Normal F-18 FDG Vertebral Uptake in Paget's Disease on PET Scanning

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Abstract: Whole-body bone scans remain the standard of care in the management of patients with suspected bone metastases. They are very sensitive for bone disease but are nonspecific. Various benign bone pathologies can give rise to foci of increased activity, which may mimic osteoblastic bone metastases. Whole-body PET with FDG has been shown to be of great value for the evaluation of bone metastases, with high sensitivity and specificity. This case shows normal FDG activity in a vertebra affected by Paget's disease and intense osteoblastic activity on the bone scan, a false-positive finding in the evaluation of suspected skeletal metastases.

Key Words: FDG PET, Paget's disease, bone scan

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REFERENCES

1. Kim CK, Estrada WN, Lorberboym M, et al. The 'mouse face' appearance of the vertebrae in Paget's disease. *Clin Nucl Med*. 1997;22:104–108.
2. Vellenga CJ, Bijvoet OL, Pauwels EK. Bone scintigraphy and radiology in Paget's disease of bone: a review. *Am J Physiol Imaging*. 1988;3:154–168.
3. Mari C, Catafau A, Carrio I. Bone scintigraphy and metabolic disorders. *Q J Nucl Med*. 1999;43:259–267.
4. Hain SF, Fogelman I. Nuclear medicine studies in metabolic bone disease. *Semin Musculoskelet Radiol*. 2002;6:323–329.
5. Nakamoto Y, Osman M, Wahl RL. Prevalence and patterns of bone metastases detected with positron emission tomography using F-18 FDG. *Clin Nucl Med*. 2003;28:302–307.
6. Hsia TC, Shen YY, Yen RF, et al. Comparing whole body 18F-2-deoxyglucose positron emission tomography and technetium-99m methylene diphosphate bone scan to detect bone metastases in patients with non-small cell lung cancer. *Neoplasma*. 2002;49:267–271.
7. Yang SN, Liang JA, Lin FJ, et al. Comparing whole body (18)F-2-deoxyglucose positron emission tomography and technetium-99m methylene diphosphonate bone scan to detect bone metastases in patients with breast cancer. *J Cancer Res Clin Oncol*. 2002;128:325–328.
8. Cook GJ, Maisey MN, Fogelman I. Fluorine-18-FDG PET in Paget's disease of bone. *J Nucl Med*. 1997;38:1495–1497.

FIGURE 1. (A and B) The anterior and posterior images from the whole-body bone scan of a 61-year-old man with a history of colorectal cancer to assess for bone metastases. Intense MDP activity and a typical mouse face appearance of the L2 vertebral body (long arrow) is seen, characteristic of Paget's disease.[1–4] The serum alkaline phosphatase was 78 (normal, 30–125).

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FIGURE 2. Coronal image of the whole-body FDG PET scan through the lumbar spine does not show any focal increased FDG activity. The PET scan was performed to further evaluate rectal thickness seen on a recent computed tomography scan. Normal physiological distribution is seen in all the areas visualized. PET with FDG has been shown to be promising for the evaluation of bone metastases, and variable FDG activity has been demonstrated in Paget's disease.[5–8]

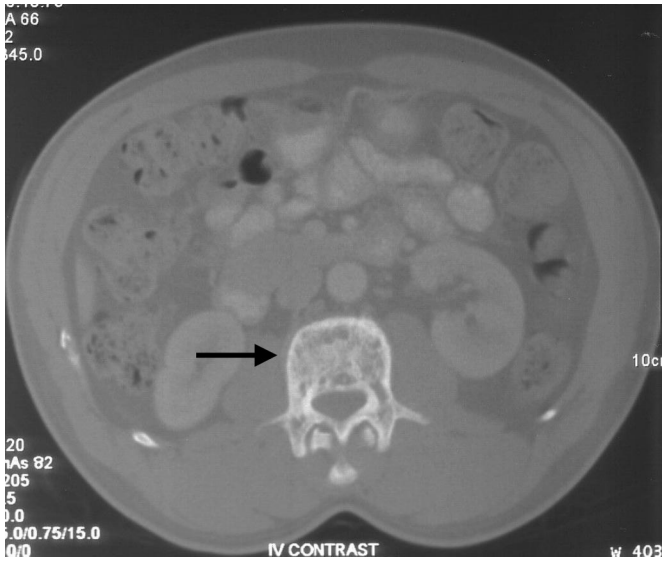

FIGURE 3. Axial image from the computed tomography scan of the abdomen showed coarse and widely separated trabeculae and cortical thickening, suggestive of Paget's disease in the L2 vertebral body (black arrow).