



## Progress in neