

## PREFACE

### Imaging of Upper Extremities



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*Guest Editor*

The role of imaging in the evaluation of sports-related injuries of the upper extremities has evolved significantly over the past decade, with MRI becoming the imaging modality of choice for the evaluation of most soft-tissue injuries ranging from overuse injuries to acute traumatic injuries. Ultrasound has also emerged as a useful problem-solving tool that can be used in the targeted evaluation of certain upper-extremity injuries. To maximize the diagnostic value of these tools, the treating physician must possess a solid fund of knowledge regarding the roles of the various imaging modalities and an understanding of which studies are best suited for the evaluation of specific injuries.

This issue deals primarily with the more complex imaging modalities of MRI and ultrasound. First, excellent review articles provide a basic approach to the evaluation of an MR examination of the shoulder, elbow, and wrist. These articles provide a framework for the interpretation of these complex exams, reviewing the pertinent imaging anatomy as well as specific injury patterns that can be seen on MRI. Next, the role of MRI is discussed as it pertains to specific clinical problems that involve the shoulder, including an article on the MR evaluation of shoulder pain in the high-performance thrower and a review of the complexities of imaging the postoperative shoulder. Next, a review of the numerous nerve entrapment syndromes of the upper extremity specific to the athlete is provided, and the role of MRI in establishing these sometimes-elusive diagnoses is discussed. Stress fractures of the upper extremity are uncommon and often overlooked clinically. The various stress fractures of the upper extremity and their imaging appearance are comprehensively reviewed. The hand and wrist are at

increased risk for injury in many sports, and imaging of the small anatomic soft-tissue structures of these areas can be challenging. Two articles discuss the role of complex imaging modalities in these anatomic areas. The first provides a comprehensive review of MRI of ulnar-sided wrist pain, and the second deals with the imaging of the fingers and thumb. Several unique upper-extremity injuries are seen in the pediatric age group, and these are mostly related to the immature and developing skeleton. Special imaging considerations of pediatric sports-related injuries are discussed in a separate article. The next article reviews the utility of ultrasound in the evaluation of upper-extremity injuries and provides a comparison of the sensitivity and specificity of ultrasound as it compares to MRI. Finally, in response to the proliferation of low-field-strength magnets, particularly in the outpatient setting, a thorough literature review is provided comparing the use of low-field- and high-field-strength MRI. This article discusses the benefits and drawbacks of the use of low-field-strength magnets.

I would like to thank the many authors who have contributed their time and expertise to make this issue a reality, and I would also like to thank Deb Delapena of Elsevier for her support in putting this issue together. Finally, I hope that the readers find this issue helpful in furthering their understanding of the role of imaging as it pertains to the evaluation of sports-related injuries of the upper extremities.

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