Interesting image

99mTc-MDP uptake in thyroid nodule: Contribution of SPECT-CT and ultrasonography

Captación de 99mTc-MDP en nódulos tiroideos: Contribución de SPECT-TAC y ultrasonografía

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A R T I C L E  I N F O

Article history:
Received 3 April 2011
Accepted 24 May 2011
Available online 23 July 2011

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 99mTc-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

\[\text{Fig. 1. Whole body BS images showed focal increased 99mTc-MDP uptake in the left neck (black arrow) (a). SPECT-CT showed that increased uptake was in the calcified nodule at the left thyroid lobe (white arrow) (b). Ultrasonography revealed a solid nodule with } 16\text{ mm } \times 12\text{ mm size and internal micro and coarse calcifications (white arrow) (c).}\]

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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 $^{99m}$Tc-MDP uptake in thyroid could be seen. The common mechanisms of soft tissue localization of $^{99m}$Tc-MDP are an expanded interstitial volume, hyperemia and like in our patient soft tissue calcifications.\(^1\) Thyroidal $^{99m}$Tc-MDP uptake have been reported due to large non-toxic goiter, metastases and primary thyroid cancer.\(^2,3\) Different than literature, $^{99m}$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