

Pediatric Brain and Spine
An Atlas of MRI and Spectroscopy

Ketonen · Hiwatashi · Sidhu · Westesson

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An Atlas of MRI
and Spectroscopy

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Preface

This is an atlas on contemporary MR imaging of the pediatric central nervous system. We have concentrated on brain imaging, but have an extensive chapter on the spine and a smaller chapter on the head and neck.

The book starts with a chapter on the normal myelination and normal variance. We are including chapters on malformations, inherited conditions, infection, tumors, trauma, vascular abnormalities, and spine abnormalities. The last chapter of the book is a miscellaneous chapter that includes all those cases that did not fit well in other categories. The chapter on trauma and brain damage includes an extensive section on CNS manifestations of nonaccidental pediatric trauma. There is also an exciting chapter on fetal MR imaging describing some of the more common abnormalities seen in prenatal imaging. We have intentionally avoided discussing some of the ethical aspects of fetal imaging.

Cases in this book range from those commonly seen in clinical practice to many exceedingly rare conditions. The book format has allowed us to illustrate these unusual cases generously, and in many we have been able to include MR proton spectroscopy and diffusion images. We included a few CT images when they were an essential part of the diagnosis, classic presentations or showed the abnormalities the best. It was not our intention to publish a textbook, but rather an atlas-type book on pediatric neuro-MR imaging. We have concentrated on multiple high-quality images, which will allow the clinician to identify an unknown case relatively quickly by simply comparing the images of his patient with the images in the book. A short discussion is associated with each case, but for more detailed and in-depth information we refer to existing textbooks.

The book is a collaboration between four authors and three collaborators all with different backgrounds, training from different parts of the world and with different clinical experiences. Dr. Leena Ketonen is the lead author and has a long-term interest in pediatric neuro-imaging. During her 20-year ca-

reer in neuroradiology she has continuously gathered interesting cases. When Dr. Ketonen moved from Massachusetts General Hospital in Boston to the University of Rochester it was quite obvious, looking into her new office, that she had a very extensive collection of such cases. She would have needed a much larger office than the one we were able to offer her just to store her enormous teaching file. Seeing her phenomenal collection of cases and pairing that with our positive experience writing our previous book, *Diffusion-Weighted MR Imaging of the Brain*, it was obvious that we had both an idea and the material for another neuro-imaging book. We decided on the topic of pediatric neuro-imaging with Dr. Ketonen as the lead author. We started out with the intention of having ten cases per chapter, but it soon became obvious that the number of cases would double for many of the chapters. The book is based mainly on Dr. Ketonen's collected cases, backed up by the University of Rochester's teaching file, started many years ago by Dr. Numaguchi. We have incorporated cases of fetal MR imaging (Chap. 11) that we borrowed from Dr. Susan Blaser of the Children's Hospital in Toronto.

Dr. Akio Hiwatashi has been instrumental in correcting, manipulating and formatting the images for this book. Dr. Ravinder Sidhu has been the lead person for looking up background information and making sure we have the most appropriate and up-to-date references. Dr. Westesson has been the leader of the project and has kept it moving forward while writing the head and neck chapter. The contribution of Susan Blaser has been instrumental. Her outstanding collection of prenatal MR cases constitutes the bulk of Chap. 11. In addition we have enjoyed the help of Drs Lawrence Buadu and Sudhir Kathuria for the chapters on miscellaneous conditions and nonaccidental trauma (child abuse).

Our experience from working with Springer on our earlier book was totally positive from the beginning to the end. The printing, editing and image quality along with the layout of the book were first quality and the publisher proved to be able to produce this

quality work in a short period of time. This experience has been repeated with this second project. It should be mentioned that we started this book in December of 2003 after the RSNA and it was published less than one year later, which is a remarkable accomplishment thinking of how many high-quality images were included. We would like to thank the editors at Springer, Dr. Heilmann and Mrs. Dörthe Mennecke-

Bühler, our graphic designer at the University of Rochester, Margaret Kowaluk, and our secretaries, Belinda De Libero and Jeanette Griebel. Special thanks go to our families for sacrificing the time and energy that we invested in this project.

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