-enhanced computed tomography (CT) showed a 90 mm left renal tumor with pancreatic invasion, with progressive uptake of contrast (Fig. 1, Fig. 2). Lymph node involvement and distant metastases were not observed. No obvious abnormality was found in the blood count and biochemical tests. The patient was referred to our department. The patient underwent a renal tumor biopsy and was diagnosed with a papillary tumor. Then, a left nephrectomy with distal pancreatectomy and splenectomy were performed under the diagnosis of cT4 renal cell carcinoma. The operation time was 217 minutes. A strong continuity existed between the pancreas

and the tumor. Microscopically, the tumor tissue showed a corded or rosette-like arrangement; immunostaining showed positive for β -catenin and CD10. E-cadherin and chromogranin were negative (Fig. 3). Thus, the tumor was pathologically diagnosed as SPN of the pancreas. The tumor directly invaded to renal parenchyma grossly, but there was no diffuse invasion to the kidney except for peritumoral adipose tissue microscopically. The postoperative period was uneventful. The patient was discharged on the 16th day postoperatively. No obvious recurrence has been observed in the 6 months follow-up.

Discussion

SPN is a rare but recently increasing tumor, with approximately 90% of cases reported in women.^{2,4} SPN presents with nonspecific symptoms such as nausea, vomiting, and jaundice present when the neoplasm compresses the pancreas; the neoplasm is incidentally detected in 15% of patients.³

The neoplasm is well-circumscribed, with varying degrees of internal hemorrhage and cystic degeneration, and sometimes associated with calcification.¹ It is predominantly found in the tail of the body of the pancreas.¹ On CT, calcifications and enhancing solid areas appear in the periphery of the neoplasm.¹ On magnetic resonance imaging (MRI), a mixture of high and low signal intensity presents on T1 and T2-weighted images.³

SPN is pathologically classified as a low-grade malignant neoplasm (2019 World Health Organization classification). Distant metastasis and

Abbreviations: SPN, solid pseudopapillary neoplasm; CT, computed tomography; MRI, magnetic resonance imaging.

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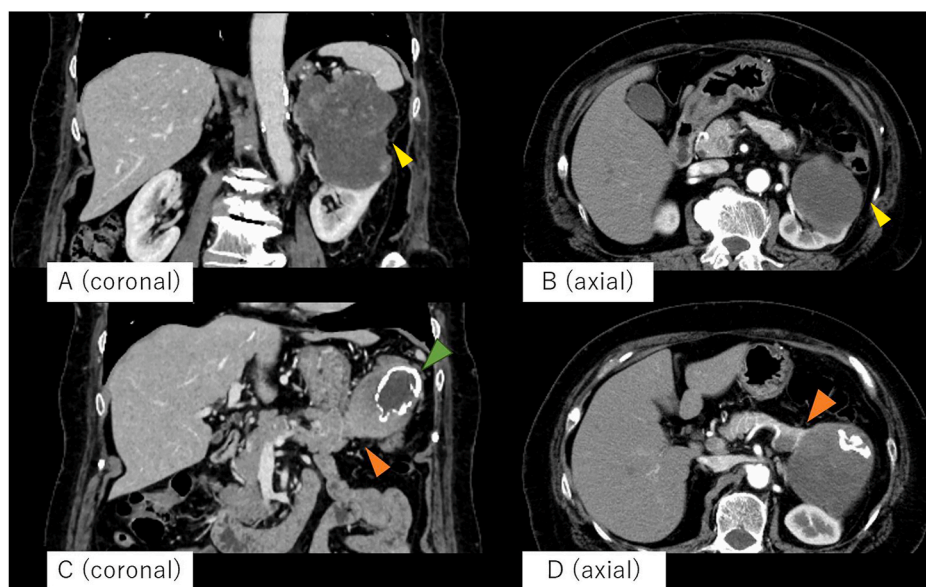


Fig. 1. Contrast-enhanced computed tomography of the tumor. The maximum tumor diameter was 9cm (A)(B)(yellow arrowhead). The tumor seems to be invaded to the pancreas (C)(D)(orange arrowhead). Calcification was observed (green arrowhead). (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

