

Metastatic Breast Cancer. Occurance After Autologous Hematopoietic Stem Cell Transplantation for Multiple Myeloma: Case Report

Multipl Miyelom İçin Yapılan Otolog Hematopoetik Kök Hücre Nakli Sonrasında Ortaya Çıkan Bir Metastatik Meme Kanseri Olgusu

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ABSTRACT Multiple myeloma is a systemic malignancy of plasma cells that is highly treatable but rarely curable. Autologous hematopoietic stem cell transplantation (AHSCT) is the therapy of choice for the treatment of MM patients. Although recurrence of disease remains the major cause of failure following AHSCT with relapse rates approaching 80%, secondary malignancies have been recognized with increasing frequency (1.6-4.5%), especially myelodysplastic syndrome (MDS) and acute myelogenous leukemia (AML). It has also been suggested that high dose therapy may play a direct role in the development of second solid tumors following AHSCT, although much less information has been published on the risk factors for second solid tumor development. Herein we report the first case of a metastatic breast cancer occurring after AHSCT for a multiple myeloma patient in remission for 6 years. This case report serves to demonstrate that clinicians should consider metastatic breast cancer as a cause of lytic bone lesions mimicking relapse of multiple myeloma.

Key Words: Multiple myeloma; breast neoplasms

ÖZET Multipl miyelom (MM) plazma hücrelerinin, yüksek oranda tedavi edilebilen fakat nadiren kür sağlanabilen, sistemik bir malinitesidir. Otolog hematopoetik kök hücre nakli (OHKHN) MM hastalarının tedavisinin esas unsurlarından biridir. OHKHN sonrasında tedavi başarısızlığının esas nedeni %80'lere ulaşan oranda hastalık relapsı olmasına rağmen, tedavinin geç komplikasyonu olan ikincil malinitelerin, özellikle myelodisplastik sendrom (MDS) ve akut miyeloblastik lösemi (AML), sıklığı da artmaktadır (%1.6-4.5). Yüksek doz tedavinin kendisinin de OHKHN sonrasında ikincil solid tümör gelişmesinde rolü olabileceği öne sürülmektedir. Biz burada OHKHN yapılmış olan ve 6 yıldır remisyonda olan multipl miyelomlu bir hastada gelişen ilk meme kanseri olgusunu sunuyoruz. Bu olgu aynı zamanda multipl miyelom relapsını taklit eden litik kemik lezyonlarının, klinisyenlere metastatik meme kanserini düşündürmesi gerektiğini de göstermektedir.

Anahtar Kelimeler: Multipl miyelom; meme kanseri

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Multiple myeloma (MM) is a systemic malignancy of plasma cells that is highly treatable but rarely curable. AHSCT is the therapy of choice for the treatment of MM patients. Although recurrence of disease remains the major cause of failure following AHSCT with relapse rates approaching 80%, secondary malignancies have been recognized with increasing frequency (1.6-4.5%), especially MDS and AML.¹⁻³ It has also been suggested that high dose therapy may play a direct role in the development of second solid tumors following AHSCT, although much less

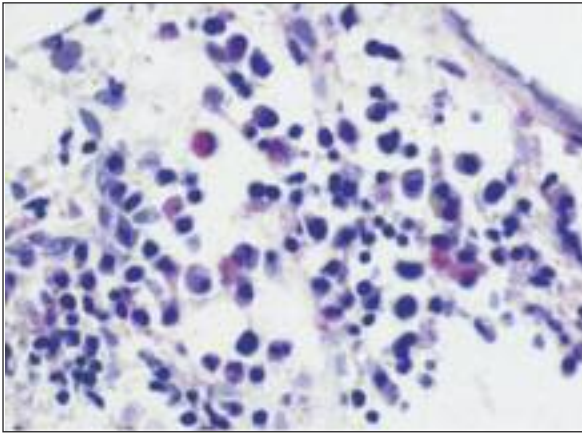


FIGURE 1: Bone marrow biopsy with plasma cell infiltration (200XHE).



FIGURE 2: Direct radiograph of thoracolumbar spine shows compression in Th11-12, L1-2 vertebra body.

information has been published on the risk factors for second solid tumor development.⁴ Herein we report the first case of a metastatic breast cancer occurring after AHSCT for a MM patient in remission for 6 years. This case report serves to demon-

strate that clinicians should consider metastatic breast cancer as a cause of lytic bone lesions mimicking relapse of MM.

