

AVULSION AND STRESS INJURIES OF THE MUSCULOSKELETAL SYSTEM

J. Tehranzadeh, A.N. Serafini, M. Joyce Pais, Eds., Basel, New York, Karger, 1989, 125 pp, \$52.75

This concise volume is composed of three chapters, each of which could stand alone as a short monograph on the particular topic presented. The first and longest of these presents in atlas fashion the radiographic findings in a multiplicity of avulsion injuries of bone. (Somewhat confusing, in this respect, is the inclusion of "avulsion-like" injuries that are not avulsions at all but are created by entirely different, usually more direct mechanisms.) These are organized anatomically with a minimum of explanatory text which is generally sufficient for purposes of defining the fracture discussed but usually insufficient to allow a firm grasp of the mechanisms and outcomes of the injuries. The chapter is essentially a lengthened version of an excellent paper published in *RadioGraphics* in September 1987 as a result of an RSNA exhibit. As expected from such an origin, the radiographs and accompanying figures are of superb quality as reproduced on high grade glossy paper.

The second chapter deals virtually exclusively with stress injuries of bone with an adequate discussion of mechanisms and examples at various anatomic sites. The illustrations are primarily radiographic with a few nuclear medicine and magnetic resonance imaging (MRI) images all of which are again of good quality.

The final and shortest chapter discusses nuclear scintigraphic applications and findings in the setting of skeletal trauma and goes beyond a discussion of stress injuries to include uses in frank fractures, assessment of healing, complications of trauma, and other orthopedic indications. While the chapter is too short to deal with the broadened topic in great depth, it does present a pithy overview, although one might argue that too much space is given to applications supplanted by newer techniques such as MRI, especially in areas such as internal derangements of the knee. From a radionuclide point of view, one might also expect a more complete discussion of the use of radionuclide bone imaging in enthesopathies and avulsion injuries as these constitute the supposed purport of the book.

In summary, this short, slick book seems best suited as a concise introduction to avulsion and stress injuries for radiologists or for a convenient atlas-like reference for particular avulsion injuries encountered in the acute trauma setting. The book does not seem intended for practicing nuclear medicine physicians. Its price, relative to its size, makes it perhaps an impractical, personal purchase for radiology residents or technologists but its excellent illustrations make it a desirable addition to a departmental library.

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MAGNETIC RESONANCE OF MYELIN, MYELINATION, AND MYELIN DISORDERS

J. Valk, M.S. van der Knaap, Heidelberg, Springer-Verlag, 1989, 390 pp, \$199.00

As stated in the preface, this book was written by a neuro-radiologist and a neurologist to show how the synthesis of all available information about myelin, myelination, and myelin disorders contribute to the interpretation of magnetic resonance (MR) images.

This book is well written and organized into 51 chapters. After a brief introduction about myelin and myelin disorders, the authors propose a new classification of myelin disorders which serves as a guide throughout the book. All items of the classification are extensively discussed under the sections of clinical features and laboratory investigations, pathology, chemical pathology, pathogenetic considerations, therapy, case presentation and MR imaging. Various MR imaging patterns of myelin disorders for early diagnosis are properly discussed and classified in Chapter 50 with ten tables and ten examples which are very useful. Chapter 51 is devoted to the possibilities and limitations of MR spectroscopy in myelin disorders.

The chapters are very informative and, whenever relevant and possible, illustrated by MR images. There are 115 figures consisting of 827 separate illustrations that demonstrate the points being discussed. The references listed together following the last chapter are timely and excellent, and the index is adequately arranged.

This book appears neither as a pure radiology text nor a pure neurology text. Within the book is an up-to-date survey of clinical, laboratory, and pathologic data pertinent to therapy and MRI finding of myelination and myelin disorders. The subject matter is well presented and will be of interest to neuroradiologists, neurologists, and MR specialists. This book also may appeal to general diagnostic physicians. I do not believe that nuclear physicians would find it a worthwhile purchase at \$199.00. I recommend this book for use by medical students, radiology and neurology residents, and practitioners. This book should be included in radiology and neurology libraries.

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NUCLEAR MEDICINE ANNUAL 1988

L.M. Freeman, H.S. Weissmann, New York, Raven Press, 1989, 339 pp, \$95.50

The 1988 volume, the ninth in the *Nuclear Medicine Annual* series, continues to fulfill the purpose of the series to review state-of-the-art diagnostic and therapeutic nuclear medicine procedures. There are nine chapters that cover bone

scans in breast cancer, single photon emission computed tomography (SPECT) in abdominal imaging, esophageal transit scintigraphy, captopril renal scintigraphy, radiolabeled monoclonal antibodies, osteoporosis, functional imaging of the elderly, and technetium-99m (^{99m}Tc) IDA scintigraphy in hepatobiliary disease. Generally, the chapters are thorough, but I did find some deficiencies in content.

