

Late metachronous isolated pancreatic metastasis from renal cell carcinoma mimicking a pancreatic neuroendocrine tumor

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Dear Editor,

Approximately 20% of patients with renal cell carcinoma (RCC) have metastatic lesions at initial diagnosis, and almost half of the patients experience recurrence after complete resection of the primary tumor (1). The lungs are the most common site for the metastasis of RCC, followed by the bone, liver, and brain. Metastatic pancreatic tumors are rare, accounting for 2% of all pancreatic malignant tumors (2). Isolated pancreatic metastasis from RCC is extremely rare and may occur many years after resection of the primary RCC.

A 68-year-old man having a history of RCC treated with laparoscopic left radical nephrectomy 8 years ago

and, thus far, no evidence of recurrence was referred to our department for the evaluation of a small pancreatic mass that was incidentally detected. The patient did not have any symptoms and showed unremarkable laboratory results. Magnetic resonance imaging for routine surveillance showed an arterial enhancing lesion, measuring approximately 0.8 cm, with T2 high-signal intensity in the pancreatic tail (Figure 1a, b). EUS demonstrated a well-defined hypoechoic mass, measuring 1.2 cm, on the pancreatic tail without lymph node abnormality (Figure 2a). After Sonazoid® (Daiichi-Sankyo, GE Tokyo, Japan) injection, the lesion showed early vascular enhancement compared with the surrounding pancreatic tissues, consistent with the presentation of pancreatic neuroendocrine tumor (PNET) (Figure 2b). Therefore, EUS-FNA was

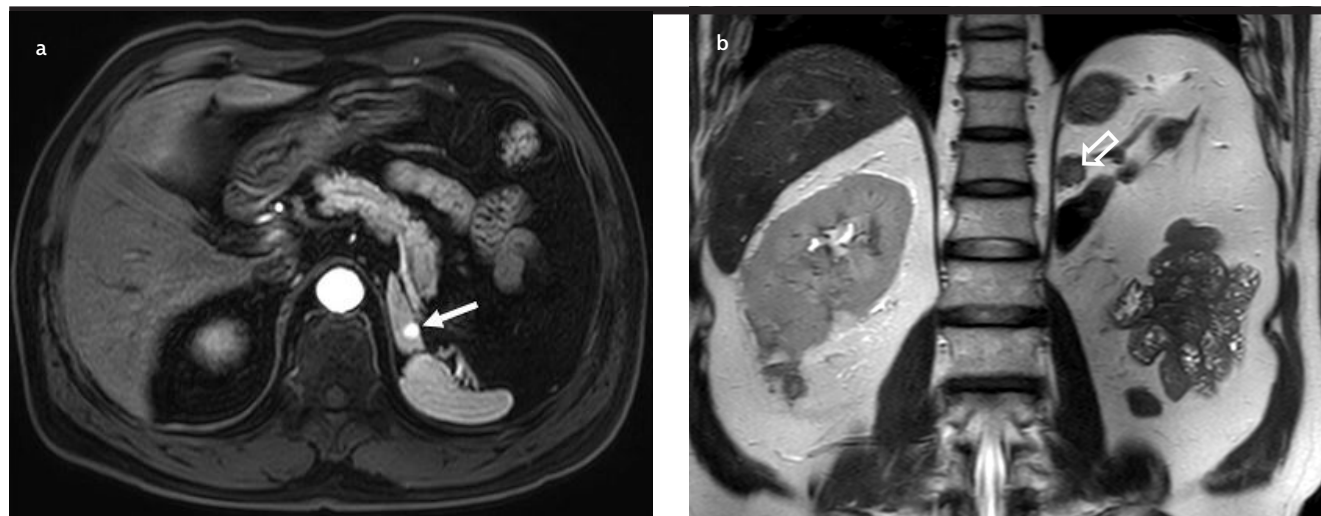


Figure 1. a, b. Magnetic resonance imaging showing an intense, enhanced small lesion (white arrow) on the arterial phase of the fat-suppressed T1-weighted gradient echo image in the tail of the pancreas (a); Coronal T2 weighted image showing high-signal intensity (open white arrow) in the pancreatic tail (b)

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performed using a 22-gauge needle (Figure 2c). Microscopic examination revealed acinar architecture of the cells with clear cytoplasm (Figure 3a), and the cells were immunoreactive for anti-RCC antibody (Figure 3b). Based on the histological and immunohistochemical findings, a diagnosis of metastatic RCC was established. The patient refused surgical resection; therefore, he was administered a tyrosine kinase inhibitor (sunitinib).

B-mode EUS showed that all metastatic lesions to the pancreas and PNET were hypoechoic with homogeneous-echo pattern and regular margins. However, pancreatic adenocarcinoma tends to have an ill-defined hypoechoic or heterogenous-echo pattern (3,4). Contrast harmonic EUS (CH-EUS) show hypovascularization for pancreatic adenocarcinomas and iso-/hyper-enhanced pattern during the early arterial phase of PNET, compared with the surrounding pancreatic parenchymal tissue (3,4).

