

An unusual presentation of metastatic chondrosarcoma on Tc99m MDP Bone scan.

Mairah Razi, Aamna Hassan

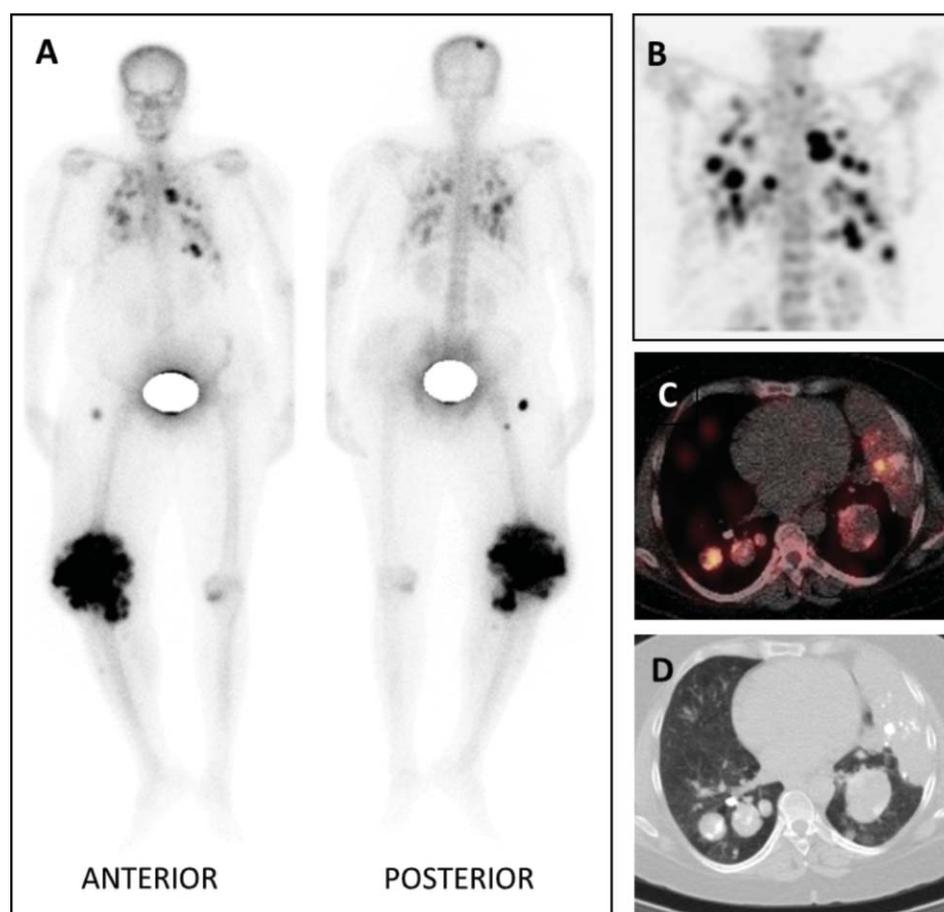
Department of Nuclear Medicine, Shaukat Khanum Memorial Cancer Hospital and Research Centre, Lahore, Pakistan

Correspondence: Aamna Hassan. Email: aamnah@skm.org.pk

Abstract

Radionuclide bone scintigraphy with technetium-99m-methylene diphosphonate is the commonest procedure in nuclear medicine. It is an effective diagnostic tool in staging of primary bone tumours since long. It is not only helpful to confirm the radiologic features of malignant bone tumours but also demonstrates skeletal metastasis and soft tissue involvement. Computed tomography (CT) combined with single-photon emission computed tomography (SPECT/CT) give better insight to localize and categorize the lesions. We describe an interesting image of chondrosarcoma showing anatomical extent of primary tumour and multifocal uptake in the chest conforming to underlying widespread partially calcified pulmonary metastases.

Keywords: Chondrosarcoma, Bone scintigraphy, Calcified pulmonary metastasis, SPECT/CT.



A 48-year-old female had 15 years history of gradually progressive swelling in right knee joint. Plain radiograph of knee suggested primary bone tumour, most likely chondrosarcoma. Bone scintigraphy was performed for metastatic workup after intravenous injection of 20mCi of Tc-99m MDP. **(A)** Planar whole body images demonstrated intense uptake in expansile primary bone lesion in the right knee region. Multiple abnormal foci were also noted in the skull and chest bilaterally. **(B)** Maximum Intensity Projection (MIP) image **(C)** axial SPECT/CT images and **(D)** Lung windows confirmed MDP uptake in widespread partially calcified metastatic deposits in lungs bilaterally and a calcified focus in left thyroid lobe as well (not shown).

Chondrosarcoma is the second most common malignant bone tumour after osteosarcoma in adults¹. It may occur as de novo or secondary resulting from malignant transformation of enchondromas or osteochondromas. Skeletal metastases are not frequent, however they may occur with higher histological grade. Thyroid

metastases from chondrosarcoma are extremely rare with only a few case reports in the literature². Chondrosarcomas are intensely avid on bone scintigraphy which reflects reactive or malignant new bone formation or dystrophic calcification in such tumours. Lungs are a commonly involved site of distant metastases³. They tend to develop calcified lung metastasis due to bone formation in osteoid matrix produced by malignant cells⁴. Metastatic pulmonary calcification can also occur in benign conditions like chronic renal failure, primary and secondary

hyperparathyroidism, excess exogenous administration of calcium and vitamin D, sarcoidosis, milk-alkali syndrome, osteoporosis, and osteitis deformans⁵.

Conflict of Interest: None to declare.

References

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