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Multiple Myeloma: A Rare Presentation as Breast Lump

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Abstract **Case Report**

Introduction: Multiple myeloma is a monoclonal immunoproliferative neoplasm of B lymphoid cells. Secondary extramedullary plasmacytoma is usually involved in advanced stages. Here we report an unusual presentation of multiple myeloma relapsing as a breast lump focusing on important findings and treatment given. ***Case Details*:** A 40-year-old woman with a past history of isolated plasmacytoma of 5th thoracic vertebra, treated with radical radiotherapy 45 Gray in 23 fractions now presented with left breast lump of 2 months duration measuring 2 x 1 cm involving the central quadrant. Ultrasonogram showed a BIRADS V lesion. A core biopsy with IHC was reported as plasmacytoma. Following this multiple myeloma work up was done. Bone marrow study showed 10% plasma cells, serum electrophoresis showed M band, raised ESR with anemia. Patient was diagnosed with Multiple Myeloma – International staging system stage III. ***Results:*** Patient was started on combination chemotherapy with 6 cycles of Bortezomib, Lenalidomide and Dexamethasone .Following treatment showed only a partial response following which the patient was started on carfilzomib. However, her disease progressed and the patient succumbed to the disease. ***Conclusion****:* Extramedullary presentation of multiple myeloma as a breast lump which itself is a rare entity despite treatment has an unfavourable course. Any patient presenting with breast lump should be evaluated carefully mostly if they have a previous history of plasmacytoma/ multiple myeloma. A proper identification of tumour pathology can evade patient from unwanted extensive surgery and thus a delay in definitive systemic treatment.

Keywords: Extramedullary, plasmacytoma, breast, secondary, lesion.

INTRODUCTION

Multiple myeloma is a monoclonal immunoproliferative neoplasm of B lymphoid cells [1]. It is characterised by clonal proliferation of plasma cells in bone marrow. It may also involve extraosseous extramedullary sites. Secondary extramedullary plasmacytomas are usually involved in advanced stages. Most of the reports indicates that involvement of upper respiratory tract and oral cavity is seen in extramedullary plasmacytoma, whereas presentation in breast is quite rare [2]. Multiple myeloma presenting as a breast lump is a very rarely documented scenario [3-6]. Here we report an unusual presentation of multiple myeloma relapsing as a breast lump with focus on pathological findings, imaging findings as well as treatment given.

CASE REPORT

A 40-year-old woman with a past history of isolated plasmacytoma of 5th thoracic vertebra, treated with radical radiotherapy 45 Gray in 23 fractions (1.8 Gray per fraction) now presented with asymptomatic left breast lump of 2 months duration. On examination of the left breast, a mass measuring 2 x 1 cm involving the central quadrant, firm in consistency and mobile over the chest wall was seen. There was no overlying skin fixation or axillary or supraclavicular lymphadenopathy. An ultrasonomammography was performed and it showed a relatively well-defined high-density lesion in the outer quadrant of left breast which appeared heterogeneously hypoechoic on ultrasonogram with internal vascularity with suspicious micro-calcifications - BIRADS V lesion (Figure 1 & 2).

