Neuropathologic and Neuroradiologic Correlations

A Differential Diagnostic Text and Atlas

Edited by

Murat Gokden
Department of Pathology, University of Arkansas for Medical Sciences and Arkansas Children's Hospital, Little Rock, AR, USA

Manoj Kumar
Department of Radiology, University of Arkansas for Medical Sciences, Little Rock, AR, USA
To my wife Neriman and my son Alper for their love, support, and inspiration, and for their sacrifice during the preparation of this work.

To my parents Abdurrahman and Nebahat for the opportunities they have given me, and the wisdom they continue to provide.

To those who have taught me.

MG

To my parents, Punnu Ram and Reeta Devi, who have made me what I am, with their high principles and simple life, values of hard work, sincerity and perseverance.

To my lovely wife, Geeta, and my cutie pie Saanvi, whose love, support, and sacrifices are the pillars of my strength and motivation.

To all my teachers, friends, and colleagues, who have made me a better person, and continue to make me a better radiologist every day of my life.

And finally to all my patients, who have given me the chance to serve them, learn from them, and become a better physician.

MK
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978-1-107-56725-2 — Neuropathologic and Neuroradiologic Correlations

Edited by Murat Gokden, Manoj Kumar

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Shivani Ahlawat, MD
Department of Radiology, Musculoskeletal Section
The Johns Hopkins University School of Medicine
Baltimore, MD
USA

Edgardo J. C. Angtuaco, MD
Department of Radiology
University of Arkansas for Medical Sciences
Little Rock, AR
USA

Brooke Beckett, MD
Department of Radiology
Oregon Health and Science University
Portland, OR
USA

Harprit Singh Bedi, MD
Department of Radiology
Tufts University Medical Center
Boston, MA
USA

Travis Danielsen, MD
Department of Pathology
University of Texas Southwestern Medical Center
Dallas, TX
USA

John Edry, MD
Department of Neurology
Georgia Regents University – Medical College of Georgia
Augusta, GA
USA

Robin Elliott, MD
Department of Pathology
University Hospitals Case Medical Center
Cleveland, OH
USA

Bret Evers, MD
Department of Pathology
University of Texas Southwestern Medical Center
Dallas, TX
USA

Girish M. Fatterpekar, MD
Department of Radiology
New York University School of Medicine
New York, NY
USA

Laura M. Fayad, MD
Department of Radiology
Johns Hopkins University
Baltimore, MD
USA

Ramon Figueroa, MD
Department of Radiology
Georgia Regents University – Medical College of Georgia
Augusta, GA
USA

Theodore Friedman, MD
Inova Pathology Institute
Pathology
Fairfax, VA
USA

Melissa Gener, MD
Department of Pathology
Children's Mercy
Hospitals & Clinics
Kansas City, MO
USA

Bruce C. Gilbert, MD
Department of Radiology
Georgia Regents University – Medical College of Georgia
Augusta, GA
USA
<table>
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<td>Charles M. Glasier, MD</td>
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<td>Department of Pathology and Laboratory Medicine</td>
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<td>Raghu H. Ramakrishnaiah, MBBS, FRCR</td>
<td>Department of Pediatric Radiology and Neuro-Radiology, University of Arkansas for Medical Sciences</td>
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<td>Fausto Rodriguez, MD</td>
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<td>Sumit Singh, MD, FCAP</td>
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Preface

In the evaluation of the neurologic patient, neuroradiology and neuropathology play a central role not only in the accurate diagnosis of the disease process, but also in the guidance of both surgical and medical management and follow-up. In addition, they are paramount to the understanding of the disease process in a given patient, especially in this era of personalized medicine. Therefore, as an integral part of the neurologic and neurosurgical teams, neuroradiologists and neuropathologists provide a critical contribution to the diagnosis and care of their respective patients at all levels.

Especially in neuroradiology and neuropathology, a good understanding of the other enhances the diagnostic accuracy of each. While neuropathologists frequently refer to neuroradiologic findings in difficult cases as part of their work-up to generate differential diagnoses and elicit additional specifics to address, neuroradiologists also frequently follow the neuropathologic findings, both to increase their experience in difficult cases and to take the advantage of this knowledge in their follow-up studies. Likewise, our clinical colleagues certainly use the information from both specialties to diagnose and treat their patients, and build their experience with rare occurrences.

These and other factors, especially the need for clinical-radiologic-pathologic correlations in our joint educational conferences, tumor boards, teaching sessions, and one-on-one discussions between colleagues from these specialties, sparked the idea of preparing a book that will serve as a resource at multiple levels to a broad readership in neurologic specialties. Although neuroradiologic and neuropathologic features of diseases are included in many texts, there are only a few other major resources dedicated to their specifics. This book, however, has been designed with a more practical, real-life-like approach. It focuses on a closer integration of neuroradiologic and neuropathologic findings, and a regional organization of topics as one would encounter them when a patient presents. The classic demographic and pathogenetic information on specific diseases has been minimized, except when otherwise necessary, and emphasis has been placed on the explanation of findings and their correlation. An attempt to keep a balance between text and image content has been shown; nonetheless, both neuropathology and neuroradiology are image-based, visual specialties, and the necessity and temptation to include more images was hard to resist in order to keep that balance.

Due to the location-based approach in most chapters, some overlap of common entities encountered in multiple sites has been allowed to keep the continuity of the subject. In a few other instances, cross-referencing has been made.

In accord with and as an advantage of its design, this book can be used as a hands-on resource in the daily practice of all practitioners involved in the diseases of the nervous system and its related tissues, a systematic learning resource for the training of students, residents, and fellows in these specialties, and as a review book for board examination preparations in their respective areas. It is our greatest hope that the reader will find this book to be an invaluable resource for their patient care and educational needs, allowing neuroradiologists and neuropathologists to continue to contribute to the care of the neurologic patient in their unique ways, behind the scenes.

No medical service is an individual encounter, but requires a team of professionals to complement each other. Neither patient care nor this work would have been possible without the contribution of many individuals. First and foremost, we are indebted to our patients, whose diseases required our expertise, for allowing us to serve them in their struggle to overcome their diseases, and to build more knowledge and experience through them, so that we can improve the care of others who will come after them, and pass on what we know to other medical practitioners. We are deeply grateful to our many contributors, who agreed to share their expertise with us in this book, and donated their invaluable time and effort to make it happen. We thank our colleagues and trainees, both in our own specialties, as well as in others with whom we collaborate. We are especially grateful to the departments of neurosurgery and neurology, with whom we work closely on a day-to-day basis, for allowing us to participate in the care of their patients, for their collegiality, and for providing a stimulating academic environment, turning work into a joyful learning and teaching activity. We could not have turned what we knew into a book like this without the assistance and expertise of the professionals dedicated to publishing in Cambridge University Press (CUP), to Ms. Nisha Doshi, Senior Commissioning Editor, Medicine, Ms. Kirsten Bot and Mr. Neil Ryan, Content Managers, STM, and the copy-editor, Ms. Zoë G. Lewin, as well as all the individuals at CUP who contributed to the realization of this book.