
Plasmacytoma in the Bilateral Breast

Mehmet DAĞLI*, Taner DEMİRER**, Meltem AYLI***, Rauf HAZNEDAR****,
Nazan GÜNEL****, Gülsan SUCAK****, Turgay FEN*, Meltem MORAN***,
Tülay ÜSTÜN***, Celalettin AYBİRDİ***, Mustafa ÇAVUŞOĞLU***,
Süleyman DİNÇER***, Akın UYSAL**

* Ankara Oncology Hospital, Demetevler
** Department of Hematology, Ankara University Medical School, Sıhhiye,
*** Ankara Numune Hospital Bone Marrow Unit, Sıhhiye,
**** Department of Hematology, Gazi University Medical School, Sıhhiye, Ankara, TURKEY

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INTRODUCTION

Multiple myeloma (MM) is a B-cell malignancy of neoplastic plasma cells that generally produce a monoclonal immunoglobulin protein. This disease causes clinical symptoms by way of tumor mass effects (pain), cytokine production (anemia) and protein deposition in organs such as kidney and heart. Clinical manifestations of myeloma vary as a result of the heterogeneous biology and span the entire spectrum from indolent disease to highly aggressive myeloma presenting with extramedullary features^[1]. Extraskelatal involvement by MM is well recognized, with involvement of the liver, spleen, kidneys and lymph nodes seen in more than 70% of patients at autopsy^[2]. However, breast involvement is rare as part of a MM and only few cases reported^[3]. We have described a case of a soft tissue plasmacytoma involving bilateral breast which is a very unusual manifestation of MM.

A CASE REPORT

A 34-years-old woman presented with back pain and fatigue and was found to have lytic bone lesions

and a serum monoclonal paraprotein of 4000 mg/dL. A serum immunofixation showed the paraprotein as IgG-Lambda. Bone marrow biopsy showed hypercellular marrow composed of 40% atypical plasma cells with binucleate forms, confirming the diagnosis of MM. The patient was treated with vincristine, doxorubicin and dexamethasone (VAD regimen) for six months and radiotherapy for local lesions. She had no response. The patient's disease continued to progress. Her serum paraprotein level and bone marrow plasma cells increased. Therefore, she was treated with a high-dose chemotherapy and double autologous stem cell transplantation. In the first; peripheral blood stem cell mobilization was done with cyclophosphamide and etoposid, followed by granulocyte-colony stimulating factor. As a conditioning regimen melphalan 50 mg/m²/day was given for 4 days. Then stem cell infusion was done. The patient tolerated this high-dose therapy very well. One month later, the patient was admitted for second transplant associated with a complain of discomfort and palpable masses in her bilateral breasts. The patient had no personal history of breast disease, previ-

ously. No chest wall radiation had been given. On physical examination, multiple, mobile, easily palpable masses were noted in both breasts. Multiple, bilateral, well circumscribed masses were imaged mammographically. No associated microcalcifications were present (Figure 1). Ultrasonography was then performed, which demonstrated, 12 x 17 mm, 10 x 7 mm and multiple smaller solid masses with a hypoechoic center and heterogeneous echotexture (Figure 2). Excisional biopsy of the mass in the left breast was then performed. The histopathology of this specimen showed many atypical plasma cells containing irregular nuclei with prominent nucleoli associated with mature plasma cells which was diagnostic for plasmacytoma (Figure 3).

DISCUSSION

Breast involvement by immunolymphoproliferative disorders is rare. Primary and secondary malignant lymphomas of the breast are much more common than MM, of which only 16 cases have been described^[4]. Extramedullary plasmacytomas occur most frequently in the respiratory tract, while plasmacytomas occurring in the setting of extraskelatal spread in MM most commonly occur in the spleen, liver, lymph nodes and kidneys^[2]. Plasmacytomas of the breast, either as solitary extramedullary tumors or as evidence of dissemination of MM, are exceedingly rare. Ross et al described a patient with plasmacytoma of the breast and reviewed the 10 previously reported cases^[5]. These investigators noted that MM of the breast tends to be 1-7.5 cm in diameter and may be unilateral or bilateral; may precede, occur synchronously with, or become evident subsequent to the diagnosis of breast plasmacytoma; and may herald a recurrence of previously quiescent MM^[5].

