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## Chromosome 8-14 translocation in a non-African Burkitt's lymphoma with leukemic conversion.

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## Abstract

A specific chromosome translocation, t(8q-; 14q+), was observed in a 43-year-old female with non-African Burkitt's lymphoma in which leukemic conversion had occurred. The chromosome studies used cells from ascites. The ascites was apparently the result of a primary tumor involving the ovaries and contained 68% of lymphoma cells. The frequent occurrence of abnormalities related to chromosomes 1, 8 and 14 in African and non-African Burkitt's lymphomas was emphasized.

**KEYWORDS:** chromosome translocation, non-African Burkitt's lymphoma, mic conversion

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— BRIEF NOTE —

**CHROMOSOME 8-14 TRANSLOCATION IN A NON-AFRICAN  
BURKITT'S LYMPHOMA WITH LEUKEMIC CONVERSION**

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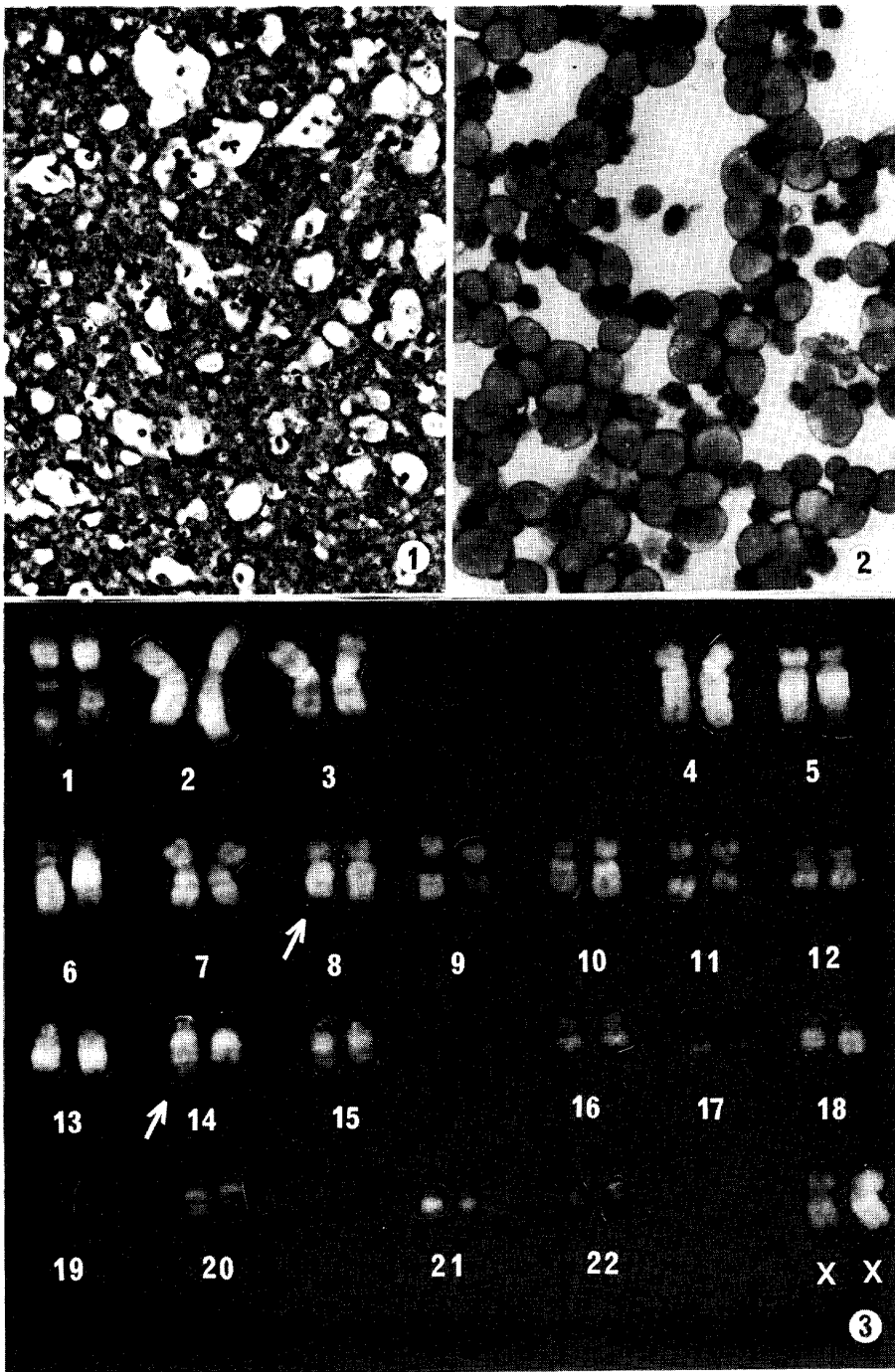
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*Abstract.* A specific chromosome translocation,  $t(8q-; 14q+)$ , was observed in a 43-year-old female with non-African Burkitt's lymphoma in which leukemic conversion had occurred. The chromosome studies used cells from ascites. The ascites was apparently the result of a primary tumor involving the ovaries and contained 68 % of lymphoma cells. The frequent occurrence of abnormalities related to chromosomes 1, 8 and 14 in African and non-African Burkitt's lymphomas was emphasized.

