

## Case Report-I

# Multiple Myeloma Mimicking Bone Metastasis in a Patient of Carcinoma Breast

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### ABSTRACT

**Second malignancies or co-existing malignancies like ovarian, endometrial, lung carcinomas, soft tissue sarcomas have been reported to be associated with breast carcinoma. The commonest cause of bone pain in a patient of breast cancer is metastasis to bone. We present a rare case of multiple myeloma mimicking bony metastasis in a patient of breast carcinoma.**

**Case:** A 55 years old woman presented in 2003 as a case of left sided locally advanced breast cancer (LABC), confirmed with biopsy as infiltrating ductal carcinoma grade III, ER/PR negative. Subsequent to 3 cycles of neoadjuvant chemotherapy with cyclophosphamide, epirubicin and 5 Fluorouracil, patient had a partial response and underwent a simple mastectomy with axillary clearance (SMAC). Six of twelve axillary lymph nodes were positive for metastasis. Three cycles of docetaxel and epirubicin were given as the adjuvant chemotherapy followed by local radiotherapy to chest wall and supraclavicular fossa.

Patient was on regular follow up and was asymptomatic for next one year, when she developed low backache. On physical examination she had no evidence of recurrence. Bone mineral density revealed- osteopenia in

lumber spine and early osteopenia in both wrists and femoral neck. Calcium supplements and 6 monthly injections of zoledronic acid were started. But the backache was persistent. MRI of dorsolumbar spine at this time revealed grade I-II compression of L1-L3 vertebrae with compression of thecal sac. Metastatic work up for lung and liver was negative. Bone scan suggested increased tracer uptake in D9-D11 and L1-L4. Local radiotherapy was given to L1-L4 spine, followed by monthly bisphosphonates.

Four months later patient presented with pathological fracture of left index finger with a lytic lesion on X-ray (Fig1). Histopathologic examination of biopsy from the lytic lesion in left index finger surprisingly revealed



Fig.1 : Lytic lesion in proximal phalynx of index finger.

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plasmacytoma(Fig.2). PET-scan was suggestive of osteopenia with multiple osteolytic lesions in cervical and dorsal vertebrae. Serum proteins

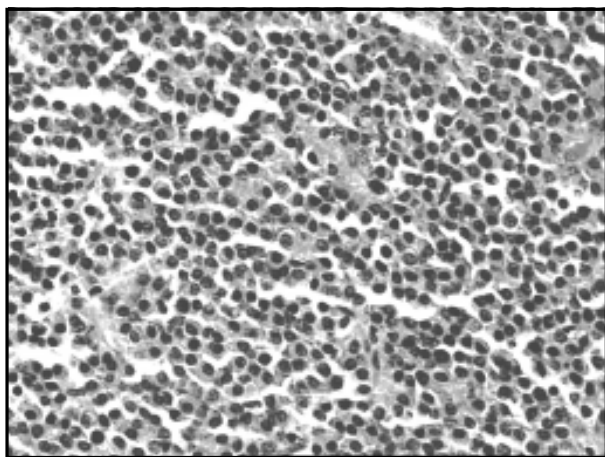


Fig. 2 : Biopsy from index finger lytic lesion-plasmacytoma.(100X)

were 7.1gm%, s. albumin-3.9gm%, s. globulin-3.2gm% with A/G ratio 1.2. Serum immunoelectrophoresis (SIEP) revealed a monoclonal band and Bence-Jones protein was detected in urine.  $\beta$ -2 microglobulin was raised 4.87  $\mu$ g/ml. Bone marrow aspiration revealed 27% plasma cells and bone marrow biopsy also confirmed an increase of plasma cells. Diagnosis of multiple myeloma, stage II (International Staging System (ISS) was made. She received treatment with thalidomide and dexamethasone pulses. After 3 months of treatment with thalidomide and dexamethasone along with bisphosphonates, patient's disease had progressed symptomatically. She developed renal failure and succumbed to multiple myeloma.

## DISCUSSION

The most common differential diagnosis for a skeletal lesion in a patient of carcinoma breast is skeletal metastasis. Bone is the most common site for initial recurrence in patients of carcinoma breast (40-75%) apart from loco-regional recurrence.<sup>1</sup> Clinical presentation for bone metastasis in breast cancer can be in the

form of intractable bone pain, hypercalcemia, pathological fracture, nerve compression syndromes, spinal cord compression, and marrow suppression. Distribution of tumour metastasis in carcinoma breast or any solid tumour is due to random blood flow, and in part to local environment. Tumours grow in the most highly vascularized areas, particularly in the red bone marrow of axial skeleton and proximal ends of the long bones and the skull. The axial skeleton is involved in majority of the cases (62.5%), the spine being the commonest site of tumour metastasis. Skeletal metastasis in distal appendicular skeleton affecting small bones of hands and feet is rare in solid tumours including carcinoma breast.<sup>2,4</sup> Melanoma and renal cell carcinoma are amongst the solid tumours where distal appendicular skeletal metastasis has been reported more frequently as compared to the other tumour types.

The differential diagnosis for a lytic lesion in pharyngeal bone in a patient of carcinoma breast could be bony metastatic disease, infectious lesions like osteomyelitis, tubercular dactylitis and rarely primary bone disorders like plasmacytoma or multiple myeloma (as in our case).

Ovarian, endometrial, colorectal, gall bladder, lung carcinomas, cutaneous melanomas, soft tissue sarcomas, and rarely leukemias and lymphomas have been reported as second/co-existing malignancies in a case of carcinoma breast. Long term follow up studies in patients of carcinoma breast have suggested increased risk of second neoplasm following breast cancer.<sup>5,7</sup> The observed increased standardized Incidence Ratio (SIR) was 1.14 for second primary neoplasms in patients of carcinoma breast in one study.<sup>6</sup> The largest excess risk had been for soft tissue sarcomas (STS), with 10 cases observed versus 3.1 expected (SIR = 3.20).<sup>6</sup> The SIR was 1.04 for <5 years and 1.25 for =5 years

since the original diagnosis of breast cancer suggesting increased risk with increasing duration from the initial diagnosis of breast cancer. Radiotherapy and alkylating agents used in the treatment of carcinoma breast pose the risk of myelodysplasia and secondary leukemias.<sup>7</sup> Plasma cell dyscrasias-plasmacytoma and multiple myeloma have rarely been reported in the literature<sup>5</sup> co-existing with carcinoma breast. Multiple myeloma was reported in 5 out of 443 second neoplasms (SIR-0.68)<sup>6</sup>

The commonest cause for bone pain or skeletal pain in a patient with carcinoma breast would be skeletal metastasis. However a possibility although rare, of primary bone disorders like plasmacytoma or multiple myeloma should also be kept in mind while evaluating bony pain particularly involving unusual sites like distal appendicular skeleton.

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