International Journal of Medical Science in Clinical Research and Review
Online ISSN: 2581-8945
Available Online at http://www.ijmscrr.in Volume 6|Issue 05 (September-October)|2023 Page: 913-915

Case Report

A Rare Case Report from the Umbrella of T-Cell Lymphomas

Authors:
Authors: Dr. Raghav Kapoor [1], Dr. Shubham Varshney [2] , Dr. Adarsh Sanikop [3], Dr. Aiusee Pooja[4]
[1]Resident, Jawaharlal Nehru Medical College, Belagavi, Karnataka
[2]Resident, Jawaharlal Nehru Medical College, Belagavi, Karnataka
[3]Assisstant professor, Jawaharlal Nehru Medical College, Belagavi, Karnataka
[4]Resident, Jawaharlal Nehru Medical College, Belagavi, Karnataka
Corresponding Author:
Dr. Raghav Kapoor
Resident, Jawaharlal Nehru Medical College, Belagavi, Karnataka

Article Received: 02-September-2023, Revised: 20-September-2023, Accepted: 10-October-2023

ABSTRACT:

Introduction: Angioimmunoblastic T-cell lymphoma (AITL) is an uncommon subtype of mature peripheral T-cell lymphoma (PTCL). According to the 2016 World Health Organization classification of lymphoid neoplasms, AITL resides under the umbrella of nodal T-cell lymphomas with follicular T helper phenotype. Angioimmunoblastic T-cell lymphoma (AIL-TCL) is a rare subtype of lymphoma, making up only 1% to 2% of non-Hodgkin's lymphomas and about 10% of PTCL according to a recent study.

Case Report: 45-year-old male patient came to our OPD with history of Cervical and Axillary Lymphadenopathy since 4 months. Patient also had vague complaints of fatigue and on & off fever since 1 month. CBC showed Microcytic Hypochromic Anemia along with few atypical lymphocytes in the peripheral smear. FNAC of the Cervical and Axillary lymph node was reported as Small Lymphocytic Lymphoma (SLL) and Necrotizing Lymphadenitis respectively. Cervical lymph node excision was done and sent for HPR and diagnosed as AITL.

Methods: Grossing was done after formalin fixation. Processed in automated tissue processor. H & E staining was performed and morphology was examined under light microscope. Further IHC marker staining was performed for definitive diagnosis and subtyping.

Results: H & E –effaced nodal architecture with intact capsule and focal preservation of sinuses. The follicles are ill-defined with burnt-out germinal centres.

IHC -- Neoplastic cells express(Positive) :
CD 45, CD 3, CD 2, CD 5, CD 4 > CD 8.
-- Negative for :
CD 20, CD 10, BcL-6, Cyclin D1.
-- CD 23 highlights the Follicular Dendritic cells.
-- BcL-2 is seen around the Germinal centres.
-- Ki 67 is approx. 40 % in Inter-follicular area and high in the Germinal centres.

Discussion: Histopathologically, diagnosis of AITL is difficult and challenging due to various patterns and immunohistochemistry resolves the issue. Providing prompt and early diagnosis is mandatory for institution of therapy with combination chemotherapy to improve survival as evidenced in literature.

Conclusions: AITL is a neoplastic disease, categorized under Peripheral T-cell Lymphoma, accounting for 15% of T-cell lymphomas. Morphology can be deceptive, hence IHC staining is mandated for a definitive diagnosis.

Keywords: Angioimmunoblastic T-cell lymphoma (AITL), Immunohistochemistry (IHC), peripheral T-cell lymphoma (PTCL).

INTRODUCTION:

Angioimmunoblastic T-cell lymphoma (AITL) is an uncommon subtype of mature peripheral T-cell lymphoma (PTCL). According to the 2016 World Health Organization classification of lymphoid neoplasms, AITL resides under the umbrella of nodal T-cell lymphomas with follicular T helper phenotype. Angioimmunoblastic T-cell lymphoma (AIL-TCL) is a rare subtype of lymphoma, making up only 1% to 2% of non-Hodgkin's lymphomas.[1] More recent studies have delineated the immunophenotypic and genetic features of this unusual lymphoma, and have tentatively identified the cell of origin of this neoplasm.[2]

CASE REPORT:

45-year-old male patient came to our OPD with history of Cervical and Axillary Lymphadenopathy for 4 months. Patient also had vague complaints of fatigue and on & off fever for 1 month. CBC showed Microcytic Hypochromic Anemia along with few atypical lymphocytes in the peripheral smear. On examination, lymph node enlargement was confirmed having firm consistency and there was no evidence of skin changes. USG abdomen revealed mild Hepato-Splenomegaly. In a local setup, FNAC of the Cervical and Axillary lymph node was done and reported as Small Lymphocytic Lymphoma (SLL) and Necrotizing Lymphadenitis respectively. Cervical lymph node excision was done and sent for histopathological examination. The lymph node was preserved in 10% neutral buffered formalin. Cut surface bit with capsule was processed and paraffin embedded blocks were subjected to thin 4 ùm ribbon sections. H & E staining was performed, and morphology was examined under light microscope. Section shows obliteration of nodal architecture with intact capsule and focal preservation of sinuses. There is extensive proliferation of hyalinized post capillary venules with endothelial cell hyperplasia. The follicles are ill-defined with burnt-out germinal centers (Figure 1). Also seen, polymorphic population of atypical lymphoid cells with clusters of cells with clear cytoplasm and infiltrate composed of lymphocytes, plasma cells and histiocytes (Figure 2).

