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Auer Rod-Like Inclusions in B-cell prolymphocytic leukemia

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A 76-year-old male patient presented with increasing leukocytes in the month just past. Laboratory investigation showed leukocytosis of $30.03 \times 10^9/L$ (normal $3.5-9.5 \times 10^9/L$) with absolute lymphocytosis of $20.7 \times 10^9/L$ (normal $1.1-3.2 \times 10^9/L$), with normal hemoglobin and platelet counts. Review of the peripheral blood smears (Panel A) and bone marrow smears (Panel B) demonstrated 64% and 74.5% of prolymphocytes respectively, with nucleolus, vacuoles and Auer rod-like inclusions. The cytoplasmic inclusions were negative for myeloperoxidase by immunohistochemistry. Flow cytometry demonstrated a kappa-restricted CD19 and CD20 immunoreactive B-cell population making up to 67.1% of cells and 93.1% of lymphocytes, lacking CD5, CD10 and CD23, and with partial expression of sIgM. No significant expression of CD38 was present. Although Auer rod-like inclusions were seen, there was no

evidence of increased immature myeloid cells by flow cytometry or morphology. IgVH (FR1-FR3) mutation was not appreciable by molecular biology studies before or during this period. The patient achieved a partial response to the Chlorambucil treatment.

Auer Rod-Like Inclusions have been reported in B-lineage malignancies like multiple myeloma [1, 2]. Electron microscopy revealed these structures to be swollen mitochondria or immunoglobulins [3, 4] while classical Auer rods are formed by aggregation and concentration of peroxide granules in myeloid blasts.

Keywords: Auer Rod-Like Inclusions, B-cell prolymphocytic leukemia, lymphocytes

Figure 1. (A) Blood smears and (B) bone marrow smears demonstrating abnormal lymphocytes with Auer rod-like inclusions (x1000, Wright-Giemsa stain)

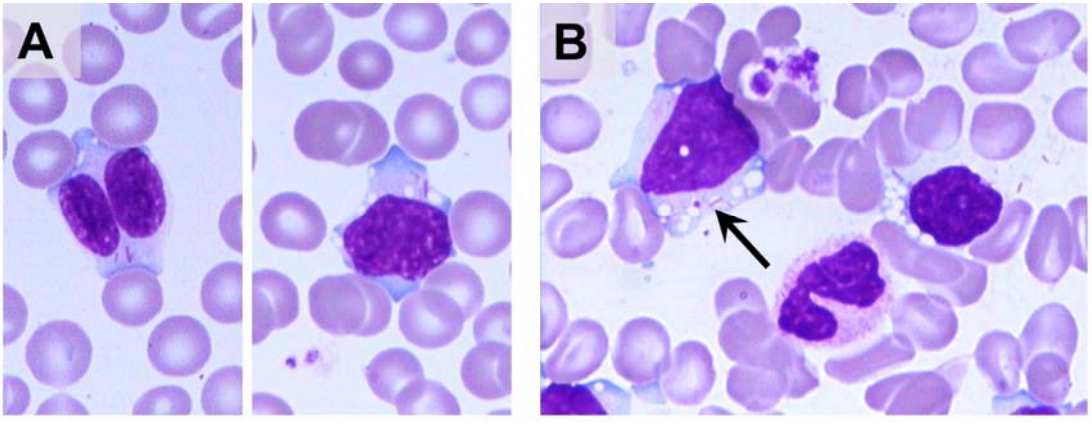
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