Interesting Image

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^{18}F-FDG-avid Lytic Mandibular Metastasis Mimicking Dental Pathology in a Case Diagnosed with Esophageal Adenocarcinoma

Özofagus Adenokarsinomu Tanısı Konulan Bir Olguda Diş Patolojisini Taklit Eden ^{18}F-FDG-avid Litik Mandibular Metastaz

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Abstract

Esophageal adenocarcinoma is an aggressive malignancy that frequently metastasizes to lymph nodes, the liver, lungs, and adrenal glands. Mandibular metastasis is rare and can clinically mimic dental infections. ^{18}F-fluorodeoxyglucose (^{18}F-FDG) positron emission tomography/computed tomography imaging showed intense ^{18}F-FDG uptake in a lytic mandibular lesion initially interpreted as dental pathology. Follow-up imaging revealed that it was part of systemic metastatic bone disease, supported by concomitant iliac bone involvement. This case report serves as a diagnostic reminder that mandibular lesions showing ^{18}F-FDG uptake in oncology patients should prompt careful hybrid imaging evaluation rather than being reflexively attributed to dental pathology.

Keywords: Esophageal adenocarcinoma, mandibular metastasis, unusual metastasis, bone metastasis, ^{18}F-FDG PET/CT, dental pathology

Öz

Özofagus adenokarsinomu, sıklıkla lenf nodları, karaciğer, akciğer ve adrenal bezlere metastaz yapan agresif bir malignitedir. Mandibular metastaz oldukça nadirdir ve klinik olarak dental enfeksiyonları taklit edebilir. Flor-18 florodeoksiglukoz (^{18}F-FDG) pozitron emisyon tomografisi/bilgisayarlı tomografi görüntülemede mandibulada saptanan litik lezyonda izlenen belirgin ^{18}F-FDG tutulumu başlangıçta dental patoloji ile uyumlu olarak değerlendirilmiştir. Ancak takip görüntülemelerinde eşlik eden iliak kemik tutulumu ile birlikte lezyonun sistemik kemik metastazının bir parçası olduğu anlaşılmıştır. Bu olgu, onkolojik hastalarda ^{18}F-FDG tutulumu gösteren mandibular lezyonların doğrudan dental patoloji olarak yorumlanmaması gerektiğini ve hibrit görüntüleme bulgularının dikkatle değerlendirilmesinin önemini vurgulamaktadır.

Anahtar Kelimeler: Özofagus adenokarsinomu, mandibular metastaz, nadir metastaz, kemik metastazı, ^{18}F-FDG PET/BT, dental patoloji

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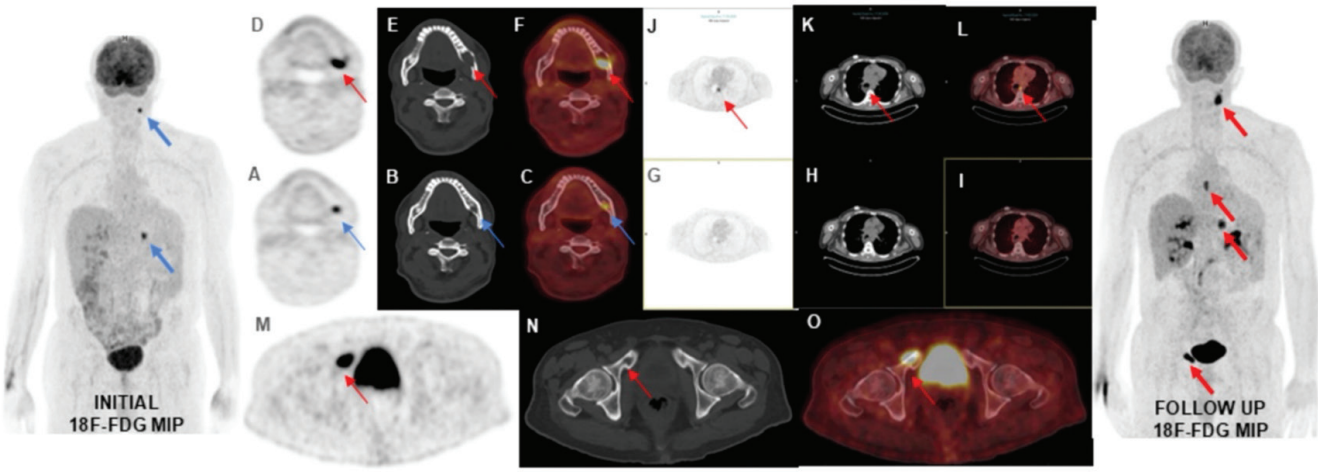


