BOOK REVIEWS


Like its predecessor, the second edition of Cardiovascular Nuclear Medicine continues to provide a comprehensive exposition of the most rapidly growing area in nuclear medicine. Since the first edition of this book, we have witnessed the development of practical techniques for performing multiple-gated blood pool imaging, the widespread application of thallium-201 myocardial imaging, and an increasing clinical acceptance of the results of nuclear medicine imaging methods in the care of cardiac patients. To address these advances, more than 90% of the material in the first edition has been rewritten by 43 distinguished contributors to the second edition.

The text is divided into six sections, three of which represent closely related clinical subjects. The first section introduces basic concepts in nuclear physics and instrumentation, describes currently utilized approaches to emission tomography, reviews the pharmacology of cardiovascular tracers, and explains the use of computers in the storage and analysis of complex cardiovascular data. All of these sections are well written and informative. Unfortunately, the limited space that can be devoted to physics and instrumentation precludes comprehensive coverage. Not surprisingly, therefore, these reviews are incomplete, uneven in emphasis, and, sometimes, not utilitarian. Liquid scintillation counting receives more coverage than gamma camera imaging, whereas a discussion of detector geometry has little use without a related discussion of collimator characteristics, particularly as they apply to gamma cameras.

Sections two, three, and four covering Clinical Application in Vivo, Infarct-avid Imaging, and Cardiomyopathies belong together as a single clinical topic. The majority of the chapters in these sections are well written and extremely informative. The attentive reader will be rewarded with a clear understanding of the strengths and limitations of various currently used methodologies together with a realistic appraisal of the clinical efficacy of these procedures.

Section five on peripheral vascular disease provides a crisp, clear exposition of the clinical utility of radioiodinated fibrinogen studies, but waxes anecdotal in the much longer review of radioactive tracer studies used for the evaluation of peripheral arterial disease. Several misstatements regarding the kinetics and classification of tracers need revision. Section six on Radioimmunoassays and Displacement Assays presents a good review of this important clinical tool. The bulk of this section addresses principles and methodology with only a passing view of clinical applications.

As with most multi-authored books, many chapters contain a moderate amount of duplication; in most instances, this is not detrimental, since the subject matter is sufficiently complex to bear repetition from more than one point of view. The high quality of the clinical discussions, however, is occasionally interrupted by chapters that painstakingly review old methodology devoid of clinical relevance.

Overall this book provides an important and exhaustive review of the state-of-the-art in cardiovascular nuclear medicine. Its weaknesses in organization and editing are minor compared with the wealth of information with which it will reward the serious and dedicated reader. The strength of the book lies in the clinical portions, which should prove equally valuable to the cardiologist and to the nuclear medicine physician. The basic science and instrumentation sections provide only a glimpse of what should be mastered by a physician who wants to assume responsibility for conducting cardiovascular nuclear medicine studies.

PETER T. KIRCHNER
University of Chicago
Chicago, Illinois


This textbook explains the basic physics required to practice nuclear medicine. The 19 chapters are supplemented with five appendices, plentiful tables, clear diagrams, and helpful references. The text is cogent, and Sorenson and Phelps show their concern for the reader by even including pronunciations for such names as “Anger” and “Cerenkov.” The organization is well suited to a reference work, with short sections on specific topics. This format occasionally appears choppy, such as in the noncontiguous sections dealing with collimator design, but the complete index allows the interested reader to find the information he requires. In general, more examples of intricate concepts may have been useful.

The subjects covered are timely, e.g., semiconductor detectors and accelerators. The historical settings of some of these are described to give the reader a deeper understanding of developments than a mere rendition of facts would provide. Sections on laboratory space design and regulations relating to radioisotopes are especially well handled. Although SI units are defined, they are not well integrated within the work. The sections on the molybdenum-99→technetium-99m generator are clear but lack a discussion of breakthrough elements other than molybdenum-99, a deficiency in light of the regulatory limits on such materials as aluminum. The section on tomography does not include coded aperture or Fresnel zone plate techniques. In view of their potentially important role in such areas as nuclear cardiology, these omissions are regrettable. Nevertheless, the textbook ably achieves its goal of covering nuclear medicine physics in a clear manner. The authors are to be congratulated for making difficult phenomena easy to understand.

THOMAS R. SIMON
SAMUEL E. LEWIS
Southwestern Medical School
Dallas, Texas


The authors indicate that the goal of this book was that it be “helpful to specialists and researchers in other fields who require a knowledge of the essentials involved in the biological response to radiation.” In other words, it presents a survey of radiation