

Seeding in the walnut; Leptomeningeal spread of Breast Cancer

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Abstract

Breast cancer is the most common etiology of leptomeningeal carcinomatosis (LC), with or without brain parenchymal involvement. However, only 5% of patients with breast cancer develop leptomeningeal metastasis even in late clinical course. It can rarely be detected on bone scintigraphy. MRI is the modality of choice.

Keywords: Leptomeningeal carcinomatosis, 99mTc-MDP.

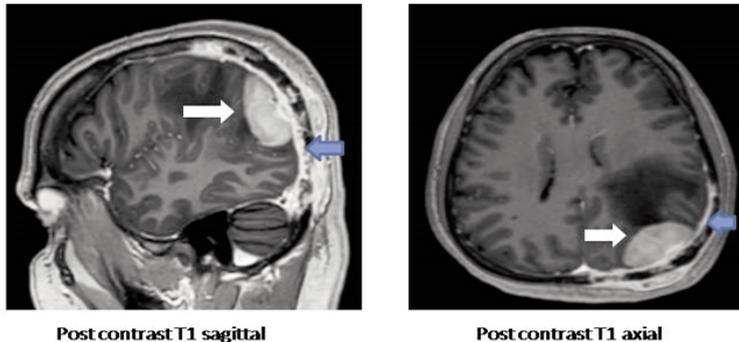
Figure. A



Anterior

Posterior

Figure. B



Post contrast T1 sagittal

Post contrast T1 axial

A 41 year old female with invasive ductal grade III carcinoma of left breast, underwent chemotherapy, wide local excision and radiotherapy. While being on tamoxifen she developed biopsy proven recurrence at scar site, 8 months post treatment. Restaging bone scan was performed after intravenous injection of 782MBq Tc99m MDP (Fig A) Posterior view showed heterogeneous radiotracer uptake in the left hemi skull along with multiple scattered osseous metastasis. On inquiring patient reported headache and tenderness over left parieto-occipital region. She was then referred to emergency assessment room where MRI brain was performed revealing a large dural-based metastatic deposit along the left parietal lobe with significant surrounding vasogenic oedema extending to the frontal lobe. Extensive leptomeningeal and bone involvement was also seen. (Fig B) Post contrast T1 sagittal and axial MRI brain

images showing dural based enhancing lesion in left parietal lobe with surrounding oedema (white arrows) and leptomeningeal enhancement representing metastatic disease (blue arrows). Overlying inner and outer table of parietal bone also shows abnormal signal changes.

Leptomeningeal carcinomatosis is the involvement of the leptomeninges by metastatic carcinoma, most commonly seen in breast cancer.¹ Tumour cell infiltration may cause headache and raised intracranial pressure. These symptoms are usually absent in pure bone metastasis. Therefore, new onset headache in a breast cancer patient should raise the suspicion of leptomeningeal/brain metastasis.² Aside from osseous uptake; Tc99m MDP is known to accumulate in non-osseous area of metastases. Uptake in skull on bone scintigraphy should be correlated with clinical symptoms to better delineate a diagnostic and management plan so as not to miss brain cerebral or leptomeningeal metastases.

References

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