Interesting Image
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Incidental Detection of Sarcomatoid Lung Cancer by [^{18}F] Choline Positron Emission Tomography/Computed Tomography

Sarkomatoid Akciğer Kanserinin [^{18}F] Kolin Pozitron Emisyon Tomografisi/Bilgisayarlı Tomografi ile Rastlantısal Tespiti

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Abstract

A 79-year-old man treated for prostate cancer (PCa) in 2018 with concurrent hormone therapy and radical radiotherapy (RT) was given metastasis-directed RT because of skeletal progression of PCa in 2021. On [^{18}F]-choline positron emission tomography/computed tomography (CT) for biochemical recurrence (prostate-specific antigen level: 4.96 ng/mL), he showed significant uptake in multiple skeletal lesions and focal uptake in a left lung nodule. CT-guided biopsy revealed a sarcomatoid lung carcinoma. This case confirms that histopathological evaluation is mandatory in the event of significant radiolabeled choline uptake in a single lung nodule.

Keywords: Fluorocholine, cancer, interpretation

Öz

2018 yılında prostat kanseri (PCa) nedeniyle eşzamanlı hormon tedavisi ve radikal radyoterapi (RT) ile tedavi edilen 79 yaşındaki erkek hastaya, 2021 yılında PCa'nın kemik tutulumu nedeniyle metastaz odaklı RT uygulandı. Biyokimyasal nüks (prostat spesifik antijen düzeyi: 4,96 ng/mL) açısından [^{18}F]-kolin pozitron emisyon tomografisi/bilgisayarlı tomografide (BT), çoklu kemik lezyonlarında belirgin tutulum ve sol akciğer nodülünde fokal bir tutulum gösterildi. BT eşliğinde yapılan biyopside sarkomatoid akciğer karsinomu saptandı. Bu olgu, tek bir akciğer nodülünde anlamlı radyoaktif işaretli kolin tutulumunun olması durumunda histopatolojik değerlendirmenin zorunlu olduğunu doğrulamaktadır.

Anahtar kelimeler: Florokolin, kanser, yorum

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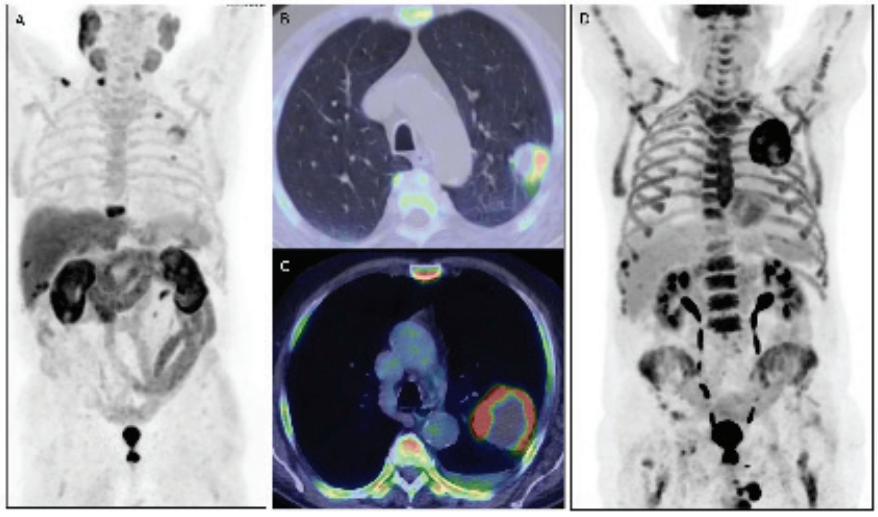

Figure 1. A 79-year-old man with a history of confined bladder cancer treated with transurethral resection of bladder (TURB) tumor in 2003 and prostate cancer (PCa). The patient was administered concurrent hormone therapy and radical radiotherapy (RT) in 2018 (cT2N0M0, Gleason score: 10, ISUP grade: V). Three years later, the patient underwent metastasis-directed RT for disease progression in the skeleton (vertebra D9). In April 2022, increased prostate-specific antigen levels (PSA: 4.96 ng/mL) prompted an [^{18}F]-choline positron emission tomography/computed tomography (PET/CT) scan, which revealed high radiopharmaceutical uptake in multiple skeletal lesions [maximum intensity projection (MIP); **A**] and in a solitary left lung nodule (continuous arrow; **B**). The maximum standardized uptake value (SUV_{max}) of the solitary left lung nodule was 8.2. Three months later, a CT-guided biopsy was performed, and histological examination revealed sarcomatoid lung carcinoma. For disease staging purposes, ^{18}F-fluorodeoxyglucose (^{18}F-FDG) PET/CT was performed three weeks after the biopsy. The results showed an increase in the dimensions of the left lung lesion (continuous arrow; **C**) and diffuse bone marrow activation (MIP; **D**). Radiolabeled choline PET/CT has been used extensively in patients with recurrent PCa (1,2) and can also incidentally detect malignant or benign lung lesions, such as bronchioloalveolar cancer (3) or pulmonary tuberculosis (4). However, this is the first report of ^{18}F-choline uptake revealing sarcomatoid lung cancer. Geraldo et al. (5) described a case of sarcomatoid metastases from PCa detected by ^{68}Ga-prostate-specific membrane antigen PET/CT. Some published studies have discussed the role of ^{18}F-FDG PET/CT in assessing primary and secondary sarcomatoid lung lesions (6,7,8). Histopathological examination should be mandatory in cases of single lung lesions and choline uptake on PET/CT to distinguish between recurrence of PCa and other etiologies.

Ethics

Informed Consent: Patient consent was obtained.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: R.M., D.C., Concept: R.M., L.E., Data Collection or Processing: R.M., D.C., Analysis or Interpretation: D.G.F., Literature Search: L.E., Writing: L.E., R.M., D.G.F.

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