



Preface

3T MR Imaging



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The intent of this issue of the *Magnetic Resonance Imaging Clinics of North America* is to provide an overview of the recent advancements in MR imaging related to the clinical implementation of 3-Tesla (T) field strength scanners. Since its inception, MR imaging has offered progressively more detailed and accurate anatomic images and increasingly physiologic information. Ongoing technical refinements in the implementation of progressively higher-field strength instruments continue to enhance the capability of MR imaging technology to delineate human structure and function. The optimal field strength for MR imaging has been a moving target. It was thought to be 0.3T in the early 1980s and has obviously changed during the maturation of the technology. As experience was gained and solutions to the challenges of increasing field strength were devised, the subsequent literature gave support to 1.5T devices. The acceptance of 3T units likewise is growing.

The appeal of methods to increase the available signal has been universal. Many require additional scan time. Increasing the field strength provides signal without this additional burden. The advent of 3T scanners coincides with important coil and

signal detection advancements in the form of parallel imaging, providing a unique synergy and opportunity to advance our capabilities to impact patient care through better imaging.

I am fortunate to have had the commitment of a number of colleague contributors, all of whom were chosen as clinicians and scientists involved in the early adoption of 3T scanners in their practice. This issue begins with a comprehensive overview of the fundamental principles of imaging at 3T with clinical examples of these principles in practice. This is followed by reviews detailing abdominal, musculoskeletal, and neuroradiologic imaging issues and their management, with clear delineation of the advantages and limitations of this imaging technique. The final article describes the application of 3T MR imaging to the problem of carotid atherosclerosis, its detection and characterization, and the potential for guiding the management of the disease.

I wish to thank all of the authors for their invaluable contributions. I hope that you will find the articles in this issue informative and provocative. I would also like to thank Barton Dudlick of Elsevier for his helpful and professional guidance in assembling this issue.