

Case Report

Solitary Pancreatic Metastasis from Renal Cell Carcinoma 6 Years after Nephrectomy

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Abstract

Metastatic cancer to the pancreas is rare and accounts for less than 2% of all pancreatic malignancies. Renal cell cancer, malignant melanoma, lung, colon and breast carcinoma are among the few tumors known to metastasize to the pancreas. The pancreas is a rare site of solitary metastasis, but it is often involved in diffuse metastatic disease. We report a case of a female patient with a solitary mass in the neck of the pancreas following right nephrectomy performed 6 years previously for renal cell carcinoma (RCC). An endoscopic ultrasound (EUS) revealed a well-defined lesion in the neck of the pancreas. Patient underwent EUS-guided fine-needle aspiration and cytopathology confirmed the diagnosis of a metastatic RCC. Solitary pancreatic metachronous metastasis from RCC may rarely occur. The interval between nephrectomy and pancreatic metastasis may be long.

Keywords: renal cell carcinoma; solitary pancreatic metastasis; endoscopic ultrasound-guided fine needle aspiration

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INTRODUCTION

Metastatic lesions to the pancreas are rare and account for less than 2% of all pancreatic malignancies.¹ Besides other tumors such as colon or lung cancer, in particular renal cell carcinomas (RCC) tend to metastasize to the pancreas, representing 0.25%-3% of all resected specimens.² Pancreatic metastases are usually detected during the follow-up of patients having undergone a previous nephrectomy for RCC.

Pancreatic metastases from RCC present synchronously with widespread metastatic disease in 12% of cases and therefore surgical resection may not be favorable.³ However, the overall outcome of a solitary metastasis in the pancreas treated with resection is promising with the 5 year survival rate ranging from 43% to 88%.^{4,11}

The biology of metastatic RCC is heterogeneous. Recurrences may present within 1 year of nephrectomy with rapid progression of the disease. On the other hand, tumor-free intervals of more than 20 years have been recorded with a slow growth pattern, especially for pancreatic metastasis.⁴

CASE REPORT

This paper report a case of a 48-year-old female patient who had a history of right sided renal carcinoma 6 years ago treated by radical right nephrectomy. No post-operative chemotherapy was given. She remained well until recently when she complained of dull aching epigastric pains referred to the back. On examination, she seemed to be well. Abdominal examination showed the scar of right nephrectomy with mild epigastric tenderness, but no organomegaly or enlarged lymph nodes. Abdominal ultrasound showed a pancreatic neck mass, which was confirmed by computed tomography (CT) showing a well-defined vascular mass at the neck of pancreas, measuring 2.6 cm × 2.6 cm. Endoscopic ultrasound (EUS) (Pentax EG3830UT/Hitachi EUB-7000) confirmed the previous data, no peripancreatic or celiac lymphadenopathy (Fig. 1). The mass was showed elastic score 4 (Fig. 2).⁵ EUS-guided fine-needle aspiration was carried out using an Echotip 22G biopsy needle, four passes. On-site cytologic examination of the smear slides and cell block preparation revealed the presence of normal pancreatic ducts lined by bland cells having bland basal nuclei beside large malignant tumor cells having large hyperchromatic nuclei and abundant clear cytoplasm. No malignant tumor cells were infiltrating the normal pancreatic ductal cells (Figs. 3 and 4).

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Figure 1. A well-defined mass at the neck of pancreas as seen by endoscopic ultrasound

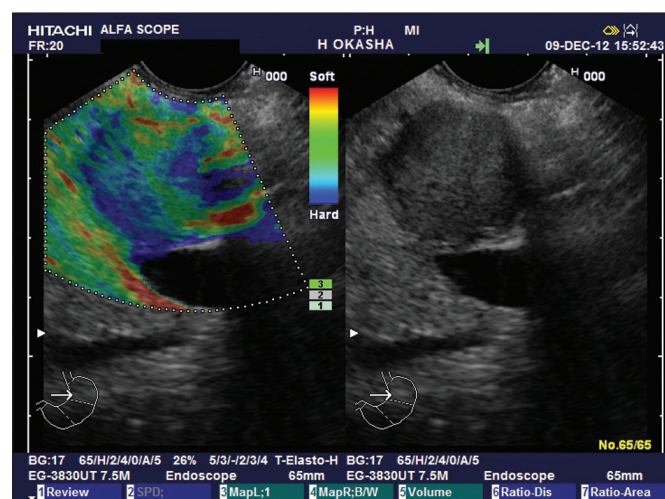


Figure 2. The pancreatic mass showing elasticity score 4

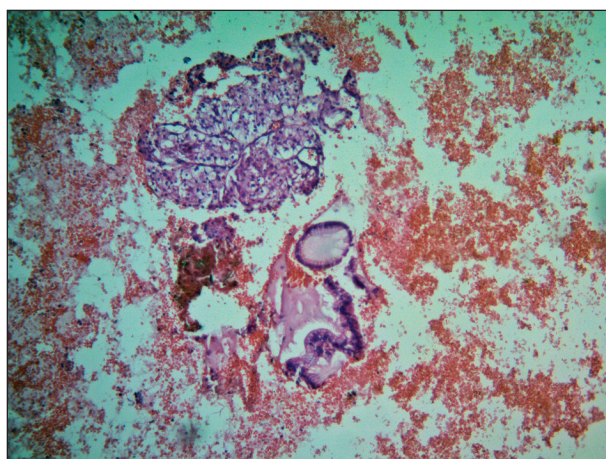


Figure 3. Pancreatic mass fine-needle aspiration cytology smear; group of malignant tumor cells having large pleomorphic hyperchromatic nuclei and clear vacuolated cytoplasm, with complete loss of polarity (Papanicolaou, ×HP)

