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Case Report

Non Waldenstrom Macroglobulenemia Igg Secreting Lymphoplasmacytic Lymphoma - A Diagnostic Challenge

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Abstract

Lymphoplasmacytic lymphoma (LPL) is a low-grade, B-cell neoplasm composed of small lymphocytes, plasmacytoid lymphocytes, and plasma cells that typically involve the bone marrow, and it is associated with an immunoglobulin M (IgM) gammopathy. The diagnosis of LPL itself can be challenging because LPL lacks disease-specific morphologic, immunophenotypic, and genetic features to differentiate it from other mature B-cell neoplasms. Although most cases of LPL are IgM secreting, there are exceptions of rare, primary, lymph node-based presentations of LPL or lymphoplasmacytic B-cell proliferations in the bone marrow associated with IgA or IgG gammopathies. We hereby report a case of IgG secreting lymphoplasmacytic lymphoma under our tracking and review of the related literature on management of this rare tumor.

Keywords: Waldenstrom Macroglobulinemia (WL); Lymphoplasmacytic Lymphoma (LPL)

Introduction

Lymphoplasmacytic lymphoma (LPL) is a chronic, lymphoproliferative neoplasm characterized by small B lymphocytes, plasmacytoid lymphocytes, and plasma cells typically involving the bone marrow, lymph nodes, and spleen. The 2008 World Health Organization criteria for classification of hematologic diseases characterizes Waldenstrom macroglobulinemia (WM) as a subset of LPL that has a detectable level of monoclonal immunoglobulin (Ig) M gammopathy, with bone marrow involvement by LPL [1,2]. Although most cases of LPL are WM, there are exceptions where the diagnosis of WM does not apply. Examples are rare, primary, lymph node-based presentations of LPL or lymphoplasmacytic B-cell proliferations in the bone marrow associated with IgA or IgG gammopathies. Symptoms can vary considerably among individual patients, and many patients are asymptomatic at diagnosis.

Case Report

We report an adult healthy male, 30 years of age presenting to our outpatient clinic with history of pain right hip and difficulty in bearing weight on right lower limb since 2 months. Preliminary x-ray of pelvis with both hips done at another centre was inconclusive. Physical examination revealed diffuse tenderness at anterior joint line right hip with decreased range of internal rotation at right hip. MRI pelvis was suggestive of lytic, enhancing lesion with soft tissue

component in right acetabulum with a suspicion of inflammatory pathology or plasmacytoma (Figure 1). A whole body pet scan was done which was suggestive of permeative destructive lesion right acetabulum with metabolically active right pelvic and left axillary lymphadenopathy with suspicion of LCH variant Rosai Dorfmans disease. A CT guided biopsy of the right acetabular lesion was done which was suggestive of histiocytic rich osteomyelitis (Figure 2). Mycobacterium culture, aerobic culture and gene expert for mycobacterium tb of biopsy specimen demonstrated no growth. Haematological investigation was suggestive of raised CRP count, haemoglobin of 12 gm/dl, thrombocytosis and normal white blood cell count. Serum protein electrophoresis was suggestive of IgG band with raised gamma globulin (Figure 3). Serum beta 2 microglobulin were marginally increased with no detectable urinary bence jones protein. Liver function test were with normal limits. A USG guided biopsy of axillary lymph node was suggestive of lymphoid tissue with infiltration of immature and mature plasma cells (Figure 4). Bone marrow aspiration cytology was inconclusive. Based on the above findings lymphoplasmacytic lymphoma (LPL) a diagnosis of exclusion was made and patient started on chemotherapy protocol.

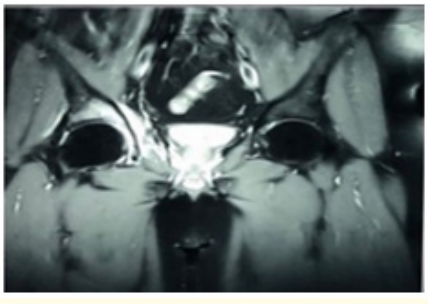

Figure 1: MRI suggesting of lytic, enhancing lesion with soft tissue component in right acetabulum.

