OLGU SUNUMU/CASE REPORT

Late pancreatic metastasis of renal cell carcinoma with absence of FDG-uptake in PET-CT

PET-BT’de FDG-tutulumu göstermeyen renal hücreli karsinomun geç pankreas metastazı

Elif Karadeli¹, Sermin Tok¹, Gürcan Erbay³, Mehmet Reyhan²

¹Başkent Üniversitesi, Tıp Fakültesi, Radyoloji Anabilim Dalı, ²Nükleer Tıp Anabilim Dalı, Adana, Turkey

Abstract

The primary tumors, which raise isolated pancreas metastases are frequently of renal origin, where colorectal cancer, melanoma, breast and lung cancers and sarcoma are the following causes of metastatic pancreas cancer. In this article, we present a case of pancreas-metastatic renal cell carcinoma with its radiological features, which did not exert anF-18 FDG-uptake in the whole-body positron emission tomography (PET).

Key words: Renal cell carcinoma, pancreatic metastasis, PET-CT.

INTRODUCTION

Renal cell carcinoma (RCC) lesions typically metastasize to lung, bones, liver and brain and less frequently to thyroid, subcutaneous fat issue and pancreas¹. Metastatic tumors consist about 2% percent of pancreas cancers. The primary tumors, which raise isolated pancreas metastases are frequently of renal origin, where colorectal cancer, melanoma, breast and lung cancers and sarcoma are the following causes of metastatic pancreas cancer². In this report, we present a case of pancreas-metastatic renal cell carcinoma with its radiological features, which did not exert anF-18 FDG-uptake in the whole-body positron emission tomography (PET).

CASE

A 55 years old female patient, who underwent nephrectomy due to a renal cell carcinoma on her left kidney 10 years ago, admitted to the department of general surgery with abdominal pain since last month. No pathological sign was encountered in her physical examination. Her laboratory findings were: Hb: 11.5 g/dL, AST: 39 IU/L, ALT: 23 IU/L, ALP: 120 IU/L, Amylase: 62 U/L. In the abdominal USG, the pancreas can not be evaluated due to gas distension and no pathological USG finding was witnessed in the patient who underwent left nephrectomy. However, in the iv-oral contrast abdominal CT, a dilation of the pancreatic channel was observed which extended from tail to head of the pancreas with an anteroposterior diameter of 6 mm.

A nodularity with an approximate size of 26 mm featuring contrast enhancement was observed at the level of the pancreatic head on the arterial phase images (figure 1). In the MR images, signs of pancreatic dilation were observed. A focal lesion...
suspicious of malignancy was witnessed at the uncinate process of the pancreas adjacent to duodenum, which demonstrated heterogeneous diffusion restriction, dense contrast uptake at the early arterial phase and a heterogeneous signal intensity (figure 2). F-18 FDG PET was performed to the patient, who underwent a previous surgery due to RCC. No pathological contrast uptake was witnessed in the PET-CT examination (figure 3). Whipple operation was performed in the department of general surgery and the pathological analysis outcome indicated an RCC metastasis.

DISCUSSION

RCC can metastasize to pancreas via both haematogenous and lymphatic routes, yet its direct metastatic spread to pancreas is rare. Commonly, a single and asymptomatic pancreas metastasis is observed. The metastasis frequency is 25% percent at the RCC diagnosis and 40% percent during the disease progress. An average interval of 6 years could be encountered between detection of the primary tumor and the metastatic lesion.

In our case, a 10 years gap had occurred between the pancreatic metastasis and the nephrectomy performed due to RCC, and the patient presented with abdominal pain at her recent admission. Three types of metastatic involvement were defined for the metastatic tumors of pancreas: Single localized nodule (50%-73%), diffuse pancreatic enlargement (%15-%44) and multiple pancreatic nodules (%5-%10). In the contrast-free CT, single lesions are generally hypodense relative to the normal pancreas; and in the contrast-enhanced CT, their contrast uptake occur commonly during the arterial phase.

In the MRI scanning, they present as hypointense at the T1A and heterogenously hyperdense at the T2A images, respectively. If the lesion has a large size, a rim can be seen around the lesion at the contrast images. Homogenous contrast uptake generally occurs in small lesions.
In our case, the iv-oral contrast abdominal CT examination revealed a prominent dilation of the pancreatic channel from the pancreatic tail to head and a nodularity with contrast enhancement at the level of the pancreatic head on the arterial phase images. Pancreatic dilation signs were also seen in MRI scanning. A focal lesion suspicious of malignancy was witnessed at the uncinate process of the pancreas adjacent to duodenum, which demonstrated heterogenous diffusion restriction, dense contrast uptake at the early arterial phase and a heterogenous signal intensity. Malignant cells exert an enhanced glucose consumption; and hence, the elevated glucose metabolism can be demonstrated via PET analysis. Although, the PET-CT could give negative results in primary and metastatic RCC lesions; and hence, CT findings shall be cautiously interpreted in patients with a history of RCC.

REFERENCES