Figure 1. A 42-year-old man with a known diagnosis of esophageal adenocarcinoma underwent ^{18}F-fluorodeoxyglucose (^{18}F-FDG) positron emission tomography/computed tomography for disease evaluation. The initial ^{18}F-FDG PET/CT scan (A, B, C) showed a lytic mandibular lesion with mild ^{18}F-FDG uptake and was interpreted as a dental pathology [blue arrows; maximum standardized uptake value (SUV_{max}): 4.25]. Subsequent axial PET, CT, and combined PET/CT images (D, E, F) showed progression in size and metabolic characterization of a lytic mandibular lesion with intense ^{18}F-FDG uptake (red arrows; SUV_{max}: 11.84). Follow-up imaging also revealed a newly developed mediastinal lymph node, previously with a maximum axial diameter of 7 mm (SUV_{max}: 2.62) and now measuring 15 mm (SUV_{max}: 5.68) (red arrows J, K, L). Additionally, an increase in ^{18}F-FDG uptake intensity was observed in the primary tumor lesion [maximum intensity projection (MIP) red arrow] compared to the previous imaging (MIP blue arrow) (previous SUV_{max}: 6.37, follow-up SUV_{max}: 7.19). In the same examination, an additional lytic lesion with ^{18}F-FDG uptake was detected in the iliac bone (M, N, O, red arrows; SUV_{max}: 12.05). Histopathological examination, performed due to intermittent increases in ^{18}F-FDG uptake in the lesion in the jawbone and the simultaneous presence of the iliac bone lesion, revealed metastasis to the esophagus. Esophageal adenocarcinoma is an aggressive malignancy that most frequently metastasizes to regional lymph nodes, the liver, lungs, and adrenal glands, and rarely to the pericardium, rectum, pancreas, and orbits (1,2,3,4,5,6,7). Bone metastases are relatively rare, reported in approximately 5-10% of cases, and typically involve the spine, pelvis, and ribs (1,5,6). Mandibular metastatic involvement is extremely rare and has mostly been described in isolated case reports and small case series. Although esophageal adenocarcinoma spreads predominantly via lymphatic pathways, mandibular and other skeletal metastases reflect hematogenous spread and generally indicate advanced systemic disease (1). Large retrospective series have shown that metastatic tumors to the mandibular bones constitute approximately 1-3% of oral malignancies, most frequently involving the mandible, and are often associated with disseminated disease and poor prognosis (8). The predisposition to the mandibular bone has been attributed to rich medullary vascularization and the presence of hematopoietically active bone marrow, which may facilitate tumor cell accumulation (8). Recent case series from the nuclear medicine literature have shown that mandibular metastases from various malignancies frequently pose diagnostic traps and mimic benign or odontogenic conditions on initial imaging (9). Therefore, clinically and radiologically, such lesions can be misinterpreted, especially when ^{18}F-FDG uptake is initially mild. In the present case, the intermittent progression of ^{18}F-FDG uptake within the jawbone lesion and the detection of concomitant iliac bone metastasis supported systemic bone metastatic disease rather than benign dental pathology. This case reinforces the need for careful hybrid imaging evaluation of jawbone lesions showing ^{18}F-FDG uptake in oncology patients, strongly raising suspicion of metastatic disease and requiring more than reflexively attributing it to dental pathology.

Ethics

Informed Consent: Written and verbal consent forms were obtained from the patient for ^{18}F-FDG PET CT imaging.

Authorship Contributions

Surgical and Medical Practices - Concept - Design - Data Collection or Processing - Analysis or Interpretation - Literature Search - Writing: All authors contributed equally to this study.

Conflict of Interest: No conflict of interest was declared by the authors.

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