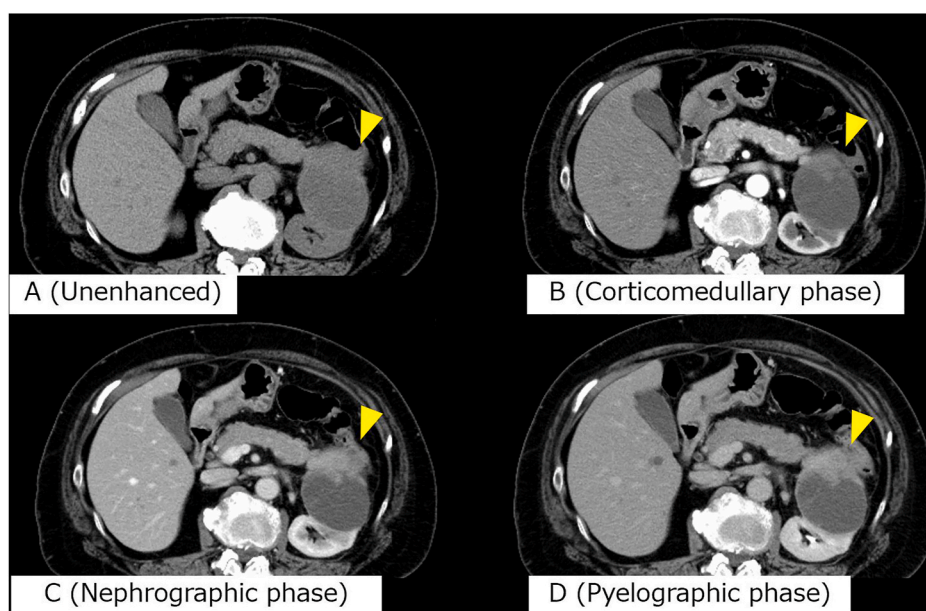


Fig. 2. Dynamic study of the contrast-enhanced computed tomography of the tumor. The tumor showed progressive uptake of contrast (yellow arrowhead). (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

adjacent organ invasion can occur in 15% of cases, so long-term follow-up is necessary.¹ The most common site of distant metastasis is the liver. The criteria for malignancy have been proposed in several studies. According to the multicenter analysis, the tumor diameter of more than 80 mm and microscopic findings such as cellular atypia, capsular invasion, and peripancreatic adipose tissue invasion were considered the criteria for malignancy.² The present case showed a tumor size of 90 mm in diameter and peritumoral adipose tissue invasion, which indicate a high risk of recurrence.

In the present case, the patient was diagnosed with papillary renal cell carcinoma preoperatively because the tumor showed progressive uptake of contrast on CT and was pathologically diagnosed as a papillary tumor on biopsy. The imaging of the present case is consistent with the

characteristics of SPN in several points: association with hemorrhage, calcification at the periphery of the tumor, contrast effects. On the other hand, papillary renal cell carcinoma also has calcification in 7% of cases and internal tumor heterogeneity in 15% of cases. It is considered that similarity of imaging features between two diseases affected preoperative diagnosis.⁵ Conversely, the age of onset and graphical adjacent organ invasion were not consistent with typical SPN. Performing preoperative MRI might have provided more information for the accurate diagnosis.

Conclusion

We experienced a case of SPN, which was preoperatively diagnosed

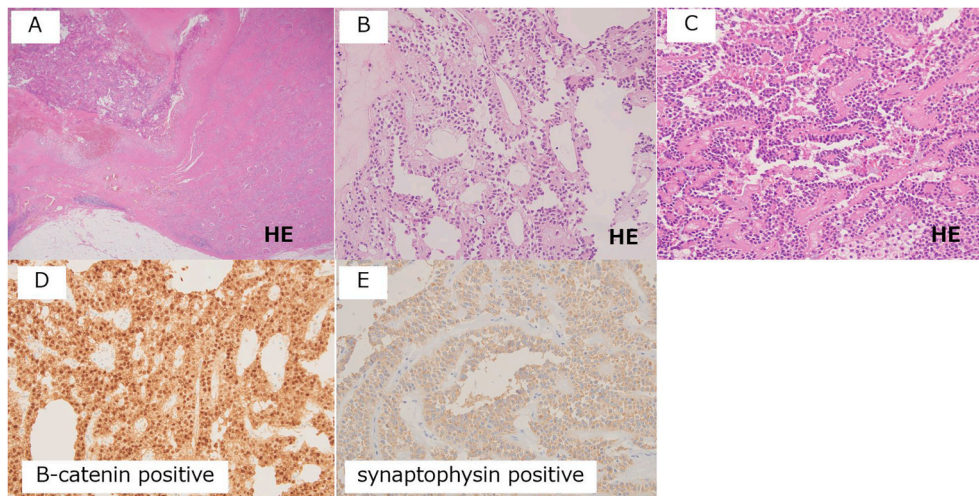


Fig. 3. Solid pseudopapillary neoplasm and the left kidney is well margined (A). Preoperative tumor biopsy revealed papillary tumor (B), which was also observed in resected specimen (C). B-catenin and synaptophysin were positive (D)(E). Abbreviation: HE (Hematoxylin-Eosin stain).

as renal cancer with pancreatic invasion. When a left renal tumor showed pancreatic invasion on imaging, SPN may be one of the differential diagnoses. Long-term follow-up is necessary for SPN because late recurrence has been reported.

Financial conflict of interest

None.

Declaration of competing interest

None.

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