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Problem Solving in Musculoskeletal Imaging

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BOOK REVIEW

Problem Solving in Musculoskeletal Imaging

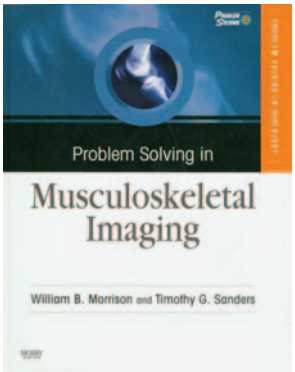
W. Morrison and T. Sanders, eds. Mosby; 2008, 788 pages, $149.00.

Conventional musculoskeletal radiology textbooks have traditionally been organized according to either disease category or body part, focusing on the imaging appearance of the entities presented. The end result has, at times, been exhaustive, yielding texts that are easily referenced but hard to read.

The "Problem Solving" series addresses this issue from a different perspective. Authors are asked to describe their approach to common imaging dilemmas in a textbook that is intended to be read cover-to-cover and not only as a reference source. The ultimate goal is for readers to gain insight into a musculoskeletal radiologist's thought process when deciphering frequently encountered imaging questions. Although probably not designed for dedicated musculoskeletal imaging specialists looking for advanced discussions of uncommon disorders, this first edition does achieve that objective for residents, fellows, and general radiologists looking for a practical intermediate-level textbook.

It is not easy to present all musculoskeletal disorders and imaging modalities comprehensively in a single-volume edition. Authors attempting such broad endeavors will inevitably encounter several shortcomings, either addressing each disease process too superficially or only covering the more common diseases and excluding the rarer ones. At times, throughout different chapters of this book, these limitations are evident.

Information in this full-color text is organized into 3 sections, each containing teaching points designed for quick learning and review. The first part of the first section presents practical methods to optimize multimodal musculoskeletal imaging. Technical issues involving the advantages and disadvantages of low-field vs high-field MR imaging scanners, coil selection, and protocol design are addressed, including the author's views on spatial and contrast resolution maximization, as well as reduction of artifacts. These topics are followed by a brief discussion of CT and ultrasonographic imaging techniques, including focal spot, pitch, mAs, kVp, reconstruction algorithms, and angulation. It is understandable that this type of textbook must include discussions about improving image quality across multiple modalities, but readers might find this section perfunctory. The accompanying CD includes more in-depth technical discussion, including patient questionnaires, specific MR/CT protocols, and pictorial examples of patient positioning and plane selection.



The second part of the first section deals with fluoroscopically and sonography-guided musculoskeletal interventions, including instruction on how to perform direct and indirect arthrography; joint injections and aspirations of the shoulder, elbow, wrist, sacroiliac joint, pubic symphysis, hip, knee, ankle, foot, and acromioclavicular joints, as well as percutaneous biopsies. Particularly useful are pictorial examples of fluoroscopic patient positioning with corresponding representative arthrograms showing different needle positions and contrast distribution. Percutaneous biopsy techniques, including coaxial and noncoaxial bone biopsy needles, stylets, and soft tissue guns are discussed, as well as different guidance modalities, including the use of MR guidance for CT and fluoroscopically occult lesions. This section is one of the strongest in the book, in which the authors offer expert guidance, with several useful tips on how to deal with superficial and deep lesions, as well as lesions near vital structures and spinal lesions. A more extensive discussion of preparation of biopsy samples would have been more useful for radiologists planning on incorporating these techniques into their clinical practice.

The second section of this book is perhaps the most conventional because it discusses a multimodal approach to the study of arthritis, tumors, and infection. Imaging characteristics and lists of differential diagnoses of arthritis and soft tissue and osseous infection are accompanied by brief discussions on how to differentiate chronic neuropathic arthropathy from superimposed osteomyelitis, as well as considerations of diagnosing infection around metal implants and atypical organisms. This section also addresses the author's general approach to multimodality imaging of soft tissue and bone tumors, including a discussion on potential pitfalls and the variegated appearances of pseudotumors.

The third and final section of the book is the largest and most in-depth. Organized by different anatomic regions, this section will probably be the one most repeatedly referenced by future readers. The authors and their contributors use their considerable experience to present a relatively comprehensive, concise, and accessible review of the more common disease entities affecting the shoulder, elbow, wrist, hand and finger, hip and pelvis, knee, ankle, midfoot, and forefoot joints, as well as skeletal muscle. Useful colored illustrations clearly depict normal anatomy and disease processes. A multimodality assessment of traumatic lesions and impingement syndromes is presented together with more than 700 complementary high-quality images. Particularly useful are the sections dealing with imaging of postoperative joints, which include discussions on other sources of pain, the appearance of graft harvest sites, artifacts, and dedicated imaging protocols. Tips on how to properly image the hip are included in the bonus accompanying CD.

Problem Solving in Musculoskeletal Imaging is a broad, well-written text authored by experts in the field of musculoskeletal imaging. It presents complex disease entities in an approachable manner, helping the reader enter the mind of a dedicated musculoskeletal radiologist. Numerous user-friendly tables, tips, and pearls are presented in a PowerPoint type approach,

which allows for easy learning. Although at times cursory, this text is more in-depth than previously published single-volume general musculoskeletal radiology books. Readers looking for more comprehensive discussions of uncommon diseases will be better suited by other more voluminous texts. However, general radiologists, residents, and fellows looking for an economical, well-organized, user-friendly instructional review will find this book indispensable.

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