## Case 110

# Eurorad••

### Solitary pancreatic metastasis of renal cell carcinoma. CT, MR findings with pathologic correlation

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DOI: 10.1594/EURORAD/CASE.110 ISSN: 1563-4086 Section: Abdominal imaging Imaging Technique: CT Imaging Technique: MR Case Type: Clinical Cases Authors: N. Gandolfo, O. Serrato, A. Dellachà, D. Venerucci, G. Fiorini Patient: 61 years, male

#### **Clinical History:**

We decribe a case of solitary pancreatic metastasis of renal cell carcinoma. The patient underwent CT and MR examinations; the imaging features suggested a diagnosis of pancreatic renal cell metastasis. Secondary pancreatic tumors should be considered in those patients who present with a solitary pancreatic mass and who have a history of previous extrapancreatic malignancy.

#### **Imaging Findings:**

A 61-year-old male was admitted to our hospital for epigastric pain.Past history: Left nephrectomy 11 years ago for renal cell carcinoma. Physical examination revealead slight tenderness in the epigastrium. No evidence of hepatoslpenomegaly. Laboratory tests were normal. Presence of abundant gas within the stomach did not allow a complete and satisfactory US study of the upper abdomen. The patient underwent abdominal CT (both before and after contrast medium administration) and MR imaging of upper abdomen. **Discussion:** 

We report a case of solitary pancreatic metastasis of renal cell carcinoma in absence of local renal recurrence and other distant metasatses. The pancreas is an uncommon site for metastases from renal cell carcinoma (RCC). Metastases may occur many years after the initial diagnosis and treatment of the primary tumor. In most cases, pancreatic metastases occur as part of widespread nodal and visceral involvement [1], and there is thus evidence of metastatic disease in the body. The prevalence of metastatic involvement of the pancreas is not well known. Carcinoma of the breast, lung and thyroid gland are the most common primary neoplasms responsible for pancreatic metastases. The diagnosis of solitary pancreatic metastasis of RCC suggests surgical resection [2]; for this reason diagnostic imaging can play an important role in the management of these patients. The differential diagnosis of a pancreatic nodule includes pancreatic ductal adenocarcinoma and islet cell tumors. It must be noted that, in the early arterial-phase, pancreatic ductal adenocarcinoma is commonly hypovascular due to its desmoplastic reaction [3]; islet cell tumors generally show a hypervascular nature but have not a pseudocapsule [4]. Hypervascularity of the mass and detection of perilesional pseudocapsule [5] in the setting of history of renal cell carcinoma - that is a hypervascular tumor - suggested the diagnosis of metastatic disease to the pancreas. The patient underwent distal pancreatectomy and histological examination confirmed renal cell metastasis. Microscopic evaluation showed the presence of thick fibrous tissue (Fig 3) interposed between metastasis and pancreatic parenchyma. Secondary pancreatic tumors should be considered in those patients who present with a solitary pancreatic mass and who have

a history of previous extrapancreatic malignancy.

Differential Diagnosis List: Solitary pancreatic metastasis of renal cell carcinoma.

Final Diagnosis: Solitary pancreatic metastasis of renal cell carcinoma.

#### **References:**

Ackerman LV.

Pancreas and ampullary region.

In Ackerman's Surgical Pathology (eighth edition). Mosby, St. Louis , pp 999 (1996).

Butturini G, Bassi C, Falconi M, Salvia R, Caldiron E, Iannucci A, Zamboni G, Graziani R, Procacci C, Pederzoli P. Surgical treatment of pancreatic metastases from renal cell carcinomas.

Dig Surg 1998;15(3):241-6. (PMID: 9845592)

Choi BI, Chung MJ, Han JK, Han MC, Yoon YB. Detection of pancreatic adenocarcinoma: relative value of arterial and late phase of spiral CT.

Abdom Imaging 1997; 22(2):199-203. (PMID: 9013535)

Van Hoe L, Gryspeerdt S, Marchal G, Baert AL, Mertens L. Helical CT for the preoperative localization of islet cell tumors of the pancreas: value of arterial and parenchymal phase images.

Am J Roengtenol 1995; 165(6)1437-1439. (PMID: 7484581)

Takahashi S, Ueda J, Furukawa T, Higashino K, Tsujihata M, Itatani Hn Narumi Y, Nakamura H. Renal cell carcinoma: preoperative assessment for enucleative surgery with angiography, CT, and MRI

J Comput Assist Tomogr 1996; 20(6):863-870. (PMID: 8933783)

### Figure 1



**Description:** Unenhanced helical computed tomography (CT) shows a solitary, small hypodense rounded mass with well-defined margins within pancreatic tail. Hyperdense rim (arrow heads) is appreciated at the periphery of the mass. **Origin:** 



**Description:** Enhanced helical CT, acquired in arterial-phase shows marked contrast medium uptake. Splenic vein is of normal morphology and the fat plane between the vessel and the pancreas is prevented. **Origin:** 



**Description:** Enhanced helical CT, acquired in arterial-phase at a lower level than Fig 1b confirms left nephrectomy. **Origin:** 

b



**Description:** Enhanced helical CT, acquired in portal venous-phase shows early wash-out of the mass, which now appears hypodense. **Origin:** 

### Figure 2



**Description:** Magnetic resonance (MR) of the pancreas, spin-echo T1-weighted image [TRms/TEms = 600/12] shows a hypointense mass characterized by peripheral markedly hypointense rim (arrow heads). **Origin:** 



**Description:** MR of the pancreas, turbo spin-echo T2-weighted image [TRms/TEms = 5500/140] shows a relative hyperintensity of the mass compared with the surrounding pancreatic parenchyma. There is ectasia of the main pancreatic duct of the tail. **Origin:** 



**Description:** MR of the pancreas, turbo spin-echo T2-weighted image contiguous to Fig 2b confirms the hypointense perilesional rim (arrow heads), compatible with a pseudocapsule. **Origin:** 

### Figure 3



**Description:** Histologic examination of the surgical specimen. Hematoxylin-eosin stain; Topographic view x100: renal cell carcinoma metastasis (M) to the pancreas (P). Fibrosclerotic tissue (asterisks) is interposed between M and P. Insert x250: delicate fibrovascular cores are lined by cells with clear cytoplasm (pancreatic metastasis of renal cell carcinoma, clear cell type). **Origin:**