



Case Report

Primary non-Hodgkin's lymphoma of the breast: a case report

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ABSTRACT: The breast is rarely a primary site for extranodal lymphoma. Majority of primary Non-Hodgkin's lymphoma of breast occurring in younger age group are bilateral and those in older age group are unilateral. They are of B cell phenotype. We report a rare case of Primary Non-Hodgkin's lymphoma of Breast-B cell phenotype diagnosed on fine needle aspiration cytology and confirmed by histopathological examination and immunohistochemical markers.

KEY WORDS: *Non-Hodgkin's Lymphoma; Breast; Immunohistochemistry; Primary NHL of breast*

INTRODUCTION

The breast is rarely a primary site for extranodal lymphoma. The reported incidence of Primary Breast Lymphoma (PBL) varies from 0.04% to 0.53% of all malignant diseases of breast¹⁻⁵. It represents between 0.38% to 0.7% of all Non-Hodgkin's lymphoma⁶ and 1.7% to 3.0% of all extranodal lymphomas^{3,7,8}. A diagnosis of Primary Breast Lymphoma can be established on FNAC but biopsy along with supportive immunohistochemical studies is required for confirmation in such cases¹. Majority of the patients of PBL are women in the age group of 31-81 yrs. Bilateral Primary Breast lymphoma affects younger women and unilateral type predominantly is seen affecting older women. Most reported patients with Primary Breast Lymphoma are of Non-Hodgkin's lymphoma of B cell phenotype³.

CASE DETAILS

A 70 years elderly female reported to our hospital with the history of lump in left breast for 15 days. On clinical examination a 10x10x4 cm lump retro-areolar in location, irregular, nodular and hard in consistency was noted. Skin over the nipple was

normal and there was no discharge from nipple. Only left axillary lymph nodes were palpable. On examination of other systems no abnormality was detected. Fine needle aspiration of breast mass and left axillary lymph node was advised. FNAC smears from breast mass showed moderate cellularity, comprising of mixed population of malignant lymphoid cells. Cells were monomorphic, with large hyperchromatic eccentrically placed nuclei with multiple nucleoli (Figure 1).

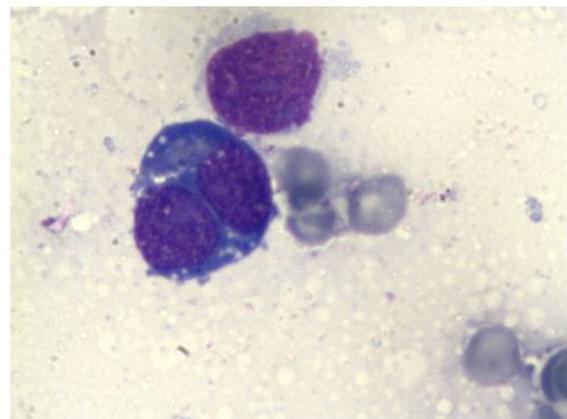


Figure 1: Cytology x 400 (oil immersion)

FNAC from left axillary mass was highly cellular and showed similar features as that from the breast mass. On the basis of cytological features a diagnosis of malignant lymphoma of breast was made. Later on, an incision biopsy was received. Breast incisional biopsy showed monomorphic

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population large cell with multiple hyperchromatic nucleoli along with breast tissue (**Figure 2**). Immunohistochemical staining was performed (by polymer detection kit). The tumour cells were positive for CD45, CD20 and CD79a (**Figure 3**) and Negative for CD3. A final diagnosis of Primary Breast Lymphoma -Diffuse large B cell phenotype was reported.

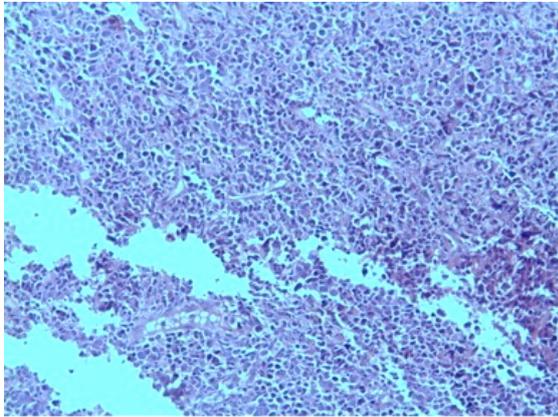


Figure 2: H and E x 50 (low power)

