CORE
Metadata, citation and similar papers at core.ac.uk
Provided by Elsevier - Publisher Connector

Book Review

Am. J. Hum. Genet. 61:468, 1997

Cancer Cytogenetics. 2d ed. By Sverre Heim and Felix Mitelman. New York: Wiley-Liss, 1995. Pp. 536. $59.95

Cancer cytogenetics has been an area of extraordinary discovery and excitement for the past 35 years, beginning with the discovery of the Philadelphia (Ph) chromosome in chronic myelogenous leukemia in 1960. However, until chromosome banding was developed in 1970, the Ph chromosome was the only known specific change among the apparent chaos of aneuploidiy, marker chromosomes, and the seemingly normal karyotypes found among the leukemias and solid tumors. Chaos gave way to some consistency with the application of banding. The chromosome gains and losses were often nonrandom, and recurring translocations were identified. In the 1980s, for the first time, translocation breakpoints were cloned, and the genes involved in these rearrangements were identified. In addition, with the development of FISH, cytogeneticists could map the chromosomal location of genes, detect the number of chromosomes or chromosome regions in interphase nuclei, and identify translocations.

One measure of the amount that we have learned in the past decade is a comparison of the contents of the 1st (1987) and 2d (1995) editions of *Cancer Cytogenetics*. The 1st edition (309 pages) had seven chapters on the hematologic malignant diseases (184 pages) and one on the solid tumors (34 pages). The authors comment on the fact that knowledge of the karyotype in solid tumors was rudimentary. In the 2d edition (536 pages), which is almost twice the size of the 1st, there are still 7 chapters (covering 276 pages) for hematologic disorders and *11* (covering 203 pages) for solid tumors. Whereas there were two separate chapters in the 1st edition that were devoted to the molecular-genetic pathology of chromosome abnormalities, in the 2d edition this information is fully integrated into the sections describing the relevant rearrangements. Although in some sections this leads to redundancy—for example, discussion of the *BCR-ABL* rearrangement in CML and Ph positive ALL—the integration of the molecular events with the cytogenetic abnormalities makes the information far more accessible to the reader who is concerned with a particular abnormality. At the end of each chapter is a section on the clinical correlations and the prognostic signifiance of particular aberrations. The authors provide information on the frequency of particular abnormalities in various tumors, in concise and usable tables. These data are based on the *Catalog of Chromosome Aberrations,* edited by Mitelman. Therefore, the numbers represent the frequency of abnormalities based on all the published information rather than on data taken from a few series. The figures illustrating the chromosome abnormalities include ideograms (i.e., stylized representations of banded chromosomes) and actual karyotypes.

In the 1st edition, the authors wished to present accurate cytogenetic data coupled with speculation about what the observations might mean. They wanted to share the "excitement and sense of beauty with regard to many of the recent discoveries of how cellular proliferation is genetically determined under normal and neoplastic conditions" (p. x). Although this sentiment is not specifically stated in the preface to the 2d edition, it clearly continues to be a guiding principle in this new edition. The authors have been remarkable successful in providing a very current and complete monograph on cancer cytogenetics. It is well organized and "user friendly." The index is excellent and helps the reader find the specific item of interest easily.

A critical consideration is, Who should buy such a book? I believe that it should be on the bookshelf of every cancer cytogeneticist and clinical oncologist who obtains chromosome analysis on tumor tissue. Its restricted size, 536 single-column pages, compared with the 2d edition of Avery Sandberg's *The Chromosomes in Human Cancer and Leukemia* (1990), which has 1,315 double-column pages, means that each item is dealt with in a more succinct manner. In addition, Sandberg's book is almost encyclopedic in its references, which fill 269 pages; at the time when it was published, this was one of its major strengths. However, a great deal has happened since 1990, and the fact that *Cancer Cytogenetics* is more current is strongly in its favor. Unfortunately for the authors, the continued rapidly accelerating pace of discovery means that their volume, too, will have to be updated, perhaps in 4 or 5 years rather than 8 (the time between the 1st and 2d editions), and they will have to be very selective to avoid doubling the size of a 3d edition. Such is the penalty for trying to synthesize information in an exploding area of science.

JANET D. ROWLEY

Section of Hematology/Oncology
University of Chicago Medical Center
Chicago

© 1997 by The American Society of Human Genetics. All rights reserved.
0002-9297/97/6102-0033$2.00