# Hyperostosis fronto-parietalis mimicking metastasis to the skull: Unveiled on SPECT/CT

A 65-year post-menopausal female, treated case of right breast carcinoma had chest wall recurrence and was sent for bone scintigraphy to rule out skeletal involvement. The planar bone scan revealed heterogeneously increased tracer uptake involving bilateral frontal and parietal bones [Figure 1a and b]. The remaining skeleton showed normal tracer distribution. To characterize this lesion SPECT/CT of the cranium was carried out. It revealed nodular and irregular thickening of the inner table of the frontal bone extending to involve the parietal bones [Figure 2]. The midline was spared and the external surface of the skull was unaffected, which is characteristic of hyperostosis fronto-parietalis. Thus the heterogeneous pattern of Tc-99m Methylene diphosphonate uptake could be attributed to hyperostosis ruling out the possibility of sclerotic metastasis. The importance of recognizing this entity on bone scans stems mainly from the necessity of not mistaking it for metastasis.

Hyperostosis frontalis interna (HFI) has been reported in 5-12% of the general population,[1] but is more commonly seen in women.[2] HFI is characterized by benign overgrowth of the inner table of the frontal bone. It is seen most commonly in older, post-menopausal females. Its etiology is as yet unknown. Hypotheses suggested involve the role of leptin, a peptide that helps to control the metabolic rate.[3] Men with hormonal irregularities, such as those with atrophic testes, have been seen to have HFI of variable severity.[4] The condition is generally of no clinical significance and an incidental finding, but sometimes the growth can be exuberant and cause compression of brain tissue.[5] Our patient also had no history of neurological disorders or headache. HFI is typically bilateral symmetrical and may extend to involve parietal bones. Moore classified HFI under the broad category of metabolic craniopathy, which also included, nebula frontalis, hyperostosis calvaria diffusa, and hyperostosis frontoparietalis, named according to the location

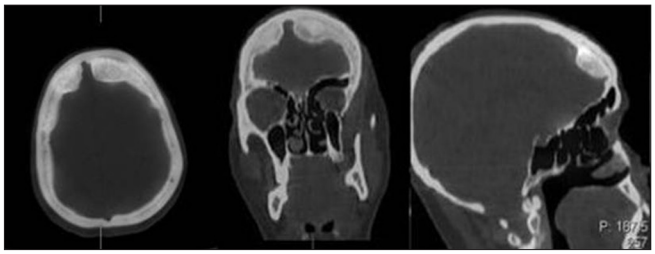

**Figure 2:** SPECT/CT of the cranium was done on Symbia T6 SPECT/CT (Siemens). Transaxial fused SPECT/CT images revealed irregular thickening and nodularity of the inner table of bilateral frontal and parietal bones showing increased tracer accumulation

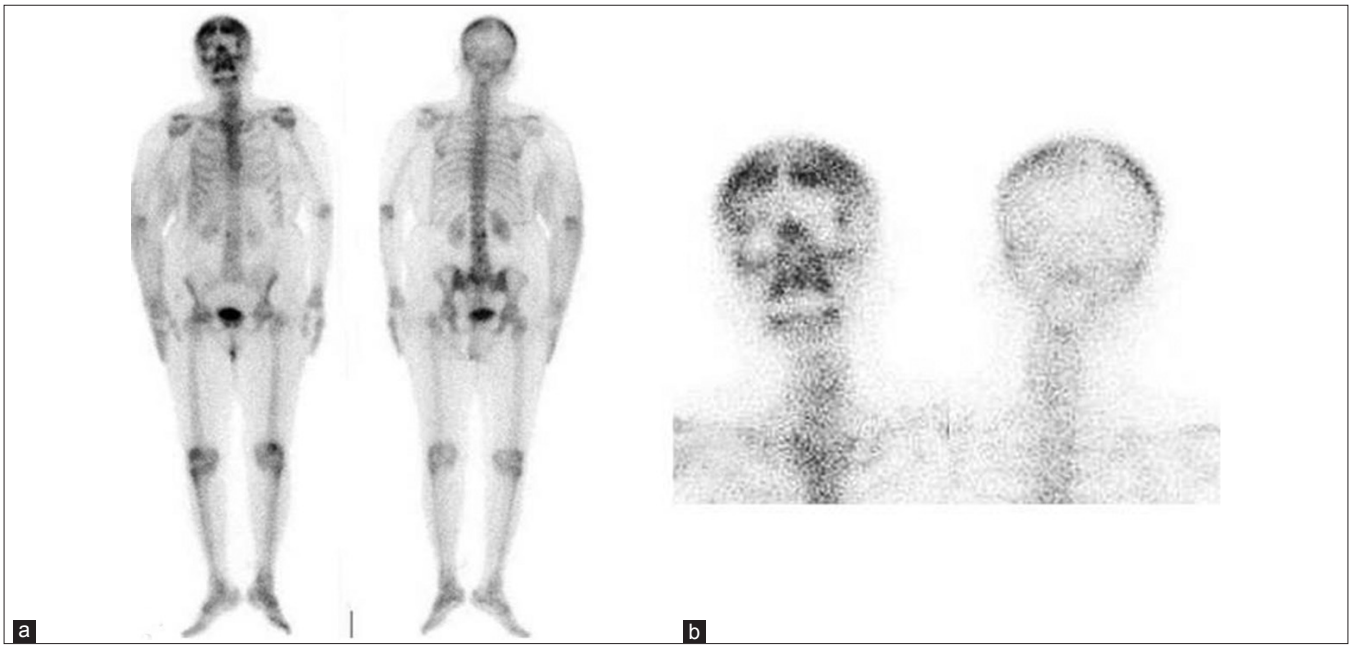


**Figure 1:** 99mTc-methylene diphosphonate planar bone scan revealed heterogeneously increased tracer uptake involving bilateral frontal and parietal bones. The remaining skeleton showed normal tracer distribution

of the lesion.[6] The skull thickening may be sessile or nodular and may affect the skull in a focal or diffuse manner. The importance of this condition stems mainly from the necessity of no mistaking it for a malignant pathology.

**Madhavi Tripathi, Chandrasekhar Bal, Nishikant A Damle, Abhinav Singhal**

Department of Nuclear Medicine,
All India Institute of Medical Sciences, New Delhi, India

**Address for correspondence:**
Dr. Nishikant Damle, Department of Nuclear Medicine and PET, All India Institute of Medical Sciences, New Delhi - 110 029, India.
E-mail: nkantdamle@gmail.com

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