Foreword

I have had an intellectual affair with cranial nerves since my days as a neuroradiology fellow at University of California, San Francisco. Cranial nerves tie together two of my loves: the brain and the anatomy of the face and neck. Many neuroradiologists and other practitioners shy away from the complexity of the cranial nerves, as assessing and imaging the cranial nerves leads them by necessity into difficult anatomy at and below the skull base. Few neurosurgeons, in my experience, appreciate fully the myriad neurological manifestations of extracranial disease of the cranial nerves.

It is with these needs in mind that three of the most talented physicians I know, world-class neurosurgeon Devin K. Binder, MD, PhD, and superb neuroradiologists Nancy Fischbein, MD, and Christian Sonne, MD, collaborated to produce Cranial Nerves: Anatomy, Pathology, and Imaging. Their work beautifully summarizes the functional anatomy and pathology of the 12 cranial nerves, complete with bullet-point summaries and gorgeous illustrations highlighting case studies. This contribution combines the surgical perspective of an experienced neurosurgeon and the imaging knowledge of two talented neuroradiologists to provide to the broad community of clinical neuroscientists and practitioners a better understanding of complex cranial nerve anatomy and pathology.

They have exceeded my expectations and produced a wonderful addition to my library that will become a classic.

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Preface

This book is intended for medical practitioners with varying levels of knowledge, from the medical student beginning to study the cranial nerves to house officers and physicians whose clinical practice involves cranial nerves. Specialists in neurology, neurosurgery, neuroradiology, otolaryngology, ophthalmology, maxillofacial surgery, radiation oncology, and emergency medicine would, of course, be expected to have an interest in cranial nerves. The anatomy and pathology of cranial nerves, however, may in fact be of interest to a broad variety of physicians at many levels, as well as to other health sciences professionals, including nurses and physician assistants in the fields listed above. Students and practitioners of dentistry, speech pathology, audiology, physical and health education, and rehabilitation sciences may also find this book useful in their clinical practice.

We wrote this book because there is currently no cranial nerve atlas that combines normal anatomy with case studies and pathology illustrated with modern cross-sectional techniques. The shift in medical education from didactic to problem-based learning is paralleled in this book. Over the past few years, advances in imaging have enabled improved visualization of structures and pathologies that could not be previously identified noninvasively. Pathology affecting every cranial nerve can now be assessed routinely with high-resolution computed tomography and magnetic resonance imaging.

Following a general introduction to the cranial nerves, each chapter explores one of the 12 cranial nerves. Anatomical information regarding origin, course, and function is presented first. This is followed by normal imaging anatomy, a differential diagnosis of various pathologies affecting the nerve (organized from proximal to distal), and, finally, a series of illustrative clinical cases with detailed annotated imaging. Information is presented in bulleted outline format that eliminates superfluous text and facilitates information retrieval. Where appropriate, boxes with more detail on specific pathologies accompany the text.

Clinical and imaging pearls abound throughout. The Appendices provide more detailed information on brainstem anatomy, pupil and eye movement control, parasympathetic ganglia, and cranial nerve reflexes.

Drawing on our years of experience in teaching residents and fellows in neurosurgery and neuroradiology, we bring to this book a wealth of case-based learning. We are pleased to have the opportunity to share with you our teaching file of high-quality images of numerous cranial nerve pathologies with clinical correlation. We hope that this book will serve as a frequently referenced learning tool for all levels of interested healthcare professionals. We will have succeeded in our goals if we have fired the interest of our readers in this important topic and if we have contributed to patient care.

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