ORIGINAL ARTICLE

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Accumulation of ^{99m}Tc-MIBI in bone marrow

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^{99m}Tc-MIBI (Sestamibi) was originally developed for myocardial perfusion studies. The agent also may be used for the depiction and characterization of tumors. Performing such examinations has shown uptake in skeletal structures in several patients suggesting bone engagement of the disease which later was excluded. Retrospective evaluation of 44 examinations with ^{99m}Tc-MIBI performed in order to localize diseased parathyroid in patients with suspected hyperparathyroidism showed skeletal activity in 21 (48%) patients. Although these patients represent a selected group, the observation indicates a mechanism for skeletal accumulation of this radiopharmaceutical. Evaluation of another 13 normocalcemic patients undergoing whole-body registration for malignancy staging or to assess lower extremity ischemia with ^{99m}Tc-MIBI showed skeletal activity in 6 (46%) patients. Complementary mouse experiments confirmed skeletal uptake of ^{99m}Tc-MIBI, where most of the activity is taken up by the red bone marrow. It is concluded that homogeneous, diffuse weak skeletal activity at examination with ^{99m}Tc-MIBI is a normal finding and does not indicate malignancy.

Key words: mouse experimentation, skeletal activity, ^{99m}Tc-MIBI (Sestamibi), tumor detection