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RESEARCH ARTICLE

TRANSFORMATION OF FOLLICULAR LYMPHOMA TO HODGKIN-LIKE LYMPHOMA: A CASE REPORT OF A DIAGNOSTIC PITFALL

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Abstract

The transformation of follicular lymphoma to Hodgkin-like lymphoma is rarely reported to date. The diagnosis is based on histological and immunohistochemical features that show the presence of both centrocytes and centroblasts cells which isconsistent with follicular lymphoma, and also large neoplastic cells with classic Reed-Sternberg (RS) and Hodgkin cell-like (typically seen in Hodgkin lymphoma). The Immunohistochemical results confirm the diagnosis by the positivity of CD20, CD10, BCL2 in the centrocytes, and the positivity of CD30 and LMP1 in the Hodgkin-like cells. This report presents a case of follicular lymphoma with numerous CD30+ Hodgkin-like cells and compares morphologic and immunophenotypic results of the Centrocytes and centroblasts component and single Hodgkin-Reed Sternberg-like cells. This case also highlights the diagnostic pitfall of Hodgkin-Reed Sternberg-like cells in follicular lymphoma vs classic Hodgkin lymphoma.We expect that this case report adds to the existing literature on this subject.

Case Report:-

We report a new case of a 58-year-old woman who was admitted to the emergency room for chest pain associated with stage III dyspnea with no other specific symptoms. Clinical and radiological exploration revealed multiple mediastinal, axillary and submandibular swollen lymphadenopathies, with abundant bilateral pleuresia, there was no evidence of hepatosplenomegaly or lymphadenopathy elsewhere.Histological analysis of a mediastinal lymph node biopsy demonstrated a nodular lymphoid infiltrate completely effacing the nodal architecture. The infiltrate was composed of vague nodules typical of Follicular lymphoma, predominantly centrocytes and a few centroblasts. Some large neoplastic cells with classic Reed-Sternberg (RS) and Hodgkin cell-like morphology were also revealed (image 1). Focally, dense fibrosis forming bands encircling nodules. Although there were a few scattered histiocytes, neutrophils, eosinophils, and plasma cells.

Immunohistochemical analysis revealed that the centrocytes and centroblasts were positive for CD20, CD10, BCL2, and negative for CD30, which confirms the diagnostic of follicular lymphoma, while Reed Sternberg and Hodgkin-like cells were positive for CD20, CD30 (image 2), Pax5,and interestingly, LMP-1immunostain was also positive in the larger Hodgkin-like cells (image 3), but they were negative for CD15, BCL2 and ALK1. The morphologic and immunohistochemical findings confirmed the diagnosis of follicular lymphoma transformed to a related EBV-

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Hodgkin like CD30+ cells. The patient received two cycles of salvage therapy with Carboplatin, Ifosfamide,Rituximab and Etoposide. However, the patient's prognosis is still poor.

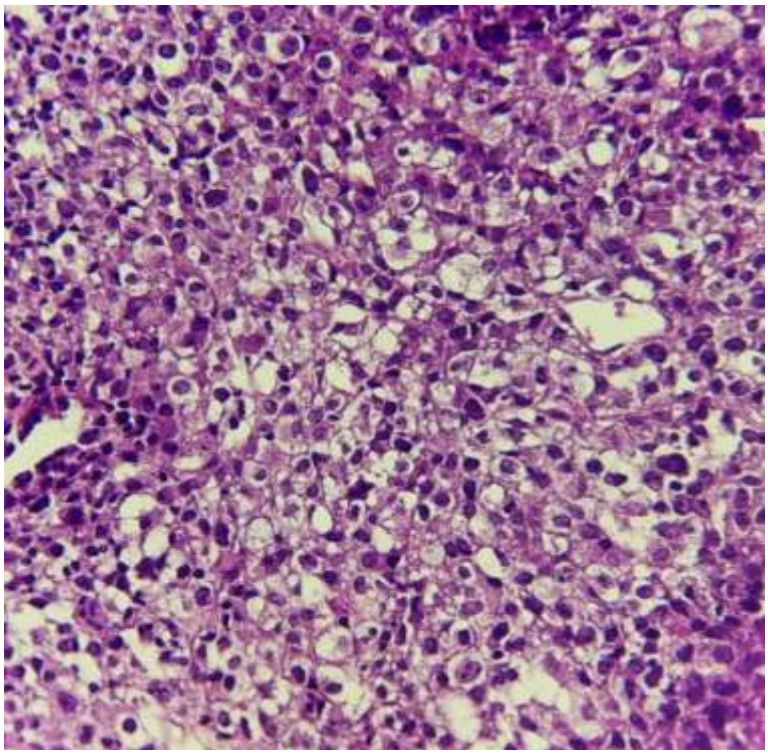

Image 1:- Reed Sternberg cells-like and lacunar cells (H.E, x40).

