

outlining the MRI spine protocols, designed for a General Electric 1.5T MRI scanner, in use at the author's institution.

Like all case study texts, this book is not an encyclopedia of spine imaging and would not be an appropriate choice for a definitive reference text on this subject. However, if one is searching for an overview of spinal MRI and CT, then this text is an excellent choice.

The cases chosen for the text include the MRI and CT findings of 74 of the more common and more important spinal abnormalities. Reflecting modern spine imaging, this book is heavily weighted toward MR imaging with CT and CT myelography discussed where appropriate. The image reproductions are generally excellent. Helpful charts and illustrations accompany many of the case discussions. The case discussions are generally very good and include a review of the current literature on each of the subjects. There is little chance that this text will become obsolete in the near future.

Thankfully, there is no separate chapter on MR physics. Instead, the appropriate use of various MR pulse sequences (SE, STIR, FSE, GE) is incorporated into the discussion.

Despite my recommendation of this book, there are a few criticisms. A somewhat disproportionate share of this text is dedicated to degenerative diseases of the lumbosacral spine. For example, Case 4 entitled "Bulging Annulus" receives approximately 1800 words of text, whereas Case 33 entitled "Intramedullary Tumour" receives only 960 words of text.

A few of the cases, such as Case 43 entitled "Scleroderma with Massive Calcification" and Case 69 entitled "Pigmented Villonodular Synovitis" border on the esoteric.

Overall, this is an excellent textbook. I highly recommend it to residents in radiology, general radiologists and other specialists interested in spine imaging. At the retail price of \$120.00, it is not prohibitively expensive.

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PRACTICAL ELECTROPHYSIOLOGICAL METHODS. 2nd Edition. 1993. Edited by Helmut Kettenmann and Rosemarie Grantyn. Published by Wiley-Liss, Inc. 449 pages. \$84 Cdn.

With the proliferation of techniques now available to the electrophysiologist, there is a need to provide practical information and guidance to either the novice or the established scientist wishing to turn to new technologies. Consequently, numerous books have appeared over the past several years attempting to fill this need. "Practical Electrophysiological Methods", was originally published in 1992 and is now in its second printing, a testimony to the fact that the reading (and buying) public is obviously looking for books of this nature. The present volume certainly covers a multitude of areas, given that there are almost 80 short chapters dealing with most modern electrophysiological techniques. An introductory section, on arrangements of electrophysiological set-ups, covers everything from grounding arrangements to fabrication of recording chambers. A subsequent section entitled "Preparations for Electrophysiological Experiments In Vitro" covers no less than 19 different topics, ranging from descriptions of a number of different in vitro slice preparations to cultured and dissociated cells. The book then covers electrical and chemical stimulation techniques, electrodes for recording, recording modes and dye and substance injection; each sub-topic in these areas is covered in a short three to

five page article. A section entitled "Special Applications" briefly outlines techniques required to determine such things as cell-cell coupling ratios, measurement of cell membrane capacitance, measurement of ion activity, measurement of extracellular space, etc. A final two sections, which could be particularly useful to the novice, discuss storage of data, suggested configurations of cheap recording rigs and give lists of suppliers along with their addresses and telephone numbers.

Because of the breadth of topics covered, this book cannot avoid being of some use to almost anyone. There are helpful hints and advice scattered throughout all of the chapters. Because several closely related techniques may be tackled by several authors in different chapters, there are sometimes items which can be gleaned from one chapter not available from another. For example, several different slice preparations are presented, yet, in reality, the techniques for preparing a brain slice, and the requirements for maintaining their viability do not differ markedly among different brain regions. Likewise, there are individual chapters on the fabrication, calibration and use of ion filled electrodes, all of which can be read to provide an overview of this area. Given this feature, one might ask why the editors have not chosen to present these areas in a more comprehensive manner with fewer contributors. Surely, for example, an individual who can present a chapter on various aspects of whole-cell clamp could also competently discuss fabrication of the appropriate electrodes.

With respect to content, the title is a little misleading. There are still substantial numbers of electrophysiologists carrying out important work utilizing intact, anesthetized vertebrate preparations, yet this topic is not covered. Another noticeable absence is the lack of representation of invertebrate preparations, many of which have provided information laying the ground work for the methods discussed in this book. It is also apparent to most electrophysiologists that the use of optical recording methods have become part of the repertoire of many, yet an analysis of the advantages and disadvantages of this approach relative to that of more standard electrophysiological techniques would be useful. If this book were to go into a third printing, it would be nice to see amalgamation and condensation of many of the present chapters thereby permitting some of these other areas to be introduced.

Given that the contributors to this volume are virtually all leaders in their respective fields, it is not surprising that I could find no obvious errors and mistakes. This is not to say that there were not omissions in some of the presentations and that a balanced appraisal of techniques and methodologies was always present. As some of the techniques and methodologies are presented by their discoverers or developers, a certain bias was sometimes evident. There was also a certain unevenness in the quality and presentation of the chapters, with some offering detailed recipes and fabrication techniques, with others presenting a more theoretical analysis. With some appreciation of the work and organization it must have taken to co-ordinate submissions on 80 different areas, it is understandable that the editors would have had difficulty controlling this aspect of presentation.

Despite the shortcomings mentioned above, I can recommend this book as a useful addition to the library of a neuroscience laboratory. It is reasonably up to date and has lots of useful information.

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