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Case Report

T cell histiocyte rich large B cell lymphoma presenting as suppurative lymphadenitis causing a diagnostic pitfall

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ABSTRACT

T cell histiocytes rich large cell lymphoma (THRLBCL) is rare variant of DLBCL and characterised by predominantly reactive cell and a few atypical B cells. It has an aggressive clinical course and can metastasise to different organ. Due to presence of reactive T cells and histiocytes, it can be misdiagnosed as reactive lymphadenitis. Ancillary technique like immunohistochemistry can help in diagnosing this entity. We describe a case of T cell histiocyte rich large B cell lymphoma presenting as suppurative lymphadenitis which is a rare presentation.

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1. Introduction

T cell histiocyte rich large B cell lymphoma (THRLBCL) is a rare variant of diffuse large B cell lymphoma (DLBCL) characterized by singly scattered malignant B cells comprising <10% of total cells and numerous reactive T cells or often histiocytes (mimicking T cell lymphoma).[1] THRLBCL accounts for only 1–3% of all DLBCL and has an aggressive clinical course. It mainly affects middle-aged man and is predominantly a nodal disease, but extra nodal sites, such as bone marrow, liver, and spleen, can be involved.[1,2] We describe a case of T cell histiocyte rich large B cell lymphoma presenting as suppurative lymphadenitis which is a rare presentation.

2. Case Report

A 59-year-old male presented with persistent fever, pain abdomen and weight loss from last one month. CBC of the patient revealed anemia (Hb -8gm/dl). Total leukocytes count and differential counts were within normal limits. Biochemistry tests were also normal except for LDH which was raised to 2000IU/L. Clinically, bilateral supraclavicular and axillary lymphadenopathy was present. Ultrasonography revealed multiple pelvic and inguinal lymphadenopathy. No organomegaly was present. FNAC was performed on inguinal and supraclavicular lymph node using 22 gauge needle and slides were stained with MGG. It was diagnosed as Suppurative Lymphadenitis due to the presence of predominantly neutrophils, mature lymphocytes and histiocytes. Atypical cells were not evident. Acid fast bacilli stain was negative. Patient was given a course of antibiotics but there was no response. Excisional biopsy of node was performed. Grossly it consisted of grey white soft tissue piece measuring 4.5*2*1 cm. Cut section showed homogenous fleshy grey white areas. After processing paraffin blocks were made and slides were stained with haematoxylin and eosin stain. H&E stain sections revealed complete effacement of nodal architecture. Singly scattered neoplastic B cells were seen composed of <10% of total cells. Background shows numerous neutrophils, reactive T cells and histiocytes. A few eosinophils and plasma cells were also evident. Overall findings were suggestive

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of non-Hodgkin lymphoma-NHL? T cell histiocytes rich /Angioimmunoblastic /? NLPHL. Immunohistochemistry was advised for confirmation. The scattered large, atypical cells were B cells positive for CD20, CD79a, CD45, PAX5, BOB1 and focal weak positive for BCL6. and negative for CD10, CD23, CD30, EMA, CD15, CD68. The background small lymphocytes consist mostly of T cells positive for CD3, CD4, CD8, CD5 and CD45. The CD68 stain highlights numerous histiocytes. The Ki67 stain was 25-30%.

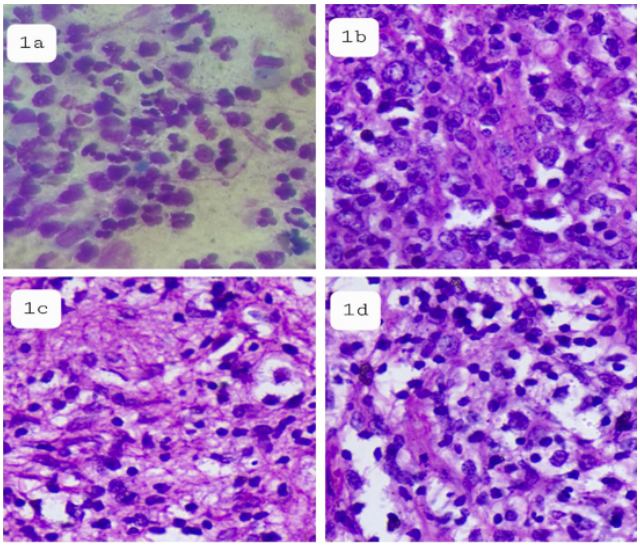

Figure 1: a: Giemsa-stained cytosmear shows abundant neutrophils and histiocytes; **b,c,d:** H&E stained reveal abnormally large malignant B lymphocytes, abundant T lymphocytes, neutrophils and large ovoid histiocytes

The morphologic findings together with the immunophenotype were consistent with the diagnosis of T cell / histiocyte rich large B cell lymphoma (THRLBCL). Following the diagnosis of THRLBCL, the patient was treated with chemotherapy.