The volume opens with a discussion by Fogelman and Coleman of bone scans in breast cancer patients. The introduction includes the pathophysiology of metastases to bone and abnormal bone scan findings. The authors discuss the diagnostic and prognostic follow-up roles of bone scans. They touch on the subject of bone marrow hyperplasia but could have improved that section by discussing the pattern of bone marrow involvement by metastatic disease versus bone marrow stimulation.

The current status of SPECT abdominal imaging is discussed by Van Heertum and his colleagues in Chapter 2. The technique and physics principles are well reviewed, and this section is followed by clinical uses, including liver sulfur colloid scans, red blood cells for hemangioma, infections with gallium-67 and indium-111-labeled leukocytes, and monoclonal antibodies for cancer treatment. Of the subjects covered, that on hemangioma could have been more detailed.

The two chapters on esophageal transit scintigraphy (ETS) are excellent. The authors Klein and Wald review the anatomy and physiology of the esophagus followed by the diagnostic assessment of esophageal motility disorders. The only inadequacy, perhaps, is the discussion of pediatric esophageal disorders. Renal scintigraphy with angiotensin-converting enzyme (ACE) inhibitors in the diagnosis of renal vascular hypertension is well reviewed by Sfakianakis' group. The authors discuss the pathophysiology involved and use excellent diagrams to explain the actions of ACE inhibitors. This chapter also includes useful diagrams on renal processing of radiopharmaceuticals in normal and disease states.

Radiolabeled monoclonal antibodies are covered by Keenan. He discusses the current status, future prospects and the history of the "magic bullet" reviewing basic immunology and defining terms. The Fab fragments are particularly well covered. The diagnostic and therapeutic uses of radiolabeled monoclonal antibodies for cancer are discussed completely, but I feel the section on non-cancer uses could have been substantially improved.

In another chapter, Silberstein brings us up-to-date on the diagnosis of and therapy for osteoporosis. His excellent discussion begins with problems in defining osteoporosis and the different diagnostic techniques available including single- and dual-photon absorptiometry and x-ray dual-photon and gamma camera techniques. Therapeutic modalities are reviewed, with a brief discussion on the screening procedure for osteoporosis and its justification.

Spencer and his colleagues provide a sequel to their 1987 article on the changes in functional imaging with aging, in reference to specific organ systems. As one might expect, the review is extensive, well referenced, and includes numerous mathematical formulae. The discussion of the thyroid is inappropriately lengthy, but sections on the genitourinary tract (in particular bladder dynamics and the effect of aging on kidney perfusion and glomerular filtration rates) and the spleen are well balanced.

In the final chapter, Drs. Krishnamurthy discuss quantitative assessment of hepatobiliary diseases with [^{99m}Tc]IDA scintigraphy. They describe the agents and the factors that determine the rate of clearance of [^{99m}Tc]IDA and discuss cholecystokinin and its analogues, biliary dynamics, and the gallbladder ejection fraction. Overall, I recommend *Nuclear Medicine Annual 1988* to all physicians practicing nuclear medicine. It is well written and has up-to-date references and good quality images.

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IMAGING IN CLINICAL PRACTICE

A.G. Chalmers, J.H. McKillop, P.J.A. Robinson, Edward Arnold, *The Educational, Academic and Medical Publishing Division of Hodder & Stoughton, 1988, 330 pp, \$25.00*

This book is the second title in the "Clinical Practice Series." The series is primarily intended for students preparing for the MRCP(UK). The book might also be useful for American medical students rotating through a radiology elective. However, residents of radiology would probably not find the book to have adequate breadth and depth needed for an introductory book. Paul and Juhl's *Essentials of Radiologic Imaging* would be a better alternative. Michael Parker's *Introduction to Radiology* would be an excellent choice in the same price range that medical students would enjoy as a quick reference and as a reader-friendly introductory book.

The 330-page paperback book is composed of ten chapters organized by organ systems; respiratory, cardiovascular, gastrointestinal, liver/biliary/pancreas, genitourinary, endocrine, skeletal, central nervous system, and oncology. The introductory chapter gives a brief history of imaging, the strengths and weaknesses of different modalities, and basic principles and tips on choosing the appropriate test(s). Radiation biology is also touched upon.

The organ system approach is interspersed with pictures of adequate but average quality. However, some important entities had no corresponding images. I find it deficient that a chest x-ray of tuberculosis was not included but a hydatid cyst was illustrated. New treatment and developments were almost totally excluded. Biliary and renal lithotripsy, prostate ultrasound, and magnetic resonance imaging were barely mentioned. Renovascular hypertension evaluation with captopril renal scans or renal artery doppler were not even included as alternatives. Maybe this book reflects the British's practical clinical approach to patient management. I would recommend this book to European students of medicine or any medical library.

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