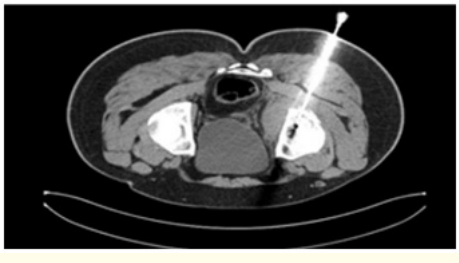

Figure 2: CT guided acetabular biopsy suggestive of histiocytic osteomyelitis.

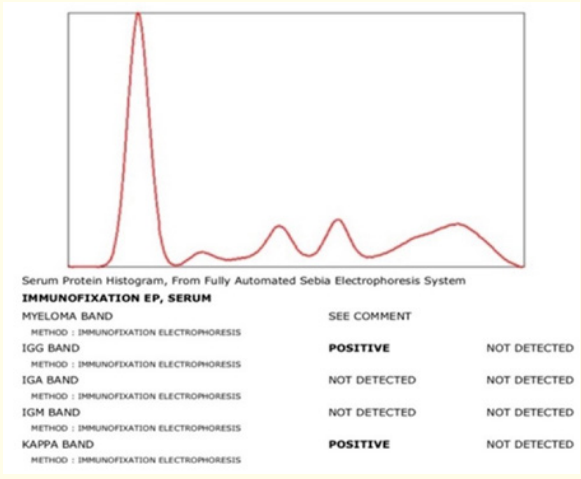

Figure 3: Serum protein electrophoresis suggestive of IgG band with raised gamma globulin.

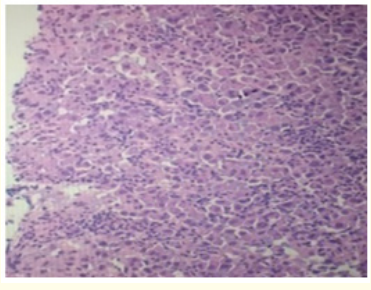

Figure 4: USG guided axillary lymph node biopsy suggestive of lymphoid tissue with infiltration of immature and mature plasma cells.

Discussion

Lymphoplasmacytic lymphoma/WM is a rare disease, with an annual incidence of 3 to 4 cases per million people, most commonly affecting older, white men [2-4]. Infiltration of the bone marrow and extramedullary sites, such as lymph nodes, spleen, and liver, by malignant B cells and elevated immunoglobulin levels contribute to symptoms associated with pancytopenia, organomegaly, and hyperviscosity. Most patients are either asymptomatic or present with anemia; presenting with symptoms of hyperviscosity is uncommon [5]. Most cases of LPL are WM with an IgM paraprotein, however, a few cases are IgA-secreting, IgG-secreting, or non-secreting LPL. Symptoms can vary considerably among individual patients, and many patients are asymptomatic at diagnosis.

Characterization of the paraprotein is essential in the laboratory workup of LPL/WM. Serum protein electrophoresis, typically represented by a densitometry tracing of the pattern, should demonstrate a monoclonal immunoglobulin that is visualized as a peak (M-spike) in the gamma-globulin region (Figure 1). Immunofixation is recommended to further characterize the type of heavy and light chain present. Because of their correlation with clinical outcomes, levels of serum free light chains and b2 microglobulin should also be assessed [6,7].

In the bone marrow, the pattern of marrow infiltration may be diffuse, interstitial, or focal non-paratrabecular. The bone marrow infiltrate of LPL is composed of small lymphocytes admixed with variable numbers of plasmacytoid lymphocytes and plasma cells. Increased mast cells are often present, and they may support the growth of LPL.

