Introduction

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Neuro-ophthalmic diseases may be both sight- and life-threatening and often require expedient management for optimal clinical outcomes. However, due to the rarity of many of these conditions, both individual practitioners and the medical community at large may have limited experience, as well as imperfect scientific data, regarding their ideal management. Additionally, because of the high-stakes nature of many of these diseases (in which delayed or missed diagnosis or inappropriate treatment could lead to permanent vision loss, neurological disability, or even death), some eye care providers may feel nervous or inadequately prepared to handle these patients.

While patients with these disorders often initially present to ophthalmologists or optometrists, they also may present to primary care clinics, emergency departments, or the clinics of neurologists, endocrinologists, or otolaryngologists. Therefore, familiarity with the anatomy relevant for localization of these problems, as well as the clinical features that compel urgent or emergent testing or intervention, is valuable for a wide range of providers. While many of the neurologic pathways travel vertically, the visual pathways traverse predominantly in the anterior-posterior plane and involve or surround important intracranial structures including the cavernous sinuses, pituitary gland, brainstem, and third and lateral ventricles. Additionally, over a third of the cerebral cortex is dedicated to vision, making the neuro-ophthalmic examination crucial for localization of many neurologic disease processes.

In neuro-ophthalmology, as in many fields of medicine, expert opinions regarding optimal management of disease may differ, and newly published data that may change preferred practices frequently become available. Keeping up with the pace of relevant new publications can be daunting and, particularly for practitioners caring for a wide variety of ophthalmic conditions (e.g., residents, optometrists, and

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comprehensive ophthalmologists) and practitioners outside of the eye care field, nearly impossible. Therefore, we developed this book for medical practitioners who are likely to encounter patients with neuro-ophthalmic disease in their practices, with the goal of providing a concise, case-based resource that distills the evidence for evaluation and treatment of neuro-ophthalmic conditions into a readable format.

Written by experts in the field of neuro-ophthalmology, this book provides an evidence-based approach to controversial management decisions, presented in a digestible, case-based structure. We focus on topics that (1) historically have presented a dilemma regarding optimal management, (2) have undergone a recent shift in traditional management due to new scientific discoveries or novel therapies, or (3) require different management strategies depending on nuances of the case presentation. In situations in which the data are not adequate for strong support of a single management pathway, we present the available data, as well as expert opinion on management (highlighting controversies where they exist), thus providing a foundation for the clinical judgment of the practitioner in individual cases.

The format of this book was inspired by the manner in which we, as both clinicians and educators, think and teach on a daily basis in our own clinics, with our students, residents, and fellows. To start each chapter, we present one or more illustrative cases along with associated management dilemma question(s). Based on the case presentation(s), we then discuss the relevant diagnosis, evaluation, and treatment issues; the associated scientific evidence; and expert guidance regarding management recommendations to identify dangerous disease urgently and to provide the best available treatment for optimal patient outcomes. Additionally, we emphasize situations in which co-management with practitioners in other fields of medicine is advocated. By using this case-based approach, we provide a framework for clinical decision-making that is directly transferable to the patient care setting.

We hope that use of this resource will improve your familiarity and comfort level with the neuro-ophthalmic conditions presented, provide an efficient review of the available evidence to guide management of these conditions, and outline evaluation and treatment recommendations that will facilitate improved patient care.