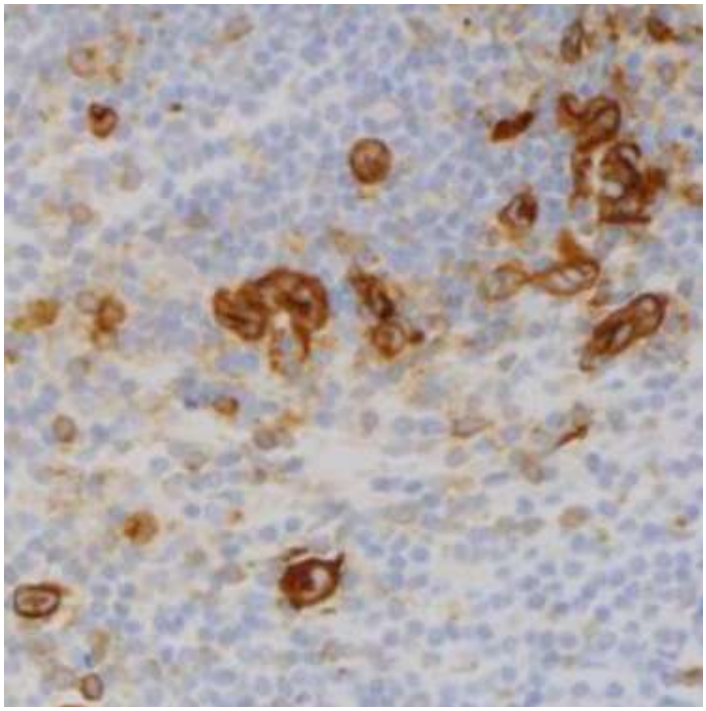

Image 2:- CD30+ in Hodgkin Reed Sternberg like cells.

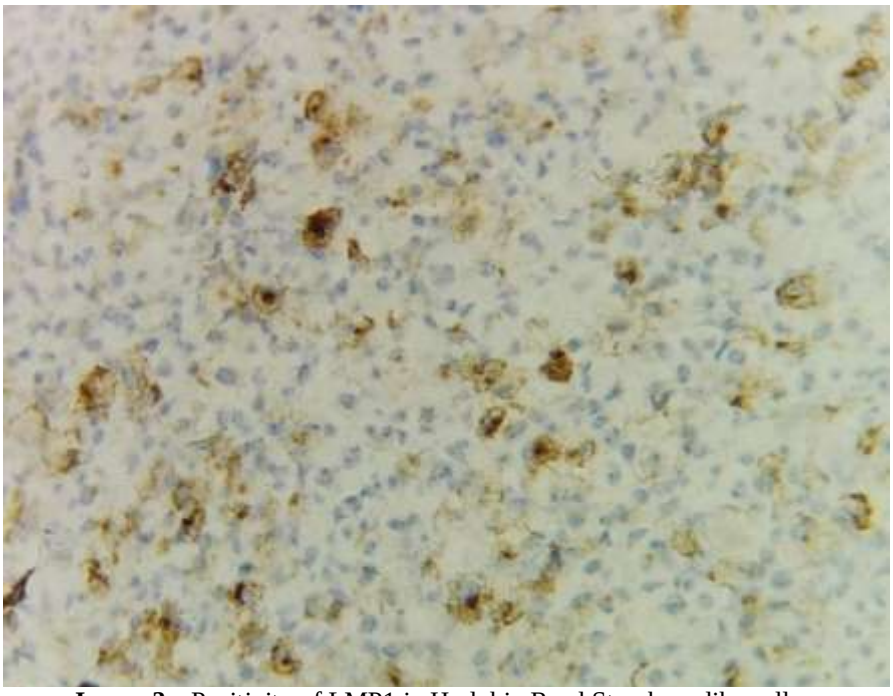

Image 3:- Positivity of LMP1 in Hodgkin Reed Sternberg-like cells.