In the lymph node, the classic pattern is that of a subtle, paracortical expansion of small lymphocytes associated with varying numbers of plasma cells. Alternatively, nodal LPL can be associated with hyperplastic follicles and vaguely nodular or diffuse effacement of nodal architecture by the same population of small, mature lymphocytes associated with plasma cells. Most LPL cases demonstrate frank plasmacytic differentiation rather than only lymphoplasmacytoid cells.

Overall, LPL in the bone marrow and lymph node is a diagnostic challenge, demonstrating a wide spectrum of findings that can overlap with other B-cell lymphomas with plasmacytic differentiation, and LPL needs to be approached as a diagnosis of exclusion.

The causes of LPL/WM are poorly understood; however, there are emerging data to support a role for immune related and genetic factors in the etiology of LPL/WM. A few studies have reported evidence of frequent somatic immunoglobulin gene mutations, suggesting chronic antigen stimulation might play an etiologic role [8,9].

The problem with distinguishing nodal Marginal zone lymphoma with plasmacytic differentiation from LPL/WM is well recognized, especially in non-WM cases where there is no bone marrow involvement and/or IgM gammopathy to help support the diagnosis of LPL. In those cases, rather than making an arbitrary decision, the diagnosis of small B-cell lymphoma with plasmacytic differentiation should be rendered. These cases remain poorly characterized, which is likely related to the reproducibility of the diagnosis of LPL being highest in the setting of IgM gammopathy with bone marrow involvement (WM), and, conversely, diagnosis of extramedullary LPL lacks sufficient criteria for adequate reproducibility and is frequently indistinguishable from cases of Marginal zone lymphoma [10].

Conclusion

Diagnosis of LPL/WM can be challenging because LPL lacks disease-specific morphologic, immunophenotypic, and genetic features that readily differentiate it from other small B-cell lymphomas, all of which are capable of plasma cell differentiation.

Bibliography

1. Owen RG., *et al*. "Clinicopathological definition of Waldenstrom's macroglobulinemia: consensus panel recommendations from the Second International Workshop on Waldenstrom's macroglobulinemia". *Seminars in Oncology* 30.2 (2003): 110-115.

2. Swerdlow SH., *et al*. "WHO Classification of Tumours of the Haematopoietic and Lymphoid Tissues". 4th edition. Lyon, France: IARC Press. World Health Organization Classification of Tumours volume 2 (2008).

3. Groves FD., *et al*. "Waldenstrom's macroglobulinemia: incidence patterns in the united states, 1988-1994". *Cancer* 82.6 (1998): 1078-1081.

4. Herrinton LJ and Weiss NS. "Incidence of Waldenstrom's macroglobulinemia". *Blood* 82.10 (1993): 3148-3150.

5. Bjorkholm M., *et al*. "Patterns of clinical presentation, treatment, and outcome in patients with Waldenstrom macroglobulinemia: a two-institution study". *Seminars in Oncology* 30.2 (2003): 226-230.

6. Dimopoulos MA., *et al*. "Update on treatment recommendations from the fourth international workshop on Waldenstrom's macroglobulinemia". *Journal of Clinical Oncology* 27.1 (2009): 120-126.

7. Itzykson R., *et al*. "Serum-free light chain elevation is associated with a shorter time to treatment in Waldenstrom's macroglobulinemia". *Haematologica* 93.5 (2008): 793-794.

8. Aoki H., *et al*. "Frequent somatic mutations in D and/or JH segments of ig gene in Waldenstrom's macroglobulinemia and chronic lymphocytic leukemia (CLL) with Richter's syndrome but not in common CLL". *Blood* 85.7 (1995): 1913-1919.

9. Wagner SD., *et al*. "Similar patterns of Vj gene usage but different degrees of somatic mutation in hairy cell leukemia, prolymphocytic leukemia, Waldenstrom's macroglobulinemia, and myeloma". *Blood* 83.12 (1994): 3647-3653.

10. Lin P., *et al*. "Lymphoplasmacytic lymphoma and other non-marginal zone lymphomas with plasmacytic differentiation". *American Journal of Clinical Pathology* 136.2 (2011): 195-210.

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