CASE REPORT

In October 2000 a 57-year-old women was admitted with a recently occurred history of severe back pain, fatigue and weight loss. Thoracolumbar magnetic resonance imaging (MRI) showed osteolytic lesions on Th12 and L1 vertebra body. Bone marrow biopsy showed 70-75% plasma cell infiltration (Figure 1). Serum IgA: 3400 mg/dL (8 times higher than normal) and renal function tests was normal. The patient was diagnosed with stage IIIA MM. After radiotherapy of Th12 and L1 vertebra the patient received 5 cycles of vincristine, adriamycine

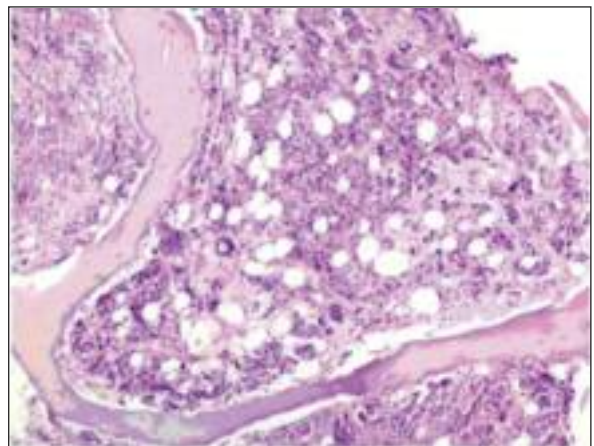


FIGURE 3: Bone marrow biopsy. Epithelial tumor is infiltrating intertrabecular areas (40XHE).

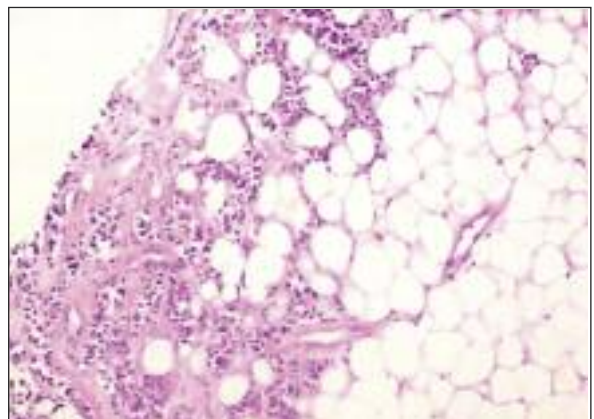


FIGURE 4: Breast biopsy. Infiltrative ductal carcinoma cells are invading adipose lobules of breast parenchyma (100XHE).

and dexamethasone chemotherapy. In June 2001 after high dose melphalan AHSCT was performed. With mostly pamidronate (then switched to zoledronic acid) she was in complete remission until February 2006 when she admitted again with back pain. Direct radiography of thoracolumbar spine showed collapse of Th11-12, L1-2 vertebra (Figure 2). MRI showed lytic lesions in Th11 and L1 vertebra suspecting relapse of the disease. But protein electrophoresis and serum IgA level was normal range. Bone marrow biopsy showed a tumoral infiltration, that was filling intertrabecular areas. Tumor was in epithelial morphology with a desmoplastic stroma (Figure 3). Immunohistochemically, neoplastic cells were expressing estrogen and progesterone receptor, keratin 19, keratin 7. But, there was not positivity for keratin 20. Mammography and computed tomography was performed for detecting the primary tumor. Mammography showed 1.5 x 1 cm malign microcalcified masses, one in the central and the other in the inferior middle part of left breast. Stereotactic biopsy was performed and infiltrating ductal carcinoma of the breast was diagnosed with positive staining for estrogen and progesterone receptors and negative staining for c-erb B2 (score 0) (Figure 4). Thoracic computed tomography showed multiple milimetric bilateral parancimal metastatic nodules in the lung. In imaging studies no other metastatic region was found except lung and bone. After six cycles of paclitaxel and capecitabine chemotherapy she was followed on aromatase inhibitor and zoledronic acid therapy. The patient is relapse free for over a year regarding both malignancies.

DISCUSSION

Because MM had been diagnosed in this patient, the imaging studies and her clinical findings 5 ye-

ars after AHSCT pointed to the relapse of the disease. But after evaluations secondary metastatic breast cancer was diagnosed. After AHSCT especially MDS and AML was seen as secondary malignancies, but secondary solid tumors was seen rarely (0.5-2%) in the literature.^{1,3,5} The risk for secondary malignancies increases by time. After AHSCT the incidence for developing second malignancies varies between 2.2-4% for 10 year, 6.7-11% for 15 year and median time 50-68 months.^{2,3,6,7} In our case 61 months after AHSCT breast cancer was seen. The largest series of stem cell transplant patients (autologous and allogeneic) reported that those patients who were less than 10 years of age at the time of transplantation have accumulated a 60-fold higher risk of developing any secondary malignancy and a 33-fold higher risk of that tumor being a nonhematopoietic solid tumor. The risks all remained significantly elevated for each age group, with the exception of the risk for solid tumor in individuals who were more than 40 years old at the time of transplantation.⁶ Our case was 58-year-old at time of transplantation, so may be a co-incidence of myeloma and breast cancer.

The bone metastasis of breast cancer can resemble the bone involvement of MM. There are 5 cases of metastatic breast cancer patients who were diagnosed with MM after follow up, but one patient had both tumors synchronously in the literature.⁸⁻¹¹ In our patient breast cancer developed after MM. There is a case of breast cancer that developed 68 months after AHSCT for a Hodgkin lymphoma patient.³ This is the first case report of a metastatic breast cancer occurring after AHSCT for MM patient, and its presentation mimicking myeloma relaps merits consideration.

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