Discussion:-

The histologic transformation of non-Hodgkin lymphomas is better understood in patients with follicular lymphomas. The frequency of histological transformation of follicular lymphomas is 2 to 3% per year [1,2,3]. In patients with follicular lymphoma, the most common histologic transformation is that of diffuse large B-cell lymphoma [2,4]. In contrast, follicular lymphoma may contain large cells with the morphological characteristics of Hodgkin and Reed-Sternberg (HRS) cells. In these cases, HRS-like cells may be few or numerous and are found around and / or in the follicular lymphoma nodules. HRS-like cells are generally CD30 positive but lack CD15 expression. Background reactive cellularity and fibrosis of LH are generally absent. [7]

The occurrence of Hodgkin lymphoma subsequent to follicular lymphoma as well as composite lymphomas that consist of Hodgkin lymphoma (with classic phenotype) and follicular lymphoma have been previously described past. [5,6]

In our case, we had both CCCB that were positive for CD20, CD10, BCL2, and negative for CD30, and HRS-like cells that were positive for CD20, CD30, Pax5, and LMP-1, but they were negative for CD15, BCL2 and ALK1.

Bayerl et al. [7]reported two cases of follicular lymphomas with CD30+ RS-like cells that were negative for CD15. within the same study, a clonal relationship was established between centrocytes, centroblasts, and Hodgkin-like cells via polymerase chain reaction (PCR) –based amplification and sequencing of immunoglobulin heavy chain rearrangements. [7] Madhu P et al. described a case of transformation of a low-grade follicular lymphoma to a grade 3A follicular lymphoma in which there was an associated CD30+ large-cell lymphoma that exhibited Reed-Sternberg–like morphology and immunophenotype. They also demonstrated a clonal relationship between the follicular lymphoma and the Hodgkin like lymphoma. Theirstudy revealed that several large Hodgkin-like cells as well as smaller cells were with positive EBER-ISH staining. [8]

Conclusion:-

Follicular lymphoma transformed into Hodgkin-like lymphoma is one of the rarestkinds of FL transformation [1], it constitutes a real diagnostic trap for the pathologist, in particular in the absence of adequate tissue sampling and immunophenotyping. The mechanism of morphological and immunophenotypic divergence of centrocytic and centroblastic cells and HRS in these tumors remains to be elucidated. [7]

References:-

[1] Conconi A, Ponzio C, Lobetti-Bodoni C, et al. Incidence, risk factors and outcome of histological transformation in follicular lymphoma. Br J Haematol 2012; 157:188-196
[2] De Jong D, De Boer JP. Predicting transformation in follicularlymphoma. LeukLymphoma 2009; 50: 1406-1411
[3]Link BK, Maurer MJ et al. Rates and outcomes of follicular lymphoma transformation in the immunochemotherapy era : a report from the university of lowa/Mayo Clinic Specialized program of research excellence molecular epidemiology resource. J Clin Oncol 2013;31:3272-3278
[4] Montoto S, et al. Transformation of indolent B-cell lymphomas. J Clin Oncol 2011; 29 : 1627-1634
[5] Travis LB, Gonzalez CL, Hankey BF, et al. Hodgkin's disease following non-Hodgkin's lymphoma. Cancer. 1992;69:2337–2342. [PubMed] [Google Scholar]
[6] Gonzalez CL, Medeiros LJ, Jaffe ES. Composite lymphoma: A clinicopathologic analysis of nine patients with Hodgkin's disease and B-cell non-Hodgkin's lymphoma. Am J Clin Pathol. 1991;96:81–89. [PubMed] [Google Scholar]
[7] Bayerl MG, et al. Lacunar and Reed-sternberg-like cells in follicular lymphomas are clonally related to the centrocytioc and centroblastic cells as demonstrated by laser capture microdissection. Am J Clinic Pathol 2004; 122:858-864
[8] Menon, Madhu P et al. "Transformation of follicular lymphoma to Epstein-Barr virus-related Hodgkin-like lymphoma." Journal of clinical oncology : official journal of the American Society of Clinical Oncology vol. 31,5 (2013): e53-6. doi:10.1200/JCO.2012.43.2377.