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CASE REPORT

# A Rare Tumor of Breast — Diffuse B-Cell Lymphoma

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**Abstract:**

Primary breast lymphoma (PBL) is considered a rare clinical entity forming about 0.4%-0.5% of all breast tumors andforming about 1.7%-2.2% of extra nodal NHL. Here we report a case of postmenopausal women presenting with a breast lump turned out to be a Diffuse B-cell Lymphoma of breast.

**Keywords:**

Diffuse B-cell lymphoma, rare breast tumors, lymphoma

## Introduction

Lymphomas are the most common hematologic cancers, but breast association with lymphoma is rare and PBL is even rarer, forming 0.04%-0.5% of all primary breast cancers and about 0.85%-2.2% of extranodal lymphomasabout[1]. The incidence of PBL in all non-Hodgkin's lymphoma (NHL) cases is less than 1% and the most common histology in PBL was diffuse large B-cell[2].Though it mimicks clinical presentation and radiological features of epithelial breast malignancies, the prognosis and treatment are different[3].

## Case Report

62-year-oldpost-menopausal female presented with right breast lump with 1 month duration which was gradually growing in size with no fever, pain, nipple discharge or retraction. No history of loss of appetite and weight, chest or abdominal complaints. No previous history of surgeries in the breast or radiation or Oral contraceptive pills intake. Her brother was diagnosed with brain tumor and he succumbed to disease within 2 months of diagnosis. No family history of breast, ovarian, uterine or colonic malignancy.

On examination patient a lump of size 5x4 cm palpable in the right lower inner quadrant with lobulated surface, firm in consistency, moves with breast tissue and not attached to pectoralis major muscle and chest wall. No axillary lymph node is enlarged. We proceeded with MRI breast which revealed lobulated mass lesion in inferior medial quadrant of right breast with extension to skin with nodular and peripheral enhancement. USG guided core biopsy revealed atypical mononuclear infiltrates suspicious of lymphoproliferative disorder[*Fig-1*]. Further evaluation with immunohistochemistry showed positive for CD 20, CD 10, C-MYC with Ki67 – 35-40% and MUM-1 – 30-35% which was consistent with diffuse large B-cell lymphoma, NOS activated B-cell. Hence patient was subjected to PET-CT which showed irregular lobulated solid lesion in right upper and lower inner quadrant of right breast with no other metabolically active lesion in body[*Fig- 2 & 3*].

## Discussion

Non-Hodgkin's diffuse large B-cell lymphoma (DLBCL) is the most common histo-pathologial subtype of PBL, followed by follicular and mucosal-associated lymphoid tissue associated lymphomas; breast involvement with Hodgkin's disease or T-cell lymphomas is very rare [1]. The rarity of this cancer is because the breast contains lesslymphoid tissue than other organs, such as the intestinesand lungs, where primary lymphomas aremore common [2]. Breast Lymphomas have been categorized into primary breast lymphoma (PBL) and secondary breast lymphoma (SBL) types [3].

The typical presentation is of a painless unilateral breast mass [4]. The typical presentation seen in woman in 5th or 6th decade with a solitary, unilateral, predominantly right-sided breast lump[4]. The infrequent presentation includes skin edema, erythema and retraction [5]. Bilateral involvement of the breast appears to be a feature of aggressive disease with poor prognosis [5]. PBL is reported to exhibit poor prognosis among extranodal B-cell lymphomas, reasons being unknown[6]. Extranodal

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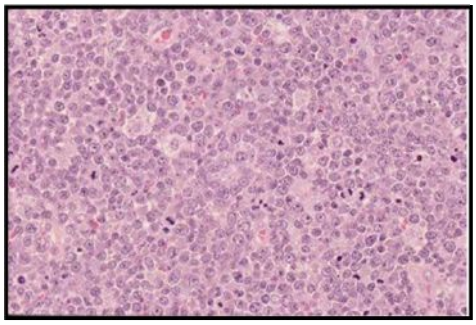

***Fig. 1 HPE Showing Atypical Mononuclear Infiltrates Suspicious of lymphoproliferative Disorder***

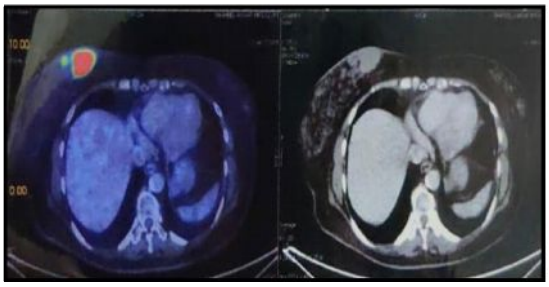

***Fig. 2 PET CT Showing Irregular lobulated Solid Lesion in Upper and Lower Inner Quadrant of Right Breast***

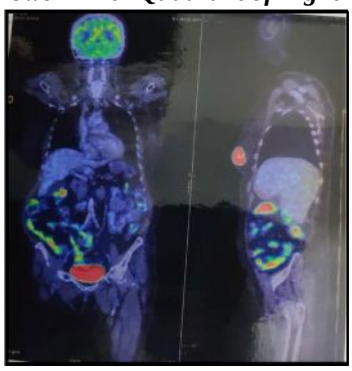

***Fig. 3 PET CT Showing Irregular lobulated Solid Lesion in Right Breast with no other Metabolically Active Lesion in Body***

sites occur in 40% of cases with common sites involved being gastrointestinal tract, testis, bone, thyroid, skin, central nervous system (CNS), and bone marrow[7].

Hans *et al*. subclassified DLBCL into GCB type and non-GCB type. DLBCL cases of CD10 (+) or CD10 (“) Bcl-6 (+) MUM1 (“) were subclassified as GCB type. CD10 (“) cases with MUM1 (+) regardless of Bcl-6 expression, were subclassified as non-GCB type [8].Of these two types non-GCB type has poor prognosis. Unlike other breast tumor DLBCL treatment is mainly chemotherapy rather than surgery. An anthracycline-based regimen is the main-stay of the treatment of PBL, with CHOP being the most frequently used regimen as in other nodal forms of DLBCL [6]. CNS relapse is more commonly seen and hence patients may need CNS prophylaxis with rituximab.Radiotherapy has an important role as adjuvant consolidation therapy, particularly in node-negative patients[6].

## Conclusion

Though Primary malignant lymphoma of the breast (PBL) is rare, it is still kept as a substantial differential diagnosis of a breast lump. Since PBL lacks specific clinical and radiological diagnostic features, majority of patients are treated initially as breast cancer patients. Surgery is associated with high morbidity rate in PBL and hence identification of this entity is vital.Surgery should be limited only to a biopsy to confirm the final histological diagnosis of PBL, leaving the curative treatment to radiotherapy and chemotherapy.

**Declarations**

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**Ethical approval:** none required

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