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A Case of Lymphoplasmacytic Cell Lymphoma Characterized by Marked Nuclear Fission and Brain Gyrus Nuclei of Lymphocytes

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Description

A 67-year-old male was admitted to the hospital due to fatigue and thrombocytopenia. Peripheral blood cells analysis showed the white blood cells count of 2.99 × 10^9/L, red blood cell (RBC) count of 2.08 × 10^{12}/L, platelet count of 15 × 10^9/L. β2-microglobulin of serum was 5.50 mg/L. Whole-body positron emission tomography-computed tomography suggested altered reactivity in the lymph nodes of the bilateral neck. Morphological examination of bone marrow (BM) indicated the presence of abnormal smaller lymphocytes, accounting for 12.5% of the total nucleated cells. Strikingly, nuclear fission or brain gyrus nuclei were prominently observed in all abnormal lymphocytes (Figure 1, original magnification 1000×; Wright–Giemsa stain). The proportion of plasma cells was 0.5%, and no morphological abnormalities were observed. Additionally, some RBCs were exhibited a rouleaux arrangement. Flow cytometry analysis of BM identified 16.12% of κ-restricted B lymphocytes expressing $CD5^-$, $CD10^-$, $CD19^+$, $CD20^+$. A minimal proportion of 0.03% plasma cells with κ/λ ratio of 1.07. Consistent results were confirmed by immunohistochemistry in the BM biopsy. Immunofixation electrophoresis revealed abnormal monoclonal bands in the IgM and κ lanes. Furthermore, mutations of *MYD88* (L265P), *CXCR4* (T318fs), and *TP53* (R306X) were identified through next-generation sequencing analysis. A diagnosis of lymphoplasmic cell lymphoma/waldenström macroglobulinemia (LPL/WM) was established.

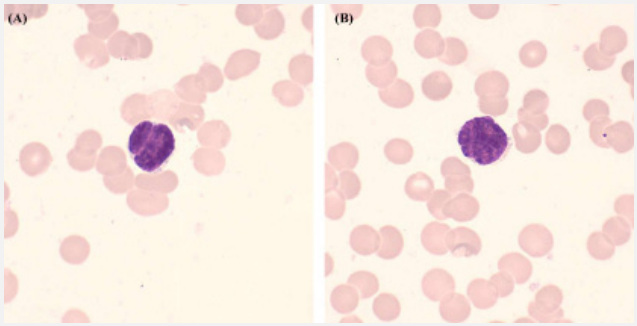

Figure 1: Light microscopy of bone marrow smear in a patient with LPL/WM. **(A)** Lymphocyte with a form of nuclear fission and **(B)** lymphocyte with a form of brain gyrus nuclei.

In conclusion, we present a new case of LPL/WM characterized by the presence of numerous lymphocytes with marked nuclear fission and brain gyrus nuclei in the BM.

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Ethical agreement: The patient written informed consent was obtained from the individuals for the publication of any potentially identifiable images or data included in this article.

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