A few studies have also reported the efficacy of CH-EUS in detecting metastasis to the pancreas. Pancreatic metastases from the colon or breast show a hypo-enhanced pattern, whereas lesions from RCC or lymphoma show an iso-/hyper-enhanced pattern (5). Thus, diagnostic challenges still exist in using various imaging modalities to differentiate between PNET and isolated pancreatic metastasis from RCC. Therefore, although there is a risk of tumor seeding, EUS-FNA should be considered an important modality for pathological diagnoses for small pancreatic masses. Histologically, a lipid-rich variant of PNET may mimic metastatic RCC. However, PNETs express neuroendocrine markers, such as synaptophysin, chromogranin A, and CD56, and do not react with anti-RCC antibodies. In our case, positive immunohistochemical staining with an anti-RCC antibody was observed, and therefore, pancreatic metastasis from RCC was confirmed.

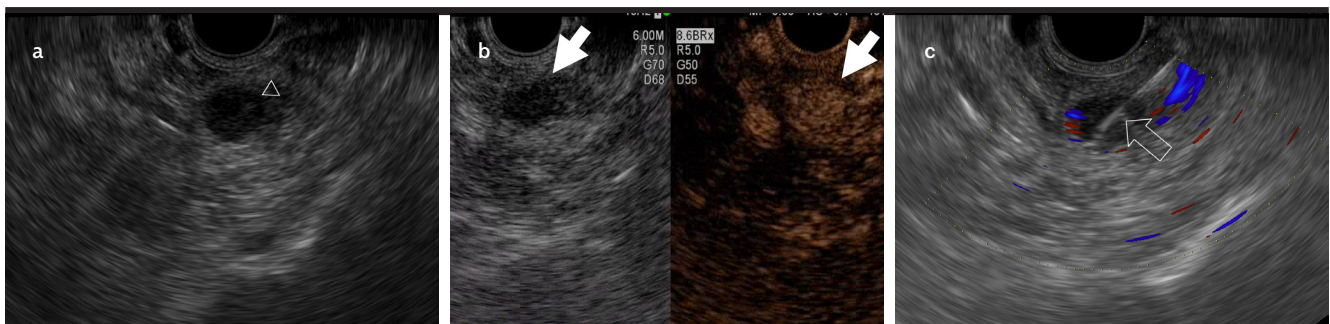


Figure 2. a-c. Endoscopic ultrasound showing a well-circumscribed, homogeneous, hypoechoic small mass (open arrowhead) in the pancreatic tail (a); and hypervascularity (thick white arrows) at 16 s after contrast injection (b); a 22-G fine-needle aspiration needle (open white arrow) entering the well-defined low echoic lesion is visible (c)

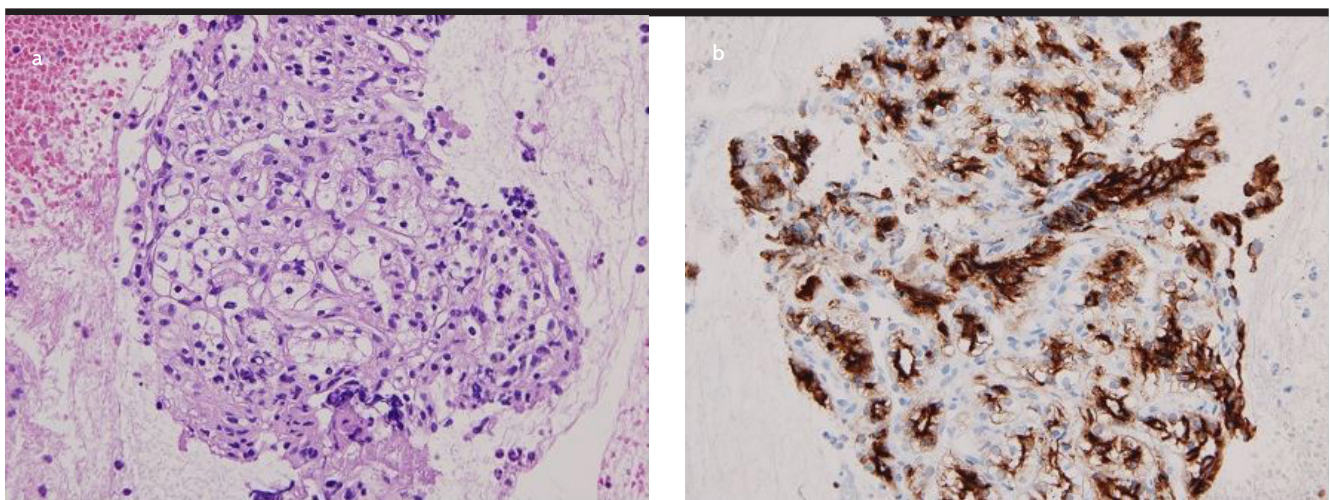


Figure 3. a, b. Tumor cells with characteristically clear cytoplasm showing acinar architecture (hematoxylin and eosins stain, 400X) (a); the tumor cells are strongly positive for anti-RCC antibody (400X) (b)

In conclusion, we believe that metachronous isolated pancreatic metastasis from RCC should be considered in the differential diagnosis for patients with a pancreatic tumor and a history of RCC. EUS-FNA is the recommended diagnostic method for such detection.

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