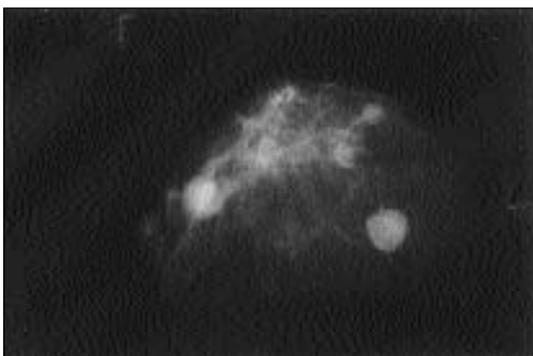


Figure 1. Mammography shows multiple, bilateral, well circumscribed masses with no associated microcalcifications.

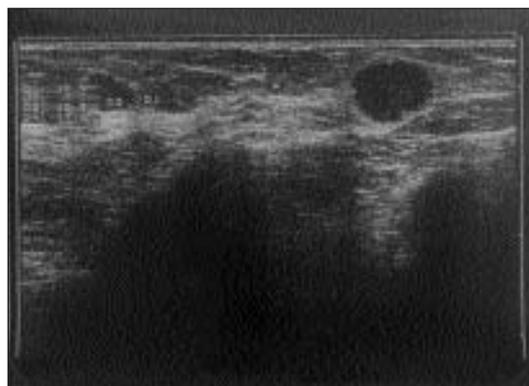


Figure 2. Ultrasonography demonstrates 12 x 17 mm, 10 x 7 mm and multiple smaller solid masses with a hypoechoic center and heterogeneous echotexture.

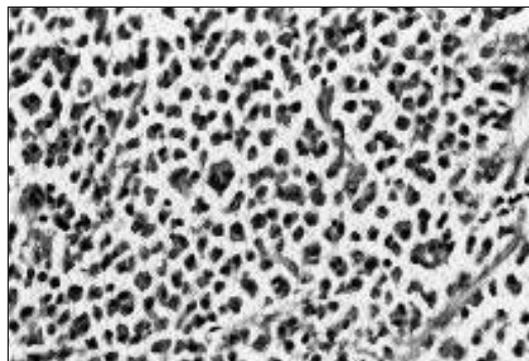


Figure 3. The histopathology of specimen shows many atypical plasma cells containing irregular nuclei with prominent nucleoli associated with mature plasma cells which is diagnostic for plasmacytoma.

The clinical course of patients with mammary plasmacytomas depends on whether the lesion is solitary or part of disseminated myeloma. Following the diagnosis of a mammary plasmacytoma, workup with continued, long term surveillance for evidence of systemic involvement is necessary. Although the majority of patients eventually develop MM, sometimes patients may be free of systemic disease years after surgical excision of their breast tumors^[6,7].

Distinguishing an extramedullary plasmacytoma of the breast from a primary mammary adenocarcinoma is critical to avoid unnecessary surgery and guide therapy. Radiologic scans may not be useful since findings of

ultrasound examination of mammary plasmacytoma in our case showed multiple solid masses with a hypoechoic center and heterogeneous echotexture which is similar to primary adenocarcinoma of the breast (Figure 2). Therefore, a fine needle aspiration biopsy was performed in our case for a definitive diagnosis. Immunohistochemical staining performed on the aspirated cells established the diagnosis of MM.

In summary, the most common cause for the development of a new breast mass in a patient with MM is breast carcinoma^[8]. Distinguishing a plasmacytoma of the breast from breast carcinoma is critical to avoid unnecessary surgery and chemotherapy. Therefore, the presence of a well-defined mass in a patient with MM should cause the clinicians and radiologists to include plasmacytoma, either as solitary extramedullary tumor or as evidence of dissemination of MM, in the differential diagnosis. Only a fine needle aspiration and/or excisional biopsy will be enough for a definitive diagnosis and appropriate treatment in this setting.

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Address for Correspondence:

Mehmet DAĐLI, MD

Department of Hematology
Ankara Oncology Hospital
06200, Demetevler, Ankara, TURKEY

e-mail: drdagli@hotmail.com