Variant Ph' Translocation in Chronic Myeloid Leukemia

To the Editor:

The translocation in Ph'-positive chronic myeloid leukemia (CML) usually involves only chromosomes 9 and 22. Although the numbers and kinds of variant Ph' translocations are limited, description of such translocations is important, since their identification may help identify a nonrandom pattern with regard to the chromosomes involved. We report here an unusual variant translocation described only once previously.

A 35-yr-old previously healthy Caucasian woman presented with a history of several weeks of malaise, fatigue, and easy bruising. The initial peripheral white blood cell count was 55,000/cu mm, including 17% blasts. The hemoglobin was 12.8 g/dl, and the platelet count was 166,000/cu mm. A bone marrow aspiration was hypercellular; the differential count showed 63% blasts. The bone marrow biopsy confirmed these findings.

Karyotypic analysis of bone marrow aspirate by Giemsa staining and fluorescent banding revealed abnormalities of chromosomes 9, 17, and 22 present in 10 of 10 cells analyzed by fluorescence. The karyotype, interpreted as a complex three-way variant translocation between 9q, 17q, and 22q, is 46,XX,t(9;22;17)(q34;q11;q21) (Fig. 1).

The data on variant translocations have recently been reviewed. Sixty-four patients with variant Ph' translocation have been described. Thirty of these have involved two chromosomes, namely chromosome 22 and some other chromosome; 34 have involved three or more chromosomes. Of the two-chromosome translocations, four have involved chromosome 17: two translocations to the short arm and two to the long arm of this chromosome. The only other chromosome found in a two-way translocation in 4 different patients was chromosome 19. Of 34 complex three-chromosome translocations, 4 (including our patient) involved chromosome 17: two affected the long arm (our patient and another4), one affected the short arm, and one was a complex insertion of chromosome 17 into chromosome 22.

Thus chromosome 17 has been involved in 8 of 64 variant Ph' translocations (12.5%). Those chromosomes found next most frequently in variant Ph' translocations include chromosomes 2, 11, and 19, each affected five times (8.0%). Chromosomes 18 and 20 and the Y chromosome have not been identified in variant Ph' translocations. There has been no demonstrated difference in clinical course.
response to therapy, or survival of CML patients with variant Ph' translocations as compared with CML patients with the usual translocation. Future investigation may reveal whether or not the apparently increased association of chromosome 17 with variant Ph' translocations is a consistent finding with potential clinical significance.

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REFERENCES

8. Rowley JD: Unpublished observation
Variant ph1 translocation in chronic myeloid leukemia [letter]
JD Rowley, GD Resnick, SL Whitman, R Senterfit and RT Silver