PREFACE

Magnetic resonance imaging is a powerful noninvasive tool for imaging the human body. Over the past twenty years, since its inception, a variety of important core procedures for imaging disease have been developed. Despite the fact that spin echo sequences or their variants remain present in most protocols, numerous other methods have come into being to address not only morphological issues but also functional aspects of the human body. And there is no end in sight to potential advances in the field. New methods are constantly coming onto the scene, but only a few make it into clinical practice. Nevertheless, there is a plethora of material in the literature, and for this reason we felt it time to tame this protocol beast and have a forum within which a hierarchy of protocols could be established and regularly updated. Of course, this mandates a publication that is able to metamorphose, a form of living text *per se*, in order both to build a complete coverage of methodology in the field and to stay current.

There are a number of serious challenges to this endeavor. First, there are a wide variety of field strengths that have been used to image humans, from 0.05 T all the way to 8.0 T today, with the most common range being from 0.2 T to 1.5 T. Second, there are numerous manufacturers of these systems, all with their own unique protocols. Third, as systems become out of date, even among those offered by a given manufacturer, hardware and often software change, and so what was available on one system might not be on the next generation of the same system. These issues will take time to deal with, and we welcome comments from the MR community on new or alternative protocols.

Each unit contains an introduction, the prescribed steps to run the scan, the scan parameters, troubleshooting information, clinical comments, and references. This template is, in some sense, repetitive for each unit, as many of the initial set-up steps for the patient are the same for each protocol. However, rather than make the reader hunt for commonalities, we chose to present each unit as a complete source in and of itself.

The present issue contains two sections, "established clinical protocols" and "educational material." We anticipate adding three further sections: one on "clinical research protocols" (which may or may not eventually metamorphose into accepted protocols and then move up to the first section), one on "quality assurance protocols," and one on "animal protocols" as a final section.

This publication is available in looseleaf format and is updated quarterly. We anticipate it becoming available on the Web eventually. Subjects in this manual are organized by sections and then chapters, with each chapter subdivided into units. Page numbering reflects this modular arrangement; for example, page A5.1.7 refers to the clinical protocols section, Chapter A5 (Miscellaneous Brain Pathology), Unit 1 (Multiple Sclerosis), and page 7 of that particular unit.

The basic tenet of this manual is simple: to have a resource which can be accessed to run any protocol from start to finish in magnetic resonance imaging, and provide you with the understanding of what is being done, why it is being done, and any difficulties that may arise during the process. On behalf of all the editorial board and contributors to CPMRI, we hope you find this resource an aid in your everyday practice of clinical magnetic resonance imaging.

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