Interesting image

$^{99m}$Tc-MDP uptake in thyroid nodule: Contribution of SPECT-CT and ultrasonography

Captación de $^{99m}$Tc-MDP en nódulos tiroideos: Contribución de SPECT-TAC y ultrasonografía

M. Tuncel*, E. Akdemir

Department of Nuclear Medicine, Hacettepe University Faculty of Medicine, Sihhiye, Ankara, Turkey

A 45-year-old female with a diagnosis of breast cancer was referred to bone scintigraphy (BS) to rule out possible bone metastases. Whole body BS images showed focal increased uptake in the left neck otherwise normal (Fig. 1a). Patient underwent SPECT-CT to further evaluate the etiology of increased $^{99m}$Tc-methylene diphosphonate (MDP) uptake. SPECT-CT images showed that increased focal uptake was in the calcified thyroid nodule (Fig. 1b). Her thyroid function tests were normal and neck ultrasonography revealed a solid nodule with 16 mm × 12 mm size and internal micro and coarse calcifications (white arrow) (c).

* Corresponding author.
E-mail address: muratmtx@yahoo.com (M. Tuncel).

© 2011 Elsevier España, S.L. and SEMNIM. All rights reserved.
a solid nodule with internal micro and coarse calcifications which were suspicious for malignancy (Fig. 1c). Fine needle biopsy of the nodule revealed benign follicular epithelial cells and the patient was followed accordingly.

Although rare, increased $^{99m}\text{Tc}$-MDP uptake in thyroid could be seen. The common mechanisms of soft tissue localization of $^{99m}\text{Tc}$-MDP are an expanded interstitial volume, hyperemia and like in our patient soft tissue calcifications.\(^1\) Thyroidal $^{99m}\text{Tc}$-MDP uptake have been reported due to large non-toxic goiter, metastases and primary thyroid cancer.\(^2,3\) Different than literature, $^{99m}\text{Tc}$-MDP uptake in our case was due to a solid thyroid nodule. The hybrid SPECT-CT imaging and ultrasonography help to characterize the etiology of uptake. However biopsy was still needed for final diagnosis.

References