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Laboratory Characteristics of Lymphoplasmacytic Lymphoma with Plasma Cells Containing "Diamond-shaped" Inclusions

Yu Ma[1], Guochang Zhang[1], Yingchun Zheng[2], Jihong Zhang[3], Shuang Wang[1], Jing Wang[1], Lifen Cui[3]
[1]Anshan Central Hospital, Department of Clinical Laboratory, Anshan, China
[2] Institute of Hematology & Blood Diseases Hospital, Chinese Academy of Medical Sciences & Peking Union Medical College, State Key Laboratory of Experimental Hematology, National Clinical Research Center for Blood Diseases, Tianjin, China
[3]Shengjing Hospital of China Medical University, Hematology Laboratory, Shenyang, China

Guochang Zhang, M.D., Anshan Central Hospital, Department of Clinical Laboratory, Anshan, China
820831900@qq.com

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A 65-year-old male patient was admitted to the hospital due to dyspnea for over 20 days. The patient had bilateral pleural effusion, mediastinal lymphadenopathy, and splenomegaly. Hematological examination: Bone marrow morphology showed markedly active proliferation, Granulocytic and erythroid series were hypocellular without significant abnormalities, with some mature erythrocytes in rouleaux formation. Atypical lymphocytes accounted for 41.6% with regular cell bodies, high nuclear-cytoplasmic ratio, and indistinct nucleoli (Figure 1A-C, black arrows). Plasma cells accounted for 11.6%, with 10.8% being abnormal and containing quadrilateral, colorless, transparent inclusions (Figure 1A-D, red arrows). Peripheral blood showed increased white blood cells,decreased granulocyte ratio, and 51% abnormal lymphocytes and plasma cells with similar morphology to bone marrow smears (Figure 1E-F, red arrows). Immunophenotyping suggested CD5-CD10- small B-cell lymphoma with 2.23% monoclonal plasma cells. Serum immunoglobulin quantification showed elevated IgG (17.80 g/L), and immunofixation electrophoresis indicated monoclonal immunoglobulin of IgG-κ type. Molecular analysis confirmed the presence of the MYD88(L265P) mutation, with a mutation rate of 55.29%, through DNA sequencing. Cytogenetic studies demonstrated a complex karyotype associated with lymphoma, specifically 48, XY, +3, t(8;14)(q24.1;q32.3), +18[13]/48, idem, del(3)(p25p11)[11]/47, XY, +3, der(3;14)(q10;q10)t(8;14), t(4;12)(q21;p13), der(8)t(8;14), +18[2]/46, XY[4].
The laboratory results collectively supported the diagnosis of small B-cell lymphoma, classified as lymphoplasmacytic lymphoma. Plasma cells with crystalline inclusions are rare, previously reported by Matoso A et al. in multiple myeloma but rarely in lymphoma[1]. Immunological and electron

microscopic studies confirmed that the crystalline inclusions represent aberrant immunoglobulin synthesis and originate from the rough endoplasmic reticulum[2].Non-IgM type lymphoplasmacytic lymphoma is also clinically uncommon[3-5]. This case provides laboratory references and evidence for exploring the clinical and biological features of lymphoplasmacytic lymphoma.

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