*Key words :* chromosome translocation, non-African Burkitt's lymphoma, leukemic conversion.

A specific translocation,  $t(8q-; 14q+)$ , has been observed in African and non-African Burkitt lymphomas (1-3). The significance of this marker chromosome is of comparable importance to the original observation of the Philadelphia chromosome ( $Ph^1$ ) rearrangement in chronic myelogenous leukemia (4). Recently, we reported on the Burkitt lymphoma of two Japanese, in whom a  $14q+$  marker chromosome was found (5, 6). This paper briefly reports another case of  $t(8q-; 14q+)$  translocation in a Japanese Burkitt lymphoma with negative Epstein-Barr virus (EBV).

The patient was a 43-year-old female of single status. Towards the end of March, 1981, she developed abnormal genital bleeding and abdominal fullness; enlarged bilateral ovaries and ascites were detected at a gynecological examination. Peripheral blood (WBC: 10,400/ $\mu$ l) on admission in the middle of April, contained 23 % of immature cells, and the bone marrow biopsy demonstrated the typical "starry sky" effect (Fig. 1), indicating the leukemic conversion of Burkitt lymphoma. Ascites was apparently due to a primary tumor involving the ovaries, and contained approximately 68 % of lymphoma cells (Fig. 2). These cells proved to be negative for EBV-determined nuclear antigen. Marker analysis showed that 90 % of cells were positive for surface IgM.



Chromosomes were studied on cells from this ascites. The cells were incubated for 24 h in RPMI 1640 medium with 10% fetal calf serum and at 37°C in a humidified 5% CO<sub>2</sub> atmosphere. Mitotic cells were accumulated with Colcemid (0.5 µg/ml), treated in a hypotonic solution of 75 mM KCl for 13 min, and fixed in a methanol-acetic acid (3;1) mixture. Chromosome preparations were stained with conventional Giemsa solution and analyzed using the Q-banding technique. Lymphoma cells had a modal number of 46 chromosomes; all the banded metaphases showed an identical karyotype, *i.e.*, 46, XX, dir dup (1q)(pter - q32::q12 - q31::q32 - qter), t(8;14)(q24;q32) (Fig. 3).

In the present study, we demonstrated a t(8q-;14q+) translocation in a Japanese adult with non-African Burkitt lymphoma. In addition, there was partial duplication of the long arm of chromosome No. 1. Douglass *et al.* (7) described a similar duplication of the long arms of chromosome No. 1. as well as the 14q+ marker in non-African Burkitt lymphoma. As shown by Slater *et al.* (8), 1q+ rearrangement appears to play an important role in the evolution of the malignant cell population in lymphoproliferative disorders. The present case along with the two cases reported previously by us (5, 6) strongly suggests that abnormalities related to chromosomes 1, 8 and 14 can be a frequent occurrence in Burkitt lymphoma in Japanese patients, in the same way as is seen in that of African, North American and European subjects.

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Fig. 1. Bone marrow biopsy showing the typical "starry sky" effect. H.E., × 200.

Fig. 2. Lymphoma cells from ascites showing deeply stained scant cytoplasm with multiple uniform intracytoplasmic vacuoles. May-Grünwald-Giemsa, × 400.

Fig. 3. Karyotype from ascites: 46, XX, dir dup (1q)(pter - q32::q12 - q31::q32 - qter), t(8;14)(q24;q32).

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