Essentials of musculoskeletal imaging

Thomas R. Johnson, Lynne S. Steinback, eds, 900 pages, American Academy of Orthopaedic Surgeons 2004
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In the preface of this book, it is stated that the goal of the text is not to provide in-depth coverage of all imaging modalities for all musculoskeletal conditions, but rather to provide the physician with an easy-to-use guide for ordering and interpreting appropriate and cost-effective imaging studies for the most common problems seen in the office. This—and the fact that the book is published by the American Academy of Orthopaedic Surgeons—indicates that it is mainly meant for orthopedic surgeons. The title makes us suspect that the publisher also wanted to flirt with the radiological community, and to sell it to radiologists also.

The book has 11 sections. In the first, all imaging modalities are briefly presented. The second section covers general orthopedics including trauma with fracture types, healing and complications, infectious musculoskeletal emergencies, metabolic bone disease and complications of total joint replacement. In the sections that follow, tumors and diseases of different anatomical sites are described. At the beginning of each anatomical section there is an overview, covering anatomy, ossification centers, standard imaging views, emergencies, normal variants, and imaging tips. The last section covers pediatric orthopedics, which is introduced with an overview of considerations concerning imaging in children.

All sections consist of chapters dealing with specific problems. These chapters are short: usually only 3–4 pages. Each chapter is organized in a uniform way with headlines: Synonyms, Definition, History and Physical Findings, Imaging Studies, Image Description and finally Differential Diagnosis. Each chapter also has the ICD-9 code for the specific condition that is described.

The reviewers are radiologists, a senior musculoskeletal radiologist (KJ) and a radiology resident with special interest in MRI (IBB). This may bias us in the evaluation of this book. Although we work in close cooperation with the orthopedic surgeons of our hospital, we may not fully appreciate all the clinical details and considerations that are given. However, it is striking that the level of clinical information varies from chapter to chapter. Some of the chapters contain information suited to a first-year medical student ("The thumb has only two phalanges, a proximal and a distal phalanx, while the fingers each have three phalanges"), while others contain highly specialized information. In the chapter on patellofemoral instability and malalignment, the term Q-angle is used without definition. A list of differential diagnoses is given in each chapter. The lists for the upper extremity are longer and fancier than those for the lower extremity. These lists seem to cover clinical differentials before any physical or radiological examination has been done. The selection of conditions that are covered is adequate and reasonable most of the time, but is sometimes remarkable. Fifth metatarsal apophysis has its own chapter (2 pages), while all ankle fractures have only one chapter, although longer (7 pages). The selection of subjects should have been more strict.

Unfortunately, we feel that some authors do not know exactly what they are talking about. One states for instance that isolated triquetrum fractures are uncommon, and that these fractures are usually associated with other carpal fractures or dislocations. This is not true: isolated triquetrum fractures are common, but they are easily missed.

There seems to be a discrepancy in the attitude of orthopedic surgeons from the US and Scandinavia concerning certain conditions. In ulnar collateral ligament injury of the thumb, the authors recommend a stress view of the thumb if a fracture is not seen. In Scandinavia, this is a clinical diagnosis and not a radiological one—just as rotational malalignment, which is common in metacarpal fractures, is a clinical but not a radiological diagnosis. This is not mentioned in the chapter on metacarpal fractures. To be honest, rotational malalignment is mentioned in fractures of the phalanges of the hand.

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We feel that the authors intended this book for young residents in orthopedic surgery as an introduction to radiology, or for general practitioners with an interest in the locomotor system.

Some of the contributors to this book seem to believe too much in plain radiography considering it if necessary also for diagnosis of for instance septic arthritis or rupture of the deltoid and pectoralis major. We know that radiographs are of value in helping to rule out other diseases or conditions, but they are definitely not always required for diagnosis.

The choice of illustrations is sometimes strange. The chapter on perilunate instability and dislocation contains two cases of scapho-lunate dissociation (PA view), and one perilunate dislocation (lateral view). We think that it would have been more appropriate to have a PA view of a case with perilunate dislocation, which is very easy to miss. As a comparison, there is a chapter on luno-triquetral instability illustrated with a hand radiograph, where the most striking finding is a scapho-lunate dissociation, and the luno-triquetral dissociation cannot be appreciated. In no case is the DISI or VISI pattern of the lunate illustrated with lateral views.

As radiologists, we are of course especially interested in the illustrations. Most of them are good, but too many of them are poor, mainly due to overexposure and the pathology that they are supposed to illustrate cannot be appreciated.

Our impression of this beautifully designed 900-page book is that it is incomplete, both for orthopedic surgeons and for radiologists. The choice of illustrations is sometimes strange and confusing, and sometimes of poor quality. The clinical part is sometimes wrong or misleading. We are aware that it is a difficult task to publish a book like this covering both clinical and radiological aspects. This book certainly has merits, but it also has too many shortcomings.

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