Interesting Image

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The Utility of ^{18}F-FDG PET/CT in Detecting Multiple Metastases in Papillary Renal Cell Carcinoma

Papiller Renal Hücreli Karsinomda Multipl Metastaz Saptanmasında ^{18}F-FDG PET/BT'nin Yararı

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Abstract

The diagnostic performance of ^{18}F-fluorodeoxyglucose (^{18}F-FDG) positron emission tomography/computed tomography (PET/CT) for primary kidney tumors is limited. Nevertheless, ^{18}F-FDG PET/CT is valuable for staging renal cell carcinoma (RCC) when suspected metastases coexist, as one-third of patients with RCC have distant metastases upon diagnosis. Herein, we present a 53-year-old male patient with extensive ^{18}F-FDG-avid metastatic lesions and an ^{18}F-FDG-avid renal mass, which later revealed RCC.

Keywords: ^{18}F-FDG PET/CT, papillary renal cell carcinoma, metastasis, staging

Öz

Primer böbrek tümörlerinin tespitinde ^{18}F-florodeoksiglukoz (^{18}F-FDG) pozitron emisyon tomografisi/bilgisayarlı tomografinin (PET/BT) tanısal performansı sınırlıdır. Ancak, tanı anında renal hücreli karsinom (RCC) hastalarının üçte birinde uzak metastaz bulunduğundan dolayı metastaz şüphesi varlığında ^{18}F-FDG PET/BT, RCC evrelemesinde değerli bir yöntemdir. Burada; ^{18}F-FDG tutulumu gösteren yaygın metastazları bulunan ve ^{18}F-FDG tutulumu gösteren renal kitleden daha sonra RCC tanısı alan 53 yaşında erkek hasta sunulmuştur.

Anahtar kelimeler: ^{18}F-FDG PET/BT, papiller renal hücreli karsinom, metastaz, evreleme

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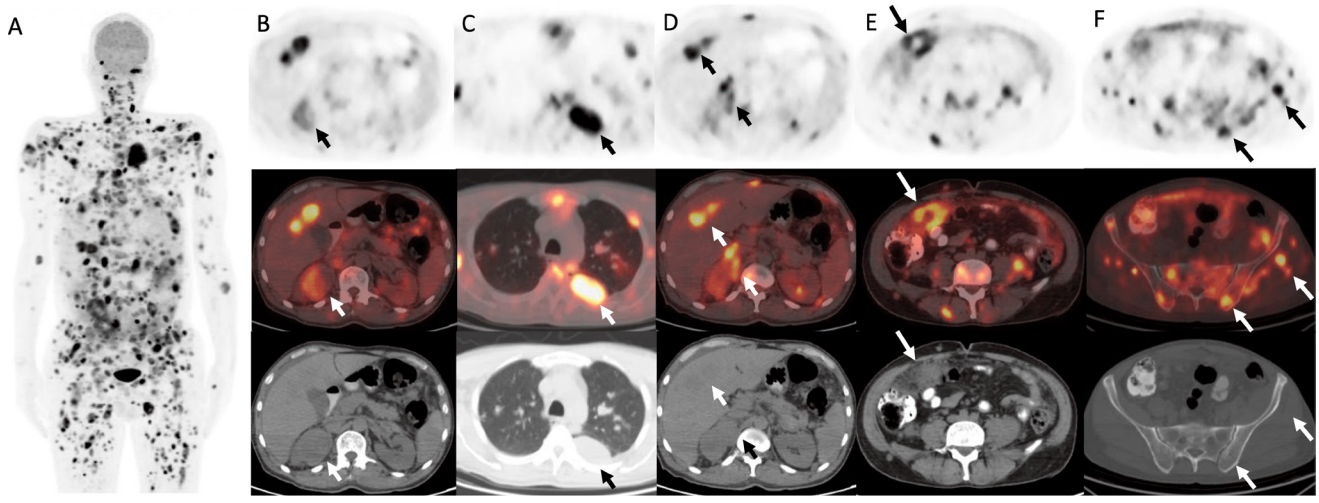

Figure 1. A 53-year-old male patient with no known comorbidity was admitted to the hospital with complaints of fever, night sweats, and fatigue for the last month. Upon detecting a suspicious mass in the right kidney and lung metastases on contrast-enhanced computed tomography (CT), ^{18}F-florodeoxyglucose (^{18}F-FDG) positron emission tomography (PET)/CT was performed (A) (1,2,3,4). In the PET/CT images, an exophytic localized renal mass in the upper pole of the right kidney exhibited increased FDG uptake [maximum standardized uptake value (SUV_{max}): 5.5], which was considered suspicious for renal cell carcinoma (RCC) (B, arrows). In addition, multiple hypermetabolic parenchymal and pleural lesions in bilateral lungs (SUV_{max}: 11.9) (C, arrows), bilateral adrenal glands (SUV_{max}: 9.5) (D, arrows), liver parenchyma (SUV_{max}: 10.0) (D, arrows), peritoneum (SUV_{max}: 8.7), mesenterium (SUV_{max}: 13.1), and omentum (SUV_{max}: 11.1) (E, arrows), multiple bone metastases (SUV_{max}: 12.1), and soft tissue lesions in subcutaneous tissue and muscles (SUV_{max}: 14.6) (F, arrows). All lesions that could not be distinguished on CT images were distinguished on PET/CT images. A biopsy of the renal mass revealed papillary RCC (pRCC). A few days later, after pathological diagnosis, the patient was taken to the hospital because of worsening general condition and died in the intensive care unit due to hemodynamic deterioration. pRCC has a better outcome in localized disease than clear cell RCC (ccRCC). However, metastatic pRCC is associated with higher recurrence rates and lower survival than ccRCC (5). Moreover, various studies have reported that a higher SUV_{max} or presence of metastatic disease indicates shorter survival (6,7,8). Therefore, ^{18}F-FDG PET/CT is an efficient method for staging RCC, primarily for estimating the tumor load of metastatic disease.

Ethics

Informed Consent: Patient consent was obtained.

Authorship Contributions

Surgical and Medical Practices: M.O., M.Y.K., Concept: M.O., D.H.Ş., Y.Ş., Design: M.O., D.H.Ş., Y.Ş., Data Collection or Processing: M.O., M.Y.K., Analysis or Interpretation: M.O., S.K., Literature Search: M.O., S.K., Writing: M.O.

Conflict of Interest: No conflicts of interest were declared by the authors.

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