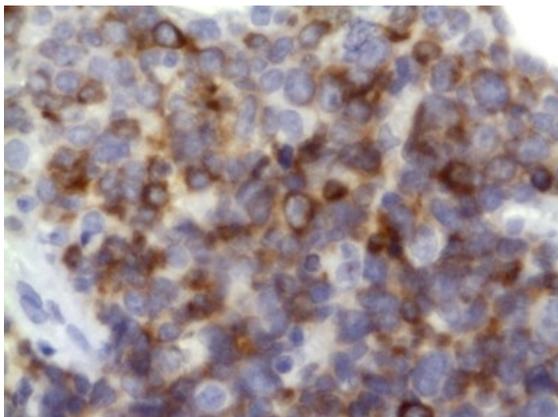


Figure 3: CD79a x 100 (High power)

DISCUSSION

Primary breast lymphoma has been reported and described as early as 1893⁷. Malignant lymphoma of the breast may present as both primary and secondary tumour, both of these are rare. Primary breast lymphoma may appear at any age but majority of the patients are postmenopausal women. Clinically Primary Breast Lymphoma presents with similar features as that of breast carcinoma. It usually presents with painless lump sometimes multinodular and which can be bilateral in 10% of cases⁹.

Primary Breast Lymphoma affects two distinct age groups, one which affects young women is frequently bilateral and often associated with pregnancy and is Burkitt- type lymphoma. The second group affects older women and usually is unilateral^{3,4}.

The criteria for defining and documentation of Primary Breast Lymphoma first proposed by Wiseman and Liao with minor modification accepted by others are i) Availability of adequate histological material ii) Presence of breast tissue in or adjacent to the lymphoma infiltrate iii) No concurrent nodal disease except for the involvement of axillary lymph node. iv) No previous lymphoma in other organ or tissue^{2,4,7,9-11}.

Currently, fine needle aspiration cytology is the method of choice for the diagnosis of PBL and it has better diagnostic accuracy^{3,12}. If any doubt exists on morphological grounds as to the nature of malignant tumour of the breast, the possibility of primary breast lymphoma should always be considered and immunohistochemical studies using panel of antibodies that includes minimum markers of CD45, CD45RO, CD3, CD20 and epithelial markers should be mandatory⁴.

The clinical presentation and radiology of breast lymphoma and carcinoma are similar. Both present as painless enlarging breast lump. On mammogram lymphoma may lack the irregular border of infiltrating carcinoma and more than half exhibit no calcification. Pathology remains the gold standard to differentiate these two malignancies. Histopathology, IHC and/ or flowcytometry are helpful in differentiating primary breast lymphoma from other tumours¹².

Roberto Giardini et al studied thirty three cases of Primary Non-Hodgkin's Lymphoma of the female breast. In their study it was found that right breast involvement was present in 51.5% of cases and mostly in upper quadrant and left breast was involved in 42.4% of cases⁵.

Diagnosis of Primary Breast Lymphoma (PBL) is made by breast excision or aspiration biopsy. The commonest histologic type of Primary Breast Lymphoma is diffuse large cell lymphoma- B cell phenotype as seen in the studies by Ho Jong Jeon et al³, Roberto Giardini et al⁵ and Mu-tai Liu et al⁷. Primary Breast Diffuse large B cell lymphoma has poor prognosis as compared to extranodal diffuse large B cell lymphoma¹³.

The management of Primary Non-Hodgkin's lymphoma of breast is based on histologic grade. Patients with low grade disease can be managed with local therapy alone. The role of chemotherapy in this group is unclear. Patients with intermediate or high grade disease have better out come if chemotherapy is included. Overall 5 year survival rate is 43%⁵.

CONCLUSION

We report a rare case of Primary Breast Lymphoma -B cell type, involving the left breast and ipsilateral axillary lymph node. While examining cytology of painless breast lump, the differential diagnosis of Primary Breast Lymphoma should always be

considered. The diagnosis of Primary Breast Lymphoma must always be confirmed by histopathology and immunohistochemistry.

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