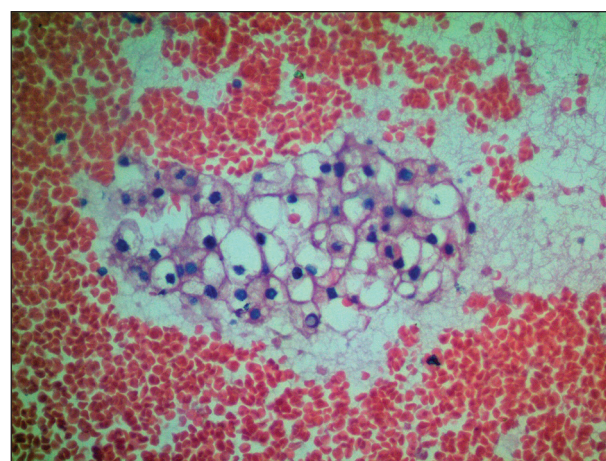


Figure 4. Pancreatic mass fine-needle aspiration cytology, cell block; group of malignant tumor cells having clear cytoplasm beside pancreatic ducts lined by columnar cells having bland basal nuclei (H and E, ×MP)

Immunostaining of the tumor cells for RCC marker and CK7 were positive. A final diagnosis of metastatic clear cell RCC of the neck of the pancreas was reached.

DISCUSSION

Clear cell RCCs are famous for their ability to metastasize to unusual sites, may be several years after resection of the primary tumor. Indeed, so-called late metastases (later than 10 years) are a relatively well-encountered phenomenon with renal cell cancers. There was a case report of pancreatic metastasis 23 years after nephrectomy for RCC.⁶

The pancreas is a rare site of solitary metastasis, but it is often involved in diffuse metastatic disease.^{7,8} In a large published series, metastasis from primary RCC to the pancreas made up from 0.25% to 3% of all resected pancreatic specimens.^{8,9} In a study comparing the incidence of pancreatic metastasis among 4955 adult autoptic specimens with

973 surgical specimens, the incidence of pancreatic metastasis in the autoptic specimens was 3.83% (190 cases) among which metastasis from RCC was 0.08% (4 cases). In contrast, even though the incidence of pancreatic metastasis in 973 resected specimens was similar (3.93%; 38 cases), the incidence of metastasis from RCC was 0.61%.⁴ However, RCC was the most common primary tumor leading to solitary pancreatic metastasis among the resected specimens.^{3,7}

Metastases may present many years after a nephrectomy.^{10,11} The mode of spread from the RCC to the pancreas may be through lymphatics or by hematogenous spread.

Abdominal ultrasonography and CT scan are reliable although the generally hypervascular image seen in CT could resemble that of an endocrine pancreatic tumor as primary pancreatic tumors tend to be hypovascular.^{12,13} Where available, EUS is now widely accepted as the test of choice for both imaging and sampling of pancreatic masses. It is particularly useful for evaluation of small masses, equivocal

cross-sectional imaging or for sampling of pancreatic masses, or after previously non-diagnostic biopsies.¹⁴ EUS also permits assessment of vascular invasion and lymph node invasion, which may aid in patient management and limit potential surgical morbidity and mortality. Lesions are typically rounded well-delineated masses, which are hypoechoic in comparison to adjacent pancreatic tissue.¹³⁻¹⁵

Resection of a pancreatic metastasis may involve a standard pancreaticoduodenectomy or a distal pancreatectomy depending on the location of the secondary deposit. Atypical resection of pancreatic metastasis from RCC, such as duodenum-preserving pancreatic head resection, middle pancreatectomy and enucleation of the tumor, has been adopted by some authors.^{9,11} The choice of a standard or an atypical surgical procedure is probably less important than a careful search for multiple metastases.⁹

Surgical treatment of isolated pancreatic metastasis from neoplasms other than RCC carries a poor prognosis as they signal the onset of disseminated metastatic disease.^{3,7} By contrast, the outcome of surgery for isolated pancreatic metastasis from RCC is clearly superior with a mean survival of 4 years and an actuarial 5 years survival ranging from 43% to 88%, which is even better than that of primary adenocarcinoma of the pancreas.^{3,9} Factors associated with a favorable prognosis include a long disease-free interval after resection of the primary tumor, a single metastatic deposit with central necrosis and complete excision of the secondary deposit with histologically negative margins.¹⁶ Others have reported that the tumor grade of the pancreatic metastasis correlated with the grade of the primary renal cell cancer and that tumor grade was a predictor of survival with a median survival of 41 months for grade 2 cancer and 10 months for grade 3 cancer.¹⁷

In summary, pancreatic metastases from RCC, although rare, are well-documented and may be the only site of metastasis. They may present many years after resection of the primary RCC and thus, should be looked for during the follow-up or in patients with upper abdominal symptoms. When possible, complete surgical resection offers the best chance of cure. Local recurrence or a new site of tumor development in the pancreas may be treated actively with a total pancreatectomy. Previously resected RCC metastasis at other sites should not discourage aggressive treatment of an isolated pancreatic secondary tumor. Surgical treatment of pancreatic metastasis from neoplasms other than RCC has a poor prognosis.

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