Calcified dural based meningioma, mimicker of metastasis on skeletal scintigraphy

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Abstract

Meningiomas are meningeal based slow growing tumours most of which are benign in nature. Calcification in these tumours leads to Technetium labeled Methylene Diphosphonate (Tc99m-MDP) uptake on skeletal scintigraphy. Hybrid SPECT-CT bone scanning offers anatomic details and differentiates between benign entity and metastasis. We present the case of a 56-years-old female with right breast carcinoma. Bone scintigraphy, acquired as a part of baseline staging work up, showed focal skull uptake mimicking skeletal metastasis. SPECT-CT scan demonstrated characteristic anatomic features of calcified meningioma in right parietal region.

Keywords: Meningioma, Bone scan, SPECT-CT.

A 56-year-old female presented with history of right breast lump for 3 weeks. On histopathology, diagnosis of right breast intraductal carcinoma Grade III was established. Bone SPECT-CT scan was performed using 777MBq of Tc99m MDP injected intravenously. Planar images (A) display a focus of increased radiotracer uptake in right parietal region. On SPECT-CT images (B) abnormal focal radiotracer uptake is demonstrated in the brain parenchyma adjacent to the skull vault. CT images (C), show well circumscribed densely calcified dural-based lesion associated with buckling of adjacent cerebral cortex, irregularity along the adjacent inner table of right parietal bone and reactive hyperostosis. No cranial vault invasion was seen. Findings were in keeping with calcified dural-based meningioma.

It is a common benign intracranial tumour with a female predilection. The risk factors for developing meningioma are reported as trauma, hormone replacement therapy and breast cancer.1 Most of the meningiomas demonstrate ossification/calcification. The mechanism of this calcification in still unknown.2 Extra-osseous uptake of 99mTc-MDP on bone scintigraphy is common. Hybrid SPECT-CT helps to differentiate between metastatic and non-metastatic diseases with confidence.3

References