Non-neoplastic variants of the sternum detected on bone scintigraphy using a hybrid SPECT/CT machine

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Abstract:

Purpose: To identify the non-neoplastic variants of the sternal uptake in patients known to have a primary tumor, referred for detection of metastases elsewhere. Materials and methods: This retrospective study was approved by the Institutional Review Board. Fifty eligible patients (17 males & 33 females) known to have a primary tumor underwent 99mTc-MDP-bone scan for detection of metastases. All patients underwent SPECT/CT of the chest region. For each patient, 10 subsites were evaluated (right & left sternoclavicular joints, right and left first costo-sternal articulation, manubrium sterni, manubriosternal junction, body of the sternum, xiphisternal junction, xiphoid process and other sub-sites (e.g. chondro-sternal articulations)). The uptake was described as normal or abnormal. CT findings were categorized as normal/abnormal (arthritis, degenerative, developmental & congenital). Any patient with suspicious metastatic sternal lesion based on CT findings or abnormal tracer uptake was excluded. Results: A total of 500 sub-sites were analyzed. Increased uptake was seen in 189 sub-sites. Of them, 133 showed abnormal CT findings (95 arthritis, 33 degenerative, 3 developmental & 2 congenital) and 56 sites were unremarkable. Of the 311 with normal uptake, only 18 showed abnormal CT findings (8 arthritis & 10 degenerative). The association was statistically significant (P

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