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Recurring chromosome abnormalities in Hodgkin's disease

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Abstract

Cytogenetic analysis was performed on lymph nodes or other tumor masses from 33 patients with Hodgkin's disease. Metaphase cells were obtained in 25 of the 33 cases. Analyzable abnormal clones were found in nine cases. Characteristic abnormalities included polyploidy and complex structural rearrangements nonrandomly involving certain chromosomal regions. Chromosomes most commonly gained were 2, 9, 11, 19, and 20, and those most often lost were 10, 13, 15, 16, 21, and Y. Translocation breakpoints clustered in bands 1p11-1p13, 1p36, 4q35, 14q11, and 15p11. In five patients, breakpoints were in bands to which T-cell receptor genes have been mapped. No specific, recurring translocation was identified. There was, however, recurring loss of chromosomal material from 1q, 4q, 6q, and 17p. Loss or deletions of chromosomes 4 and 6 were found in five and six patients, respectively. Deletions overlapped; the smallest overlapping segments included bands 4q25-4q27 and 6q21-6q23. The data suggest that loss of specific chromosomal regions may be important in the pathogenesis of Hodgkin's disease. With respect to tumor specificity, deletions of 4q are of particular interest because these have not been previously reported to occur nonrandomly in other human malignancies.

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