Interesting Image
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Mild ^{68}Ga PSMA-11 Uptake in Incidental Pituitary Adenoma

İnsidental Pitüiter Adenomda Hafif ^{68}Ga PSMA-11 Tutulumu

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Abstract

A 76-year-old man with metastatic prostate cancer was referred to ^{68}Ga prostate-specific membrane antigen (PSMA) positron emission tomography/computed tomography (PET/CT) for restaging. A consecutive ^{18}F-fluorodeoxyglucose (FDG) PET/CT was performed due to the history of lung cancer in the left lung treated with stereotactic radiotherapy. Intense ^{18}F-FDG uptake was detected in the pituitary gland despite the mild uptake of ^{68}Ga PSMA. Contrast-enhanced magnetic resonance imaging confirmed pituitary adenoma.

Keywords: ^{68}Ga PSMA PET/CT, pituitary adenoma, ^{18}F-FDG PET/CT

Öz

Metastatik prostat kanseri tanılı 76 yaşında erkek hasta yeniden evreleme amacıyla ^{68}Ga prostat-spesifik membran antijen (PSMA) pozitron emisyon tomografi/bilgisayarlı tomografi (PET/BT) görüntüleme için yönlendirildi. Akciğer kanseri öyküsü olan ve sol akciğere stereotaktik radyoterapi uygulanan hastaya ayrıca ^{18}F-fluorodeoxyglucose (FDG) PET/BT görüntüleme de yapıldı. Hipofiz glandında yoğun ^{18}F-FDG tutulumu saptanırken, ^{68}Ga PSMA görüntülemede hafif tutulum saptandı. Kontrastlı manyetik rezonans görüntüleme ile pitüiter adenom tanısını doğrulandı.

Anahtar kelimeler: ^{68}Ga PSMA PET/BT, pitüiter adenom, ^{18}F-FDG PET/BT

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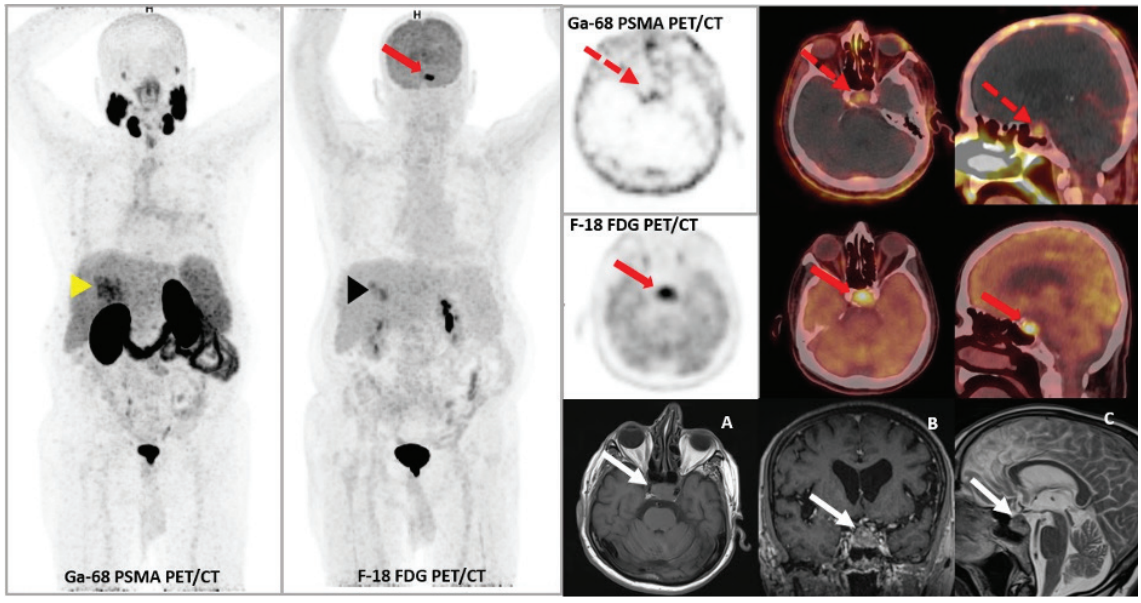

Figure 1. A 76-year-old man underwent radical prostatectomy for prostate adenocarcinoma 4 years ago. The patient received chemoradiotherapy due to castration resistance and was referred to ^{68}Ga prostate-specific membrane antigen (PSMA) positron emission tomography/computed tomography (PET/CT) for restaging. He also had a history of lung cancer and stereotactic radiotherapy to a lesion in left lung. A consecutive ^{18}F-fluorodeoxyglucose (FDG) PET/CT was performed for evaluation of lung cancer remission. Metastatic lesions in liver are seen in both PET/CT images (maximum intensity projection images, arrowheads). Intense ^{18}F-FDG uptake was observed in pituitary gland in axial and sagittal slices of ^{18}F-FDG PET/CT [maximum standardized uptake value (SUV_{max}): 13.94] (red arrows). Axial and sagittal PET and fusion images showed mild ^{68}Ga PSMA uptake (SUV_{max}: 1.88) in the pituitary gland (dashed arrows). Magnetic resonance imaging (MRI) examination of pituitary gland-verified macroadenoma filling and expanding the sella in T1 weighted sequences axial slice (A), contrast-enhanced coronal slice (B), and T2 weighted sequences sagittal slice (C). Pituitary adenomas are detected incidentally in oncological ^{18}F-FDG PET/CT and the incidence was found as 0.073% in a multi-center study (1,2). The SUV_{max} value was determined as 4.1 in another study conducted with ^{18}F-FDG PET/CT to discriminate physiological and pathological involvement (3). Pituitary lesions can be detected with high accuracy in contrast-enhanced MRI (4). PSMA PET/CT plays a significant role in diagnosis and treatment response assessment in prostate cancer patients (5). Various benign lesions with PSMA uptake have been reported (6,7,8). We showed the mild uptake on ^{68}Ga PSMA PET/CT in a pituitary adenoma for the first time to our knowledge.

Ethics

Informed Consent: Obtained from the patient.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Concept: T.F.Ç., N.E., Design: T.F.Ç., N.E., Data Collection or Processing: Y.K., Ö.E.F., E.B., Analysis or Interpretation: T.F.Ç., N.E., Literature Search: E.B., T.F.Ç., N.E., Writing: E.B., Y.K., Ö.E.F., T.F.Ç., N.E.

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