

NUCLEAR MEDICINE ANNUAL 1987.

L. M. Freeman, H. S. Weissmann.

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This volume is the eighth *Nuclear Medicine Annual*. The apparent aim of the series is the presentation, in the context of as wide an audience as possible, of topics of current interest in the field. The editors of this volume have succeeded in this regard, in particular through their emphasis on clinically practical subjects.

The book's ten chapters cover a wide range of techniques and issues. The opening chapter, "Changes in Functional Imaging with Aging" by Richard Spencer and colleagues, is a monumental article for which a Part II is promised next year. It discusses the physiology of aging and its effect on outcome in nuclear medicine tests, and it reports nuclear medicine's contributions to the understanding of aging. The field's failures in this endeavor are also assessed, and the discussion about the direction of future research, that to entail both planar and single photon emission computed tomography (SPECT) imaging, is stimulating. This article is a lengthy and difficult reference piece, and I recommend its close reading to anyone interested in aging or involved in evaluating the function, size, and volume of organs. The reference list is extensive.

Next, Robert Hellman and David Collier address SPECT imaging, concentrating on bone, liver, and heart. They provide a very good section on practical approaches to filtering, with focus on the ramp filter and low-pass Butterworth and Hanning filters. Frans Wackers's well-written "Radionuclide Techniques for Acute Myocardial Infarction" addresses both thallium-201 and wall-motion studies, utilized when the patient arrives at the hospital and when he is about to be discharged.

Two successive chapters are on urologic imaging. Dr. Leonard's report on the Oklahoma experience in the lower genitourinary tract of children covers both direct and indirect cystography, as well as vesicoureteral reflux studies and other clinically useful procedures. A chapter on diuretic renography is very well done by one of the original authorities on the subject, Patrick O'Reilly. Dr. O'Reilly includes a discussion of parenchymal mean transit time and synchronous intrapelvic pressure measurements. Numerous reports on adrenal scintigraphy have recently been published, but it was still refreshing to read Drs. Shapiro, Gross, and M. Sandler's articulate treatment of the subject and their evaluation of the current state of adrenal medulla and cortex functional imaging.

Elissa Kramer and Joseph Sanger emphasize melanoma and breast cancer, with a look at ilio pelvic and peripheral lymphatics, in their assessment of the current status of lymphoscintigraphy. There is no question that this technique will increase in importance as nuclear physicians define its use and limitations and as fewer radiologists are interested in the technically difficult contrast lymphography. George Pjura and Edmund Kim's chapter on radionuclide evaluation of brain death is well written and, except for omitting a discussion on the choice of radiopharmaceutical e.g., technetium-99m (^{99m}Tc) labeled red blood cells versus [^{99m}Tc]pertechnetate, is comprehensive.

The ninth chapter, "Therapy with Intra-arterial Microspheres" by John Harbert and Harvey Ziessman, covers the basic principles of its subject well and is stimulating, but the discussion is a jumble of diagnostic and therapeutic uses of the procedure. The volume closes with an innovative paper by Glen Dalrymple, Charles Boyd, and James Doherty. "Multicompartmental Analysis for the Nonmathematician" is written for those who have avoided this approach because of its mathematical complexities. The authors define compartments, explain first-order linear differential equations, and distinguish variables from constants in this context. They also give an overview of modeling biomedical systems. The chapter is also a good practical guide to the software STELLA but at times in this regard is too much of a user's manual.

Overall, this is an excellent volume of *Nuclear Medicine Annual* and I highly recommend it to nuclear medicine physicians, whether in academics or private practice. There are only a few editorial errors, but they must be watched for: for example, on page 5, *antigen* is printed instead of *antibody-secreting cells*. The quality of the images, while acceptable, is by no means up to the standards of the text or the standards that the reader should expect. The most recent references in some articles are 2 or 3 years behind the 1987 publication date of the book. I would urge the publisher and the editors to adhere more precisely to their deadlines.

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NEW APPROACHES TO TUMOUR IDENTIFICATION. CANCER SURVEYS; ADVANCES & PROSPECTS IN CLINICAL, EPIDEMIOLOGICAL AND LABORATORY ONCOLOGY

K. E. Britton, Ed. Oxford, U.K.: Oxford University Press, 1987; 400 pp. Soft-cover, \$30.00

This booklet is a soft-covered compilation of ten excellent topics which are of interest to all involved in oncologic imaging. As the editor states in the preface, a tumor is no longer detected only by its physical attributes such as size, shape, position and displacement of other tissues, but now by using its essential cancerousness as the means of its identification. How to use the differences of normal and cancerous tissues in tumor identification both in vitro and in vivo is less clear and forms the basis of this special issue of the Cancer Surveys, which have been published quarterly.

Chan and Sikora discuss the possibilities of using the altered expression of oncogenes and their products in neoplastic tissues as markers for the diagnosis, prognosis and monitoring of human malignant disease. Recently developed immunohistological techniques coupled with the advent of the monoclonal antibody era have revolutionized diagnostic tumor pathology. This theme is taken up by Bobrow and Norton in demonstrating a means of early, more objective, diagnostic assessment of neoplastic lesions by the recognition of changed antigenic phenotype in preinvasive neoplastic cells.