

Polyostotic feet acrometastases from breast carcinoma demonstrated on [¹⁸F]FDG PET/CT imaging

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Abstract

Acrometastases are rare. Less than 0.01% of patients have metastasis in the foot bone. Polyostotic metastasis in the foot is extremely rare. We report a 50-year-old woman who complained of progressive pain and swelling in the right foot after radical right mastectomy for 4 years. [¹⁸F]FDG PET/CT demonstrated multiple mixed bone destruction in the right foot with intense [¹⁸F]FDG PET/CT uptake. CT-guided calcaneus biopsy confirmed the diagnosis of metastatic breast carcinoma.

KEY words: acrometastases; breast carcinoma; [¹⁸F]FDG PET/CT

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A 50-year-old woman complained of progressive pain and swelling in her right foot after a radical right mastectomy for 4 years. Her severe pain was treated elsewhere as arthritis, but unresponsive to conservative treatment measures. In the past, she was treated with chemotherapy and hormone therapy. Regular follow-up had no evidence of relapse. In our hospital, laboratory examination results except for increased carcinoma antigen 15-3 (CA 15-3) were unremarkable. Positron emission tomography/computed tomography (PET/CT) was performed to detect any other possible metastases or recurrence. The maximum intensity projection image revealed intense 18-fluorodeoxyglucose ([¹⁸F]FDG) uptake in the right foot region. Axial, sagittal, and coronal CT bone windows demonstrated multiple mixed bone destruction in the right distal tibia and fibula, calcaneus, talus, navicular, cuboid, lateral cuneiform bone, and the second, third, and fifth metatarsal bone. All the bone lesions had intense [¹⁸F]FDG uptake with SUV_{max} of 12.16. CT-guided biopsy confirmed the diagnosis of metastatic breast carcinoma. Metastatic bone disease is the most common neoplastic process that affects the skeletal system. It mostly occurs in the spine, followed by the pelvis and long bones. Less than 0.01% of patients have metastasis in the foot bone. Breast cancer with foot acrometastasis has been reported. Calcaneus was the most

common site, followed by metatarsal mostly characterized by lytic lesions. Singh et al. presented a case of isolated calcaneal metastasis from lung carcinoma with intense [¹⁸F]FDG uptake on PET/CT. However, we reported a case of polyostotic metastasis in the foot from breast carcinoma on [¹⁸F]FDG PET/CT, which is extremely rare. The diagnosis may be delayed for distal extremities are usually excluded from metastatic skeletal surveys or conventional bone scanning techniques. On the other hand, distant metastases may be missed owing to the limited scan range from head to thigh in the conventional PET/CT examination. For this patient, a whole-body [¹⁸F]FDG PET/CT scan is useful to effectively identify the extent of uncommon metastatic sites and stages. Foot acrometastases may mimic primary benign skeletal diseases. Differential diagnoses should include osteomyelitis, tuberculous dactylitis, rheumatoid arthritis, and osteoarthritis. This case expanded our acknowledgment of foot acrometastasis on PET/CT and revealed that the possibility of acrometastasis should be considered in any cancer patient presenting with skeletal pain.

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Conflicts of interest

None declared to all authors.

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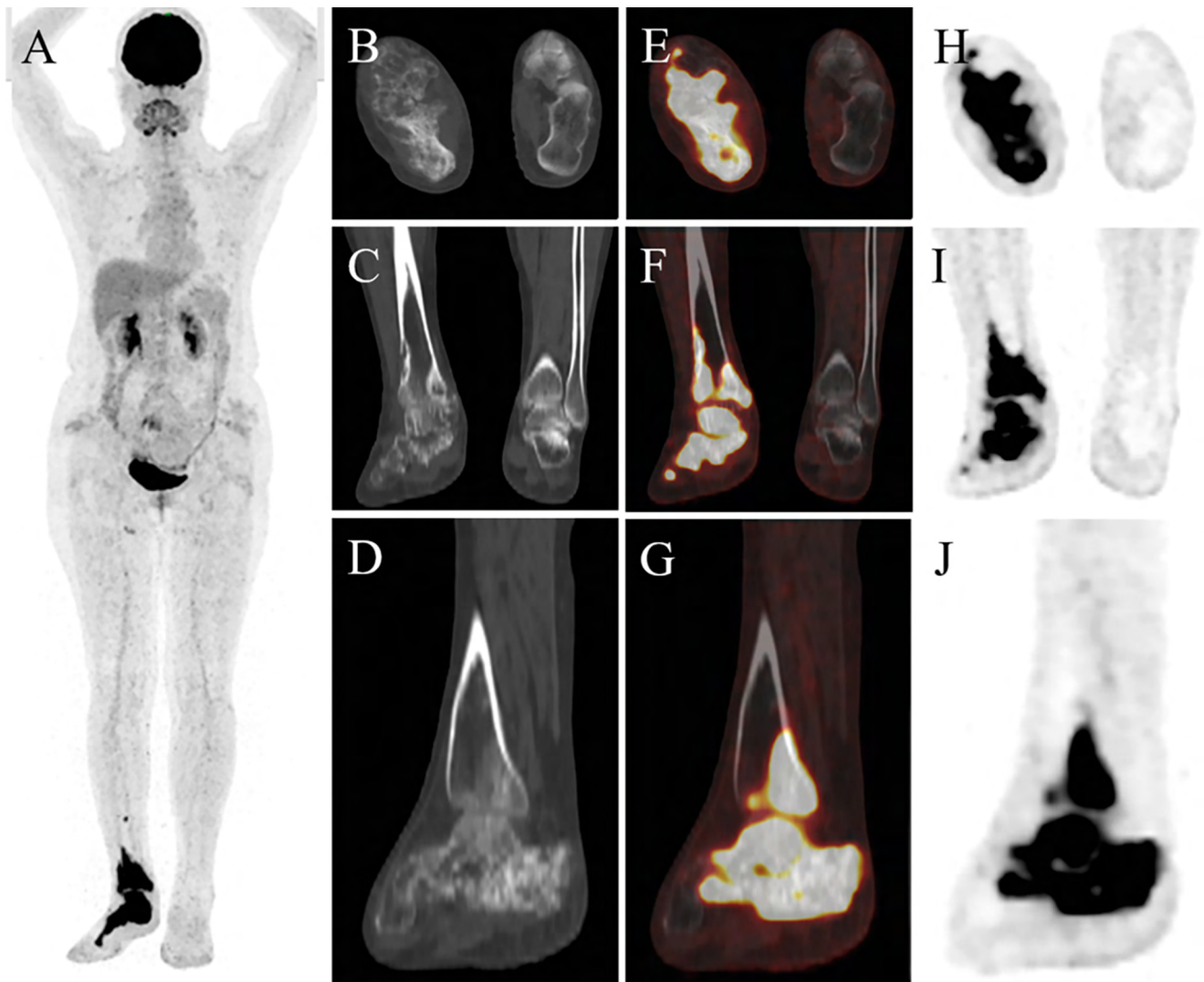


Figure 1. Maximum intensity projection (A), axial, sagittal, coronal CT bone windows (B–D), PET/CT fusion imaging (E–G), and PET (H–J) imaging demonstrated multiple mixed bone destruction in the right distal tibia and fibula, calcaneus, talus, navicular, cuboid, lateral cuneiform bone and the second, third and fifth metatarsal bone with increased [^{18}F]FDG uptake