A Rare Case of Metastatic Renal Cell Carcinoma to Pancreas and Adrenal Glands

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Introduction

* Pancreatic metastasis from another primary site is a rare phenomenon that consists of a small number of all pancreatic cancers.

* Malignancies with tendencies to metastases to the pancreas are lung, breast, and colorectal.

* Recently, more case reports have shown a predisposition of renal cell carcinoma (RCC) metastasis to pancreas. We are presenting a case of metastatic renal cell carcinoma to pancreas 4 years after nephrectomy.

Case Presentation

We present a 54-year-old female with a history of hyper-cholesterolemia, depression, tobacco abuse, and bilateral hip bursitis who presented with worsening left hip and flank pain. The patient experienced urinary urgency and incontinence, but denied any change in appetite, weight loss, urinary frequency, dysuria or hematuria. She underwent MRI of the hip and found a 10cm mass within the left kidney. The left renal mass was consistent of renal clear cell carcinoma and she had a left hand assisted laparoscopic nephrectomy in 2007.

On surveillance CT scan in 2011, patient was found to have a new 9 mm hyperdense lesion at the head of the pancreas and a new 2.9 x 2.6 cm lesion in the right adrenal gland. PET scan showed low FDG avidity to the right adrenal mass and no increased FDG avidity in the pancreatic lesion. With concern for metastatic lesions, patient underwent EUS to biopsy the suspicious hypoechoic lesions in the pancreas. The biopsy of pancreatic body contained small fragments of tumor cells with clear cytoplasm. The tumor cells were strongly positive for CD10, EMA, RCC, and vimentin, which were consistent with metastatic renal cell carcinoma. CT guided needle biopsy of right adrenal gland was also consistent with renal clear cell carcinoma.

Discussion

* RCC metastasis to the pancreas is uncommon and often asymptomatic in presentation. Patients may present with nonspecific symptoms such fatigue and weight loss similar to primary pancreatic cancer at early stage. As the disease progress, patients might experience abdominal pain, jaundice or pancreatitis due to obstruction. Since symptoms are subtle, detection of pancreatic metastases from RCC is often an incidental finding on imaging.

* The interval between primary RCC and the spread to pancreas varies widely after nephrectomy. The median duration is 10.5 +/- 6.5 years following a nephrectomy (2). It is therefore important for close monitoring with imaging to allow early detection of metastasis. CT, MRI and EUS are the common modalities used to detect pancreatic metastases and assist in treatment management.

* Several mechanisms of RCC metastasis to pancreas have been proposed. Lymphogenous spread through tumor infiltration of retroperitoneal lymph node with retrograde flow to the pancreas and hematogenous spread from collateral vessels of the vascular renal carcinoma to the pancreas are two possible mechanisms proposed by researchers. However, the relationship between the site of primary renal cell carcinoma and the isolated pancreatic metastasis remains difficult to explain by these mechanisms. Further research is needed to determine why renal cell carcinoma is showing affinity to pancreas tissue.

Conclusion

* RCC metastasis to the pancreas has subtle presentations that often lead to delay in diagnosis and treatment. Prognosis is poor at late stage and it is therefore important to do surveillance imaging to detect suspicious lesions after nephrectomy.

* Further research is required to determine the mechanism of renal cell carcinoma spread to pancreatic tissue.

References: