



## PRIMARY EXTRANODAL DIFFUSE LARGE B-CELL LYMPHOMA OF THE AXILLA MIMICKING SOFT TISSUE SARCOMA: A RARE CASE REPORT

### General Surgery

**Prajwal Chandrashekhara\*** Assistant Professor, Department Of General Surgery, K S Hegde Medical Academy, NITTE (Deemed To Be University), Deralakatte, Mangalore, Karnataka, India- 575 018  
\*Corresponding Author

**Dhananjay Kumar** Assistant Professor, Department Of General Surgery, K S Hegde Medical Academy, NITTE (Deemed To Be University), Deralakatte, Mangalore, Karnataka, India- 575 018

**Kalale Radhakrishnan Bhagavan** Professor, Department Of General Surgery, K S Hegde Medical Academy, NITTE (Deemed To Be University), Deralakatte, Mangalore, Karnataka, INDIA- 575 018

### ABSTRACT

**Background:** Diffuse large B-cell lymphoma (DLBCL) accounts for the majority of non-Hodgkin lymphoma cases. Although nodal involvement is more typical, extranodal DLBCL can arise in various sites, including skin, gastrointestinal tract, bone, and soft tissue. Primary axillary extranodal DLBCL is exceptionally rare and may clinically mimic soft tissue sarcoma. This case report highlights a rare presentation of extranodal DLBCL in the axilla with ulceration and rapid progression. **Case Presentation:** A 68-year-old male with no comorbidities presented with a gradually enlarging, painful swelling in the left axilla for four months, which rapidly increased in size during the last month. The mass reached 20×15 cm, became ulcerated, and discharged purulent material. Shoulder mobility was restricted by pain and the compressive nature of the mass. Clinical examination revealed a bosselated, well-margined axillary mass. Differential diagnoses included soft tissue sarcoma and Ewing's sarcoma. Biopsy with histopathological evaluation revealed Germinal Center B-cell type DLBCL. Immunohistochemical analysis revealed strong expression of CD20, CD10, BCL2, and BCL6, with a Ki-67 proliferation index of 80%. CT and PET-CT confirmed a large metabolically active left axillary mass with necrotic areas and regional lymphadenopathy. Six cycles of palliative R-CHOP chemotherapy were administered, leading to notable relief of symptoms. **Conclusion:** Primary extranodal DLBCL of the axilla is a rare and aggressive presentation that may mimic soft tissue malignancies. Maintaining a strong clinical suspicion and performing early histopathological analysis are crucial for establishing the correct diagnosis. R-CHOP chemotherapy remains the mainstay of treatment with favorable initial response, though prognosis depends on disease stage and systemic involvement. Extranodal DLBCL, axillary mass, non-Hodgkin lymphoma, soft tissue tumor mimic, R-CHOP, immunohistochemistry

### KEYWORDS

#### INTRODUCTION

Diffuse large B-cell lymphoma (DLBCL) is the most common subtype of non-Hodgkin lymphoma (NHL), representing approximately 30–40% of adult NHL cases globally (1). It is an aggressive lymphoma characterized by rapidly enlarging lymph nodes or extranodal masses, frequently presenting in both nodal and extranodal sites (2). Extranodal involvement is observed in about 30–40% of DLBCL cases, with common locations being the gastrointestinal tract, central nervous system, testes, skin, bone, and thyroid (3,4). However, primary extranodal involvement of the axillary region is an extremely rare presentation, especially in the absence of systemic lymphadenopathy or nodal disease, posing significant diagnostic challenges (5).

Axillary swellings are more commonly attributed to reactive lymphadenopathy, soft tissue sarcomas, breast malignancies, or metastatic deposits, particularly in older patients (6). When such lesions are rapidly progressive and associated with ulceration or mass effect, lymphoma is often not the initial clinical suspicion. Hence, in such rare presentations, imaging and histopathological correlation are imperative to reach an accurate diagnosis.

A definitive diagnosis is best achieved through a combination of histology and immunohistochemical analysis. DLBCL is typically positive for pan B-cell markers (CD20), and may express BCL6, BCL2, CD10 (especially in the germinal center B-cell-like subtype), and a high Ki-67 proliferation index, which reflects the aggressive nature of the tumor (7,8). PET-CT plays a crucial role in staging, as it is more sensitive than conventional CT in detecting metabolically active nodal and extranodal sites (9,10).

The standard first-line treatment for DLBCL is immunochemotherapy with the R-CHOP regimen (rituximab, cyclophosphamide, doxorubicin, vincristine, and prednisone), which remains effective across different subtypes and sites of presentation (11). Response to therapy is usually monitored using interim and post-treatment PET-CT scans (12).

This report describes an unusual case of primary extranodal DLBCL

arising in the axilla of an elderly male, clinically resembling a soft tissue sarcoma. The unusual presentation, along with its aggressive course and successful response to chemotherapy, highlights the importance of early tissue diagnosis and the need to consider lymphoma in the differential diagnosis of axillary masses.

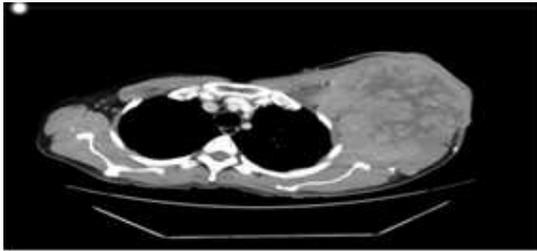
#### Case Presentation

A 68-year-old male presented to the outpatient department with a four-month history of swelling in the left axilla. The swelling began as a 3×3 cm mass (as estimated by patient hand gestures) and progressively enlarged to 20×15 cm, with rapid growth in the last month. The patient experienced dull, throbbing pain and restricted shoulder mobility. For the past month, ulceration with discharge had developed over the swelling.



**Figure 1** – Ulceroproliferative swelling on left axilla

On examination, the mass was approximately 20×20 cm, bosselated, firm, and well-margined. The overlying skin was ulcerated with purulent discharge as shown in Figure 1. Initial clinical suspicion included soft tissue sarcoma, osteosarcoma, or Ewing's sarcoma. There was no systemic lymphadenopathy or hepatosplenomegaly.



**Figure 2** – Axial section of CT image of thorax shows heterogeneously enhancing left axillary lesion with regional lymphadenopathy

Contrast-enhanced CT scan of the thorax showed a heterogeneously enhancing soft tissue mass in the left axilla with regional lymphadenopathy as shown in Figure 2. PET-CT revealed a metabolically active mass with necrotic areas, extending from the chest wall to the overlying skin.

A biopsy of the lesion was performed. Histopathological analysis confirmed a diagnosis of diffuse large B-cell lymphoma of the germinal center B-cell subtype. Immunohistochemistry showed positivity for CD20, CD10, BCL2, and BCL6. Ki-67 proliferative index was approximately 80%.

The patient was started on palliative chemotherapy with the R-CHOP regimen, which includes Rituximab, Cyclophosphamide, Doxorubicin, Vincristine, and Prednisolone. He received six cycles of treatment with good clinical improvement in terms of pain relief and partial regression of mass as shown in Figure 3.



**Figure 3** (a) and (b) - Reduction in size of swelling (a) After first cycle of chemotherapy (b) After 3<sup>rd</sup> cycle of chemotherapy

## DISCUSSION

DLBCL represents a highly heterogeneous entity with variable clinical presentations and biological behavior (1). While nodal involvement is more common, extranodal disease has been increasingly recognized, especially in elderly patients and those with underlying immunosuppression (2,3). The gastrointestinal tract, CNS, skin, and bone marrow are the most frequent extranodal sites. In contrast, primary DLBCL of the axilla without systemic disease is an extremely rare occurrence and often misdiagnosed initially (4,5).

Our case involved a 68-year-old male who presented with a large, rapidly enlarging axillary mass over four months, associated with ulceration and restricted shoulder mobility. Clinical suspicion was initially directed toward a soft tissue sarcoma due to the lesion's rapid progression, firm consistency, and necrotic skin changes. Such atypical clinical presentations often result in diagnostic delays or mismanagement (6,7).

Histopathological analysis confirmed DLBCL, germinal center B-cell-like subtype, with immunopositivity for CD20, CD10, BCL6, and BCL2, and a Ki-67 index of 80%, indicating high proliferative activity. These markers are typical of the GCB subtype, which tends to have a more favorable prognosis than the activated B-cell-like (ABC) subtype (8,9). The use of IHC is crucial in differentiating DLBCL from other round-cell tumors, especially in soft tissue masses where the clinical suspicion may initially lean toward sarcoma or metastatic carcinoma (10).

PET-CT imaging revealed increased FDG uptake confined to the axillary mass with no systemic involvement, thus supporting the diagnosis of primary extranodal DLBCL (11). PET-CT is a vital tool in staging, prognosis assessment, and response evaluation in DLBCL, as it offers metabolic insight beyond the anatomical details provided by conventional imaging (12,13).

The standard of care for DLBCL remains the R-CHOP regimen, which

was administered in our patient. The patient showed marked clinical improvement and regression of the lesion, consistent with previously reported outcomes of extranodal DLBCL treated with R-CHOP (14,15). Even in cases with bulky disease or skin involvement, R-CHOP has demonstrated significant efficacy, although radiotherapy may be considered in refractory or residual disease (16).

Ulcerated extranodal DLBCL of the axilla is rarely reported in the literature. A limited number of similar cases have been described, often in elderly males, further complicating diagnosis due to overlapping features with cutaneous malignancies or metastatic deposits (17,18). This case emphasizes the importance of including lymphoma in the differential diagnosis of atypical, rapidly enlarging axillary masses, particularly those presenting with ulceration and systemic symptoms. The elevated Ki-67 index in our case reflects the tumor's aggressive biological behavior. Ki-67 has been proposed as an independent prognostic marker, with indices above 70% correlating with poorer outcomes, especially in untreated or late-treated cases (19). Early recognition and initiation of therapy are therefore critical to improving prognosis.

Furthermore, the case underscores the essential role of a multidisciplinary approach—surgeons for initial evaluation and biopsy, radiologists for advanced imaging, pathologists for definitive diagnosis, and oncologists for therapy planning and monitoring (20). Such collaboration ensures timely and appropriate treatment, especially in diagnostically challenging cases.

## CONCLUSION

This case of primary extranodal DLBCL of the axilla mimicking a soft tissue sarcoma is a rare but instructive example. It reinforces the necessity for histopathological confirmation in atypical soft tissue masses and highlights the effectiveness of R-CHOP even in ulcerated, bulky lesions. A heightened clinical suspicion for lymphoma is crucial when encountering atypical presentations to ensure timely diagnosis and management.

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