

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.

PHILIP O. ALDERSON
College of Physicians and
Surgeons of Columbia University
New York, New York

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

would argue that a ratio of 13 to 1 radiograms as compared with nuclear scans does not represent an "integrated approach to diagnostic imaging." Of further importance, there is sparse consideration for the functional quantification afforded by nuclear imaging, such as with renography and radionuclide cystography. There is little mention of the developing importance of renal clearance function studies, and there is no mention of transplant evaluation. Seemingly, the role of modalities other than radiographic imaging is often cursorily presented in a few sentences, indicating that they are helpful in certain conditions. Therefore, I am disappointed and do not feel that the book has met its objectives, at least as I interpreted them.

Another shortcoming is the abbreviated subject index—only 3.25 pages. For the amount of content within the book and the disease processes studied, this is not considered to be an adequate subject index. On the other hand, excellent, up-to-date bibliographies are offered with each chapter and represent an asset of the book.

The ample number of illustrations are of excellent quality; however, they are rather tiny, compatible with the relatively small size of the book. The quality of the images offsets their size, since the lesions are, in most instances, quite evident. I believe that the information could have been enhanced with the use of arrows or labels, particularly on the ultrasound images that may not be as familiar to practitioners as roentgenograms.

Of special interest to me was the attempt at philosophical enlightenment, with passages selected from Voltaire, Galbraith, and Tolstoy. The insertion of these passages provides for the reader some delight and relief from the usual scientific presentation.

Also of interest was the usage of terminology, which may be peculiar to the British. For example, a particularly interesting term was the word "dummy" for a pacifier. The *multiple* typographical and spelling errors, which are replete throughout the book, were disconcerting. I have never seen a textbook contain so many errors, and I assume that these are a reflection of the publisher's commitment rather than carelessness on the part of the authors.

In summary, I believe that this book provides an excellent review of the state of the art for diagnostic *radiographic imaging* of the urinary tract in children and reflects the expertise of the authors in the understanding of genitourinary disease in children. I feel that it fails in its objective to present an integrated approach to diagnostic imaging and is most weak in its evaluation of the roles of computed tomography and nuclear medicine. This shortcoming is unfortunate, since its strengths from a clinical point of view and the recognition of the basic importance of radiology could only have been enhanced with a more than cursory recognition of the importance of nuclear medicine.

JAMES J. CONWAY
Children's Memorial Hospital
Chicago, Illinois

CORRELATIVE SECTIONAL ANATOMY OF THE NECK AND HEAD: A COLOR ATLAS. J. R. Thompson, A. N. Hasso. St. Louis, C. V. Mosby Co., 1979, 411 pp, illustrated, \$175.00

"The purpose in undertaking this work was to bring to human anatomists and physicians a highly detailed, sectionally oriented display of features of the head and neck accentuated by radiographic imaging and quality color photography." These goals of the authors are carefully and authentically executed.

The book contains five sections—coronal sections of the head and neck; sagittal sections of the head and neck; coronal, sagittal, oblique, and axial sections of the orbit; coronal, oblique coronal, sagittal, inclined sagittal, and axial sections of the ear; and coronal and sagittal sections of the larynx. To obtain the natural colors of the tissues in the sectional specimens, the head and neck specimens were frozen shortly after death, embedded with polyurethane foam, imaged first by means of multidirectional tomography with a polytome and then by computed tomography, and finally milled to correspond to the exact same tomographic sections.

Approximately half of the atlas is devoted to coronal and sagittal sections of the head and neck. Tissue sections of the full head and neck are shown in black and white as well as color, with labeling on the black and white to denote structures. The tomographic sections can be correlated with the black and white photographs of the section. The computed tomograms show both optimum bone and soft tissue detail. In some sections multiple tomographic views are shown and for each section magnified matrix displays are used. In the sections on the orbit, ear, and larynx, only the color photographs of the sections are shown.

From a technical standpoint the authors are to be commended on their excellent reproductions of tissue and radiographic studies. The placement of black and white section photographs with labeling and color photographs on opposing pages provides an opportunity to study relationships in a detailed manner. These anatomical reproductions demonstrate in a most accurate manner the correlative information obtained from x-ray tomography. Since radiologic studies are viewed from one of several projections, the opportunity to evaluate such radiographs in light of true anatomical sections provides diagnostic enhancement and confidence.

Although we are accustomed to conceiving structures of the head in a sectional format, particularly axial, it is extremely helpful to have this information provided in a multiformat manner. This last mode will be of appreciable benefit to radiologists, ophthalmologists, otolaryngologists, and anatomists. The authors are to be congratulated on this excellent work.

FRANK H. DELAND
University of Kentucky and
Veterans Administration
Medical Centers
Lexington, Kentucky

AN ANALYSIS OF RADIOGRAPHIC QUALITY. D. P. Donohue. Baltimore, University Park Press, 1980, 131 pp, \$12.95

We have had the opportunity to use this text in our course on radiographic exposure. The contents of this book have been very appropriate for the curriculum of first-year students. Although use has been selective, it has been successful. The laboratory experiments are very appropriate, well designed and explained, and have contributed appreciably to an understanding of film exposure. This work is basic, thorough, with explanatory information that is adequate and is easy to follow. We have found this laboratory text beneficial as a part of our teaching program for radiologic technology students.

MARGARET HARDA
PEGGY HANNON
Johns Hopkins University
Baltimore, Maryland