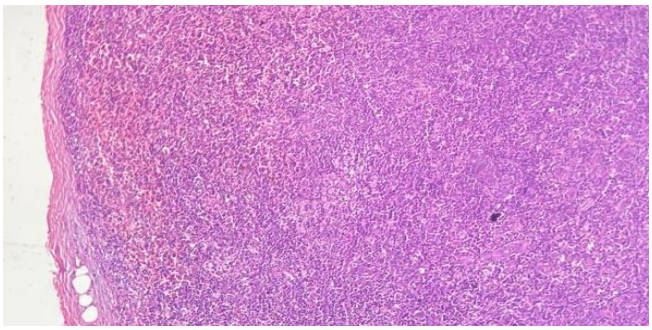

Figure: 1 (Low Power – H&E)

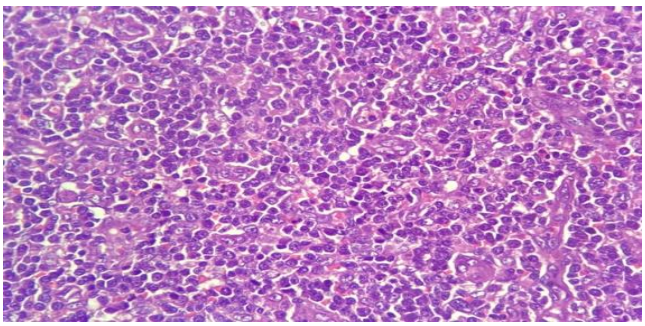

Figure: 2 (High Power – H&E)

Further IHC marker staining was performed for definitive diagnosis and subtyping. IHC expression profile in neoplastic cells is given in **Table 1** and **Figure 3.**

EXPRESSION	**IHC Marker**
Positive	CD 45, CD3, CD 2, CD 5, CD 4 > CD 8
Negative	CD 20, CD 10, BcL-6, Cyclin D1

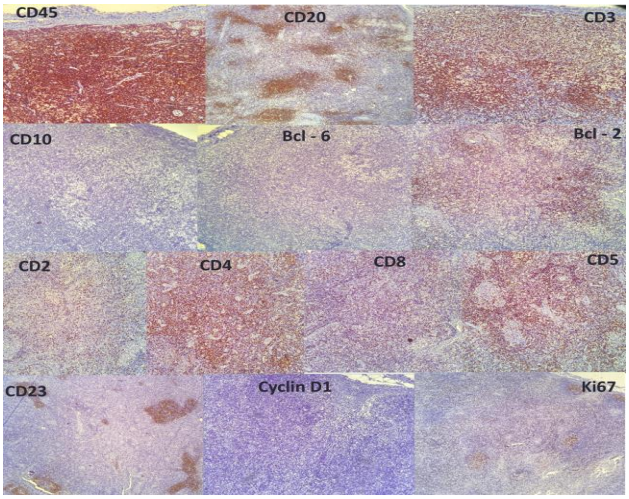

Figure: 3 (IHC)

- **CD 23 highlights the Follicular Dendritic cells.**
- **BcL-2 is seen around the Germinal centres.**
- **Ki 67 is approx. 40 % in Inter-follicular area and high in the Germinal centres.**
- **After IHC workup, definitive Diagnosis of AITL was made.**

DISCUSSION AND CONCLUSION:

AITL is a neoplastic disease, categorized under Peripheral T-cell Lymphoma, accounting for 15% of T-cell lymphomas.[3] Morphology can be deceptive, hence IHC staining is mandated for a definitive diagnosis. Histopathological diagnosis of AITL is difficult and challenging due to various patterns and immunohistochemistry resolves the issue. Providing prompt and early diagnosis is mandatory for institution of therapy with combination chemotherapy to improve survival as evidenced in literature.[4] FISH and Molecular studies can be done for confirmation.

Source of funding: Nil
Conflict of interest: Nil
Consent: Patient signed an informed consent form prior to taking part in the study.

REFERENCES:

1. Jaffe ES, Ralfkiaer E. Angioimmunoblastic T-cell lymphoma. In: Jaffe ES, Harris NL, Stein H, Vardiman JW, editors. Pathology and genetics of tumours of haematoloietic and lymphoid tissues. WHO classification of tumours. 3rd ed. Lyon: IARC Press; 2001.
2. Lunning MA, Vose JM. Angioimmunoblastic T-cell lymphoma: the many-faced lymphoma. Blood. 2017 Mar 2;129(9):1095-1102
3. Ferry JA. Angioimmunoblastic T-cell lymphoma. Adv Anat Pathol. 2002 Sep;9(5):273-9.
4. Chiba S, Sakata-Yanagimoto M. Advances in understanding of angioimmunoblastic T-cell lymphoma. Leukemia. 2020 Oct;34(10):2592-2606.