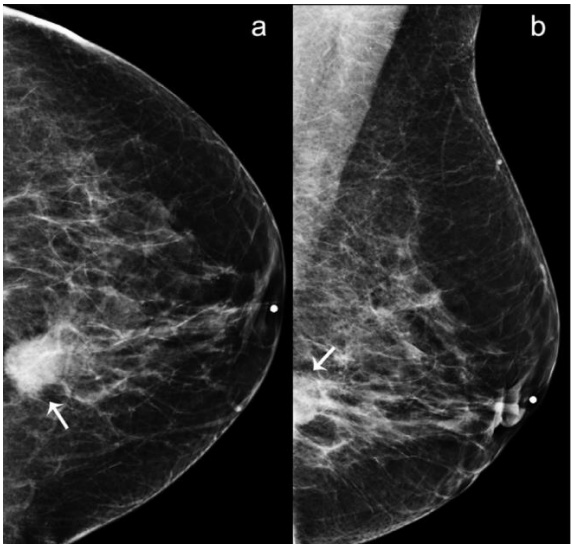

Fig 1: Mammogram left breast showing dense breasts with lesion

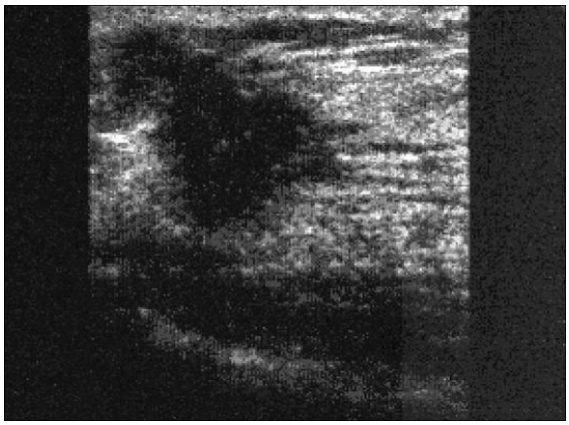

Fig 2: Ultrasound of the breast showing a hypoechoic solid mass

Fine Needle aspiration cytology of the breast lump was inconclusive. A core biopsy from the breast lump was reported as plasmacytoma (Figure 3). Immunohistochemistry stains CD 138 and CD 56 were positive, lambda light chain was positive with kappa restriction and CK was negative (Figures 4 and 5). In order to exclude a synchronous primary breast malignancy, IHC markers for ER, PR and Her 2 were also done and was found negative.

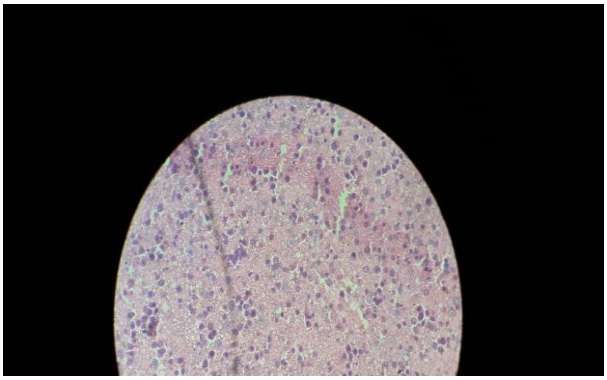

Fig 3: Cell block study showing plasma cells

Fig 4: IHC staining – CD 56 positivity

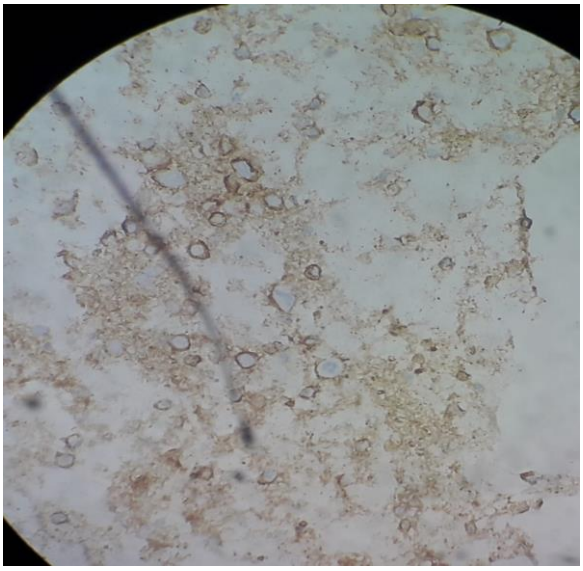

Fig 5: IHC study - Lambda chain positivity

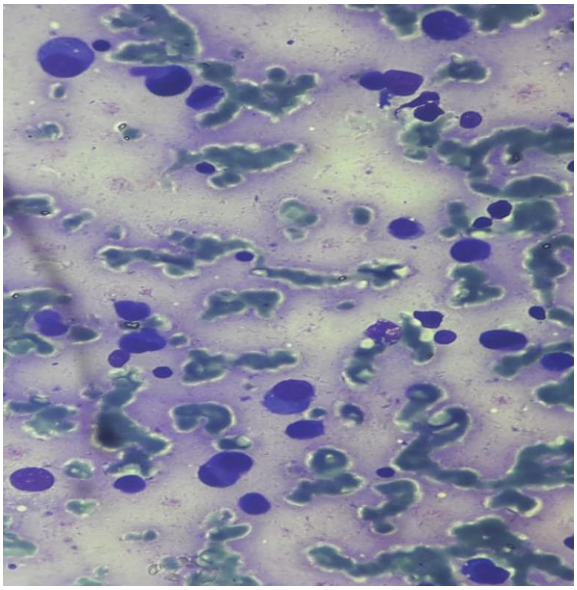

Fig 6: Giemsa stain, Sbone marrow aspirate showing plasma cells

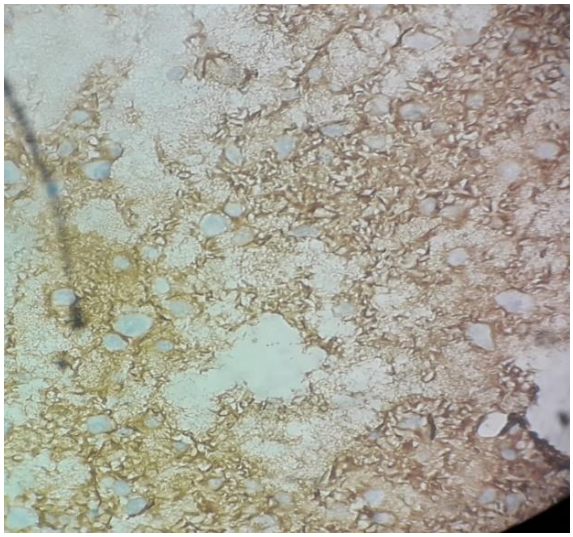

Fig 7: IHC staining - Kappa chain (more in this case), kappa restriction present

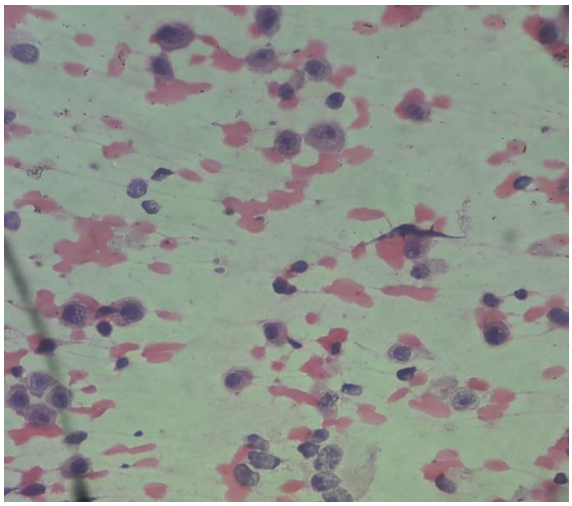

Fig 8: Pap stain – showing plasmablast and plasma cells

Following this biopsy report, work-up for multiple myeloma was done. Bone marrow examination showed more than 10% plasma cells. Serum electrophoresis showed a discrete Monoclonal band. Laboratory investigations showed anaemia with raised erythrocyte sedimentation rate. Biochemical evaluation was done and showed normal renal parameters and serum calcium level. Patient was diagnosed with Multiple Myeloma – International Staging system stage III. She was started on treatment with combination chemotherapy with Bortezomib, Lenalidomide and Dexamethasone. After 6 cycles of chemotherapy, the disease showed only a partial response following which the patient was started on carfilzomib. However, her disease progressed and the patient succumbed to the disease.

DISCUSSION

Extramedullary plasmacytomas of the breast presenting at diagnosis is usually rare [3-6]. Most are seen during the relapse phase of multiple myeloma. The age at diagnosis is usually in the fifth decade, (mean age at 53 years), but in our case, the patient was only 40 years of age which is unusual. Usually the disease is unilateral as per the literature but can also be bilateral [7].

The mammographic features points to a malignant picture, with an ultrasound finding of hypoechoic lesion with internal vascularity. According to literature ultrasonographic pattern is heterogenous with hypoechoic, hyperechoic or anechoic are reported [8].

The prognosis is variable for extramedullary plasmacytoma. Usually the solitary plasmacytomas have a good prognosis [9]. Radiotherapy and surgery are considered as curative treatment [9]. Only a small proportion of patients progress to multiple myeloma, which has been shown to have unfavourable outcome in most patients despite treatment [10]. In this scenario, the patient initially had a solitary plasmacytoma of the bone, which was treated with radiation treatment, but in due course developed multiple myeloma ISS stage III which is already suggestive of a poor prognosis. She presented with breast lump, causing much more biological complexity due to hematogenous dissemination. The potential treatment plan in this case is first line chemotherapy with bortezomib, lenalidomide and dexona. In case of poor response, second line treatment with carfilzomib based chemotherapy is considered. The response to treatment was very minimal with both first line and second line chemotherapy.

CONCLUSION

In conclusion, extramedullary presentation of multiple myeloma as a breast lump which itself is a rare entity, despite treatment has an unfavourable course. Moreover, any patient presenting with breast lump should be evaluated carefully, especially if they have a prior history of plasmacytoma or multiple myeloma, as extramedullary plasmacytomas can occur in unusal sites like breast in advanced stages. A proper identification of tumour pathology can evade patient from unwanted extensive surgery and thus a delay in definitive systemic treatment.

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