

## BOOK REVIEWS

**CARDIAC NUCLEAR MEDICINE.** B. L. Holman, H. L. Abrams, E. Zeitler, Eds. New York, Springer Verlag, 1979, 88 pp, illustrated, \$19.00

This 88-page paperback monograph reviews the field of cardiac nuclear medicine. The contents of this monograph also appears as Volume II, No. 3 of the Springer *Journal, Cardiovascular Radiology*. The book is comprised of individual chapters by experts in the fields of ventricular function analysis, myocardial imaging, and other cardiac nuclear medicine techniques. Many of the authors are European. It is interesting to compare their approach to nuclear cardiology with that seen more commonly in this country. Their emphasis on the importance of image processing is clearly seen in the chapters on first transit of ventricular function analysis, equilibrium ventricular function analysis, and quantitative thallium imaging. The chapter on assessment of ventricular function using first-transit techniques gave an in-depth analysis of the mathematics and theory used in border definition. The scope of the chapter is beyond the knowledge required by beginners in the field but should be of interest to those who practice nuclear medicine. Similarly, in Adams's chapter on equilibrium radionuclide ventriculography, there was a strong emphasis on Fourier analysis. Many examples of amplitude and phase images were provided to demonstrate their role in the analysis of wall-motion abnormalities. Application of ventricular time-activity curves to the evaluation of L-V dysfunction was also emphasized. The chapter was well written and well organized and should be useful for groups in the United States that apply Fourier analysis to their equilibrium studies. Buell's chapter on quantitative assessment of thallium images was thorough and provided good information on the technical limitations of thallium imaging. Detailed discussions of the problem of background in thallium imaging were provided. There was little discussion of interpolative background subtraction programs or methods of calculating absolute thallium uptake. The utility of serial quantitative thallium images for assessing the change in count rate with time is not emphasized.

Excellent review chapters on the clinical utility of myocardial scintigraphy with Tc-99m-labeled agents and thallium imaging at rest and exercise are provided. Holman and Wynne summarize well "foci of increased activity" imaging, including both current data and an idea of expected future developments in this area. The chapter on thallium imaging at rest and after exercise by Lenaers is one of the best in the book. Several tables provide excellent summaries of existing data in this field, and the chapter is particularly clear and well organized.

The final chapters in the book discuss techniques that are currently used primarily for research. The chapter on assessment of regional myocardial flow using Xe-133 provides a good explanation of the technique and its theory, in addition to its limitations. Several potentially interesting applications to evaluation of the effect of drugs on the heart are provided. With relation to clinical and developmental work in nuclear cardiology, the authors place this technique in its proper perspective. The final chapter reviews the basics of instrumentation and image reconstruction for single-photon and positron-emitting radionuclides.

There are numerous tables and illustrations in the book, including many color plates of Fourier amplitude and phase images. These figures aid in communicating the complexities of Fourier

image analysis, edge detection, and other image-processing modalities. Each chapter contains a thorough list of references. The book is a good addition to the literature on nuclear cardiology. It will be of greatest interest to those who practice nuclear cardiology and desire greater familiarity with the image processing techniques discussed. Because of the emphasis on image processing in several chapters, the beginner in nuclear cardiology may find segments of the book too detailed, which somewhat limits the audience for the book. It should not, however, detract from its overall desirability to those who practice cardiac nuclear medicine.

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**DIAGNOSTIC IMAGING OF THE KIDNEY AND URINARY TRACT IN CHILDREN.** A. R. Chrispin, I. Gordon, C. Hall, C. Metrewell. New York, Springer International, 1980, 206 pp, \$66.00

At last, or so I thought, a book had been published dedicated to an integrated approach to diagnostic imaging of the urinary tract in children. This book of 206 pages containing an ample 271 figures in 418 separate illustrations sets as its objectives, "to help to indicate those techniques which may be most appropriately used, in an integrated way, to give that information which is essential to the rational management of an individual child's urinary tract problem." The book is oriented toward solving problems, and its structure therefore is based on this concept. The introductory chapter presents the clinical context within which we operate and especially addresses renal failure, enuresis, oliguria, hematuria, urinary tract infection, pain, and other complex syndromes and conditions of a generalized nature. The second chapter addresses the methodology for investigatory techniques and includes many practical hints for diagnostic imaging of the child. Included are discussions on interactions with the parents and the child, the preparation of the patient, injection technique, timing of radiographs, reactions to contrast media, sedation and anesthesia, voiding cystourethrography, ultrasonography, and radionuclide studies. This chapter represents the culminated expertise of the authors and as such represents an obviously vast experience, which is of benefit to anyone performing diagnostic imaging procedures of the urinary tract in children.

The following chapters address particular topics, such as obstruction of the urinary tract, infection, vesicoureteral reflux, nephrocalcinosis, nephrolithiasis, urolithiasis, innate abnormalities of renal development, vesicle and urethral problems, acute kidney lesions, renal abdominal and pelvic masses, adrenal and gonadal lesions, and, finally, bone changes in chronic renal failure.

Perhaps the most important critical comment relates to the objective of the book. I, as a nuclear medicine practitioner and radiologist, feel that the emphasis is more accentuated toward radiographic imaging than to ultrasound, and least of all to nuclear medicine and computed tomography. I counted the images and found approximately 305 roentgenograms, 91 ultrasound scans, 23 nuclear scans, and only two computed tomography scans. I