

Appearances of soft tissue calcification on Tc99m MDP bone scan

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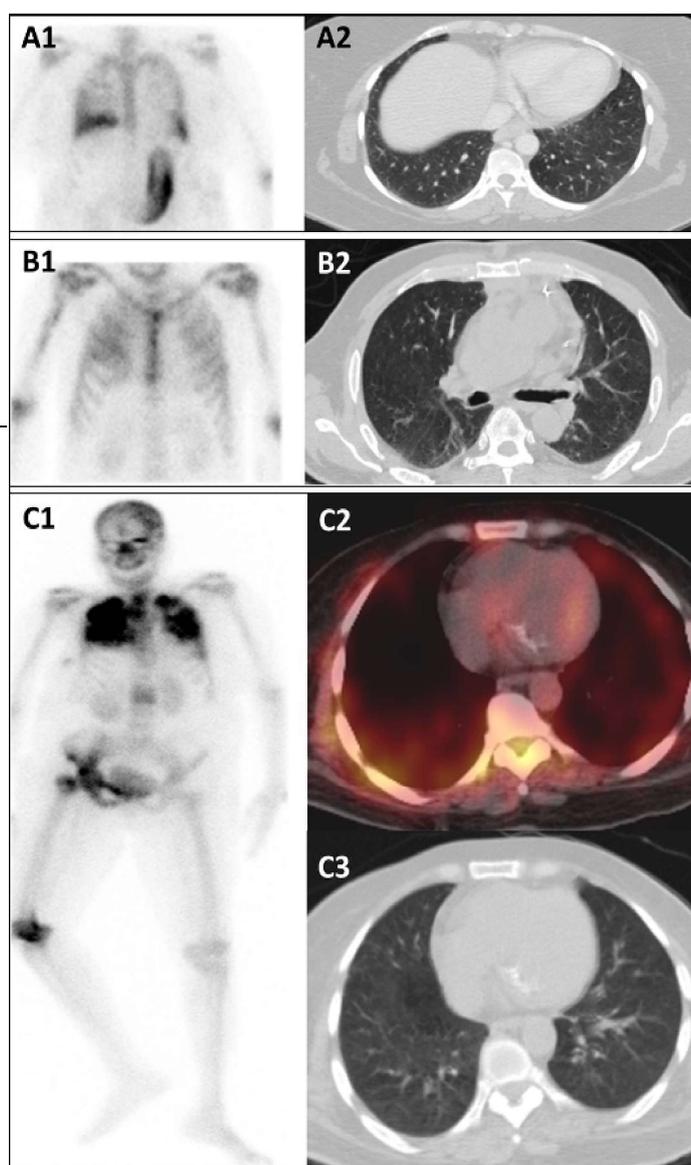
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Abstract

Metastatic calcification relates to abnormal calcification resulting from hypercalcaemia in otherwise normal tissues. Hypercalcaemia can occur secondary to chronic renal failure, hyperparathyroidism, hypervitaminosis D, and metastatic neoplasms. Specific symptoms are often lacking, but calcification may be a marker of disease severity and its chronicity. We present cases with different patterns of soft tissue calcification on Tc99m MDP bone scan.

Keywords: Metastatic soft tissue calcification, bone scan, hypercalcaemia.

Figure: A: A 53-year-old female with breast carcinoma underwent bone scan. Planar anterior chest views (A1) displayed soft tissue uptake in the bilateral lung parenchyma and stomach. On correlation with CT (A2), no morphologic abnormality was appreciated. B: Bone scan performed in a 47-year-old male with end-stage renal disease. Planar chest images (B1) demonstrated heterogeneous soft tissue uptake was seen in mid-chest bilaterally with no morphological correlate on CT scan (B2). C: Bone scan was acquired in a 67-year-old female diagnosed with carcinoma breast. Metastatic lesions were seen involving right hemipelvis, thoracic spine, L1/L2 vertebrae and right proximal femur (C1). Intense soft tissue uptake in lungs bilaterally had no anatomical abnormality on fusion SPECT-CT (C2) chest and CT scan (C3). All these cases had hypercalcaemia and findings can be attributed to metastatic calcification which refers to deposition of calcium in normal tissue resulting from abnormal calcium metabolism. There are three major types of extraosseous calcification: dystrophic, metastatic and heterotopic.¹ Extra-osseous uptake of technetium 99m-methyl diphosphonate (99mTc MDP) radiopharmaceuticals is reported in a wide variety of malignant and non-malignant conditions. Impaired renal function with consequently decreased phosphate excretion is a prerequisite for this phenomenon.² Bone scan with the advantage of entire skeletal visualization can be useful for assessment of the extent of metastatic calcification and may establish suitable management to prevent organ failure.³ Interpretation of the presence of and the specific pattern of calcification or ossification may obviate the need for invasive biopsy.



References

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