3. Discussion

THRLBCL is a rare type of B cell lymphoma comprising of a few abnormal clonal B cells in a background rich in T cell and histiocytes. The World Health Organization (WHO) define THRLBCL as "a limited number of scattered, large, atypical B cells embedded in a background of abundant T cells and histiocytes".[3]

The cytokine produced by malignant B cell is mainly involved in evading host immune response T cells. Various studies done earlier also show that cytokines production by lymphoma cells may play a role in the pathogenesis of THRLBCL. Macon et al.[4,5] suggested that interleukin-4 plays the main role and later characterized the T-cell infiltrate as being predominantly composed of nonactivated CD8+/TIA-1+/granzyme B– T cells. Delabie et al.[6] identified a distinct subgroup predominantly rich in non-epithelioid histiocytes rather than T cells with distinctive clinicopathological features (the so-called "histiocyte-rich B-cell lymphoma") emphasized that it shares many similarities with nodular lymphocytic predominant Hodgkin lymphoma.

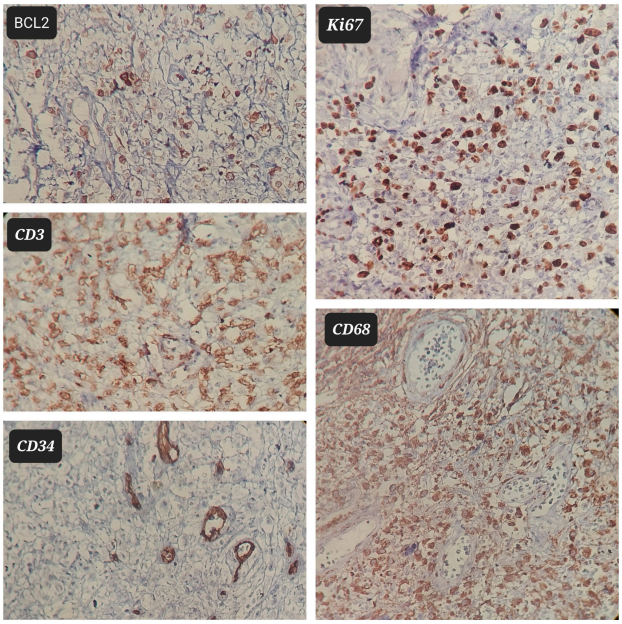

Figure 2: IHC positive stains are: BCL2, CD3, CD34, Ki67, CD68, IHC negative stains are: CD10, CD15, CD30.

These lymphomas mimic peripheral T-cell lymphoma, Hodgkin's lymphoma, EBV+ DLBCL, reactive lymphadenitis. Hodgkin lymphoma can be difficult to distinguish especially on small biopsy material. It has an indolent clinical course while THRLBCL is an advanced stage aggressive disease. The abnormal B cell can be confused with RS cells. Presence of numerous mantle zone B cells that are positive for CD20, CD23 favours HL over THRLBCL. CD163+, CD 68+ histiocytes are more frequent in THRLBCL.

EBV+ diffuse large B cell lymphoma can have scattered malignant cells similar to THRLBCL and the tumour cells can look like centroblasts, immunoblasts, Reed-Sternberg cell or LP cells. Presence of EBER+ large cells are diagnostic of EBV+ DLBCL and Hodgkin lymphoma (HL). EBER+ cells exclude a diagnosis of THRLBCL

Neoplastic B cells are CD15+, CD30+, MUM1+ and CD45-, a phenotype different from THRLBCL.[7] HL is often negative or only weakly positive in B cell markers like CD20 and PAX5, whereas these markers are strongly expressed in THRLBCL.

Peripheral T cell lymphoma will have numerous T cells similar to THRLBCL but the neoplastic tumor cells are the atypical T cells often present in aggregates. Atypical cells

will express 1 or more T cell markers.[8]

Suppurative lymphadenitis are most commonly seen in infection like pyogenic. Rarely it is seen in lymphoma. The present case is unique since the patient presented with suppurative lymphadenitis. He was treated with antibiotics initially but did not respond. The diagnosis is missed on cytology as large B cells are rarely seen in the cytology. The presence of reactive T cells, histiocytes and neutrophils can lead to misdiagnosis of Acute reactive lymphadenitis. The clinical presentation of this lymphoma as suppurative lymphadenitis is a rare phenomenon. There are a few studies which emphasizes that THRLBCL can be associated with such extensive suppuration causing confusion. The clinician and pathologist should be aware of this and correlation between clinical, imaging and pathological findings should be done. Diagnosing this entity is difficult on both cytology and biopsy due to presence of numerous reactive cells. Excision biopsy of the node helped in getting the correct diagnosis. This case highlights the importance of biopsy in diagnosing pathology of node. Aspiration sometimes may have limited diagnostic role as only a part of node is involved and sometime atypical cells are hidden behind the normal reactive cells. Tru cut biopsy should be avoided as it may miss the lesion. Moreover IHC is difficult to perform on tru cut biopsy due to crushed artifact and limited areas of study.

4. Conclusion

With the help of this case, we would like to emphasise the importance of biopsy and IHC in case of multiple lymphadenopathies. Though, FNAC is safe, minimally invasive and cost-effective day-care procedure, relying on it completely especially in case of lymph node is not prudent. Correlation with clinical history and radiological imaging should be the done in all the cases. Morphology of the cells is still the gold standard but ancillary test should be done in difficult cases. All suppurative lesion are not reactive and should be evaluated further for correct diagnosis.

5. Source of Funding

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6. Conflict of Interets

None.

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