Positron Emission Tomography of the Heart. S.R. Bergmann and B.E. Sobel, eds. Futura Publishing Company, Mount Kisco, NY, 313 pp, $98.00.

Since positron emission tomography (PET) was developed by Ter-Pogossian and Phelps in 1975, the field has evolved rapidly. During these 17 yr, there have been a number of books about PET, However, there are few books devoted solely to cardiac PET. Doctors Ter-Pogossian, Sobel, Bergmann and their colleagues at Washington University created an excellent PET center for both research and clinical purposes. Their experience with cardiac PET makes them well qualified to write this authoritative text.

This book covers basic concepts of PET, including instrumentation, physics, radiopharmaceuticals and clinical aspects of cardiac PET, such as evaluation of moycardial perfusion, metabolism and sympathetic nerve function. Of the 11 chapters, the first half are devoted to describing the basic science aspects of PET. The authors translate the sophisticated concepts into practical procedures applicable to quantitative analysis of myocardial perfusion and biochemistry in vivo. The last half of the book deals with clinical aspects of cardiac PET. Since PET has the unique capability to obtain quantitative information characterizing perfusion and metabolism in vivo in human subjects, its application to cardiac disease may provide an accurate estimation of myocardial blood flow, energy metabolism and other biochemical processes. These chapters clearly demonstrate the value and limitations of quantitative analysis of myocardial blood flow and metabolic analysis. Particularly, PET should play an important role in the identification of reversible ischemia and jeopardized myocardium, and thus, the selection of appropriate treatment. The chapter on the assessment of myocardial viability written by Porenta et al. reviews this role using myocardial perfusion and glucose metabolism. I believe that this is the most important part of this book. The final chapter reviews clinical applications of cardiac PET. In this chapter, Gropler et al. again stress the importance of assessing myocardial viability as well as detecting coronary artery disease using PET.

Evaluation of oxygen metabolism and sympathetic nerve function are two chapters of special interest to me. They include old historical questions and new solutions using this new and elegant technique. They describe the limitations of assessing myocardial energy metabolism via fatty acid or glucose pathways, partly due to utilization of a wide variety of energy substrates. However, assessment of oxygen utilization using PET and ^{11}C-acetate may hold promise for direct estimation of myocardial energy metabolism. At the same time, PET should assist in the evaluation of sympathetic nervous function in the heart. These current topics are nicely covered, with recent references from 1990 and 1991. These new applications of PET will provide insights into the severity of ischemia and pathophysiology in various myocardial disorders. The clinical roles of these new techniques remain to be clarified in future study.

Drs. Bergmann and Sobel are to be congratulated for creating a book reviewing cardiac PET from both a basic and clinical point of view. I believe that the advances in diagnosis made possible by cardiac PET will contribute to the development and assessment of novel treatments and facilitate early detection of cardiac disorders. It is my hope that this book will help both investigators and clinicians to apply this powerful technique effectively in cardiac research and clinical cardiology.

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High Resolution CT of the Lung. W.R. Webb, N.L. Müller and D.P. Naidich, New York, Raven Press, 1992, 166 pp, $79.00.

This book is a state-of-the-art monograph by three leading thoracic radiologists who are experts in the field of high-resolution CT (HRCT). This book is also a scholarly review of the current literature. The content is comprehensive, extremely well organized and easy to read.

With the development of any new technique, it is essential to establish uniform and clearly defined terminology. The authors have succeeded in this regard, and it represents the greatest strength of this book. The HRCT findings are defined in relation to specific anatomic structures and, as stated by the authors, they have intentionally avoided speculation. The HRCT findings are beautifully illustrated by high quality CT images, pathologic specimens and line drawings. There is also a glossary of HRCT terms with cross references to illustrations throughout the text.

In the chapter devoted to HRCT technique, the authors have reached a practical consensus as to the recommended technique. The technique is clearly outlined along with an explanation of the underlying physical principles employed by the technique. There is also adequate discussion and illustration of common artifacts seen on HRCT images. Both normal and abnormal HRCT findings are described and illustrated in detail. The chapter devoted to abnormal findings is organized according to specific HRCT findings, with in-depth discussions of specific disease entities that present with those findings. Easy to read tables summarize common HRCT findings for specific disease. There is a single chapter devoted to HRCT of the pleura. The final chapter discusses the clinical utility of HRCT.

This book is sufficiently instructive for those not familiar with HRCT techniques and interpretation, yet comprehensive enough to be interesting reading for those who are versed in the technique. This book should be required reading for all radiology residents, thoracic radiology or CT fellows and any radiologist who performs CT examinations of the lung. It is also recommended reading for pulmonary physicians.

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Selected Atlases of Bone Scintigraphy. S.H. Abreu, D. Van Nostrand, H.A. Zeissman. Springer-Verlag, New York, 1992, 140 pp, $69.00.

This book consists of four chapters, including a series of cases of skeletal trauma, SPECT cross-sectional anatomy of the spine, pelvis, hips and skull, SPECT quality control and the normal

sequence of bone scan/^{111}In-WBC findings patients with porous-coated hip prostheses.

The book is well produced although somewhat lacking in focus. The skeletal trauma cases are nicely capsulized, but the limited scope of the chapter (twenty cases) precludes its use as an inclusive reference for skeletal trauma. The SPECT atlas is similarly attractively presented and probably of most use for the nonradiologically trained imager who is uncertain of anatomic landmarks. The atlas of normal appearances on bone and ^{111}In-WBC studies inclusively depicts the normal temporal sequence seen in this group of patients. I found the SPECT chapter very informative regarding quality control procedures and potential SPECT imaging artifacts.

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Orthopedic Radiology: A Practical Approach, 2nd edition. A. Greenspan, Gower Medical Publishing, New York, 1992, 656 pages, $225.00.

Since the first edition of this comprehensive summary on the diagnostic investigation of musculoskeletal disorders, magnetic resonance imaging (MRI) has been introduced and has gained widespread acceptance. In the second edition, Dr. Greenspan incorporates MRI into the diagnostic process and once again accomplishes his goals of "providing a basic understanding of the currently available imaging modalities" and their utility in clinical management of orthopedic disorders.

As in the first edition, the book covers a broad range of topics with chapters covering trauma, infection, arthritis, tumors, metabolic and endocrine disorders and congenital and developmental anomalies. In addition, Dr. Greenspan has added chapters summarizing the imaging techniques and the pathophysiology of bone formation and growth. Targeted principally toward medical students and orthopedic and radiology residents, his logical, concise and clear presentation provides an accurate, up-to-date approach on utilization of available imaging modalities in the clinical evaluation of skeletal disorders. By summarizing the key points at the end of each chapter, he focuses the reader's attention on the practical concepts which directly impact on patient management. The high quality and variety of film reproductions and the clarity of the diagrams serve only to enhance the reader's understanding of the subject matter even further.

For the nuclear medicine specialist, this edition nicely incorporates scintigraphy into the clinical decision-making process in the context of plain film radiography, tomography, CT, arthrography, angiography, myelography, ultrasonography and MRI. Positron emission tomography and single-photon emission computed tomography are mentioned in the introductory chapter and otherwise are not pursued in much further detail.

With increasing specialization and rising medical costs, Dr. Greenspan's *Orthopedic Radiology* provides a unifying, cost-efficient approach by not only covering relevant imaging modalities but also placing them in context with the clinical picture, laboratory data and histopathology. Its concise and easy-to-read format make it an ideal reference book not only for residents and medical students but also for nuclear medicine physicians who desire further knowledge about imaging of the musculoskeletal system.

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Update on Nuclear Cardiology: Advances in Thallium Perfusion Imaging. Mallinkrodt Medical Inc. and Baylor College of Medicine. 1992, VHS tape, 26:30, $20.00.

This video presentation of the current state of ^{201}Tl perfusion imaging is moderated by Mario Verani with participation by Robert Bonow, Jamshid Maddahi and Ronald Schwartz. The videotape is accompanied by a 24-page monograph which describes the subjects covered on the videotape in slightly more detail. The topics covered include reinjection imaging, the value of PET and SPECT for viability assessment and the use of ^{201}Tl for assessment of prognosis, pre-surgical risk and in conjunction with vasodilators. The program makes only brief mention of alternative agents to ^{201}Tl, such as sestamibi.

The material succeeds in providing a broad overview of the current clinical applications of ^{201}Tl. An evaluation form and CME test is enclosed and the materials are certified for 1 hour of Category 1 continuing education credit upon completion of a 10 question examination and submission of a $20.00 fee.

I found the presentations to be clear and succinct. This CME package will be of value to residents, first year fellows and to those who desire a current perspective on applications of ^{201}Tl to imaging of the heart. The program efficiently imparts a good deal of useful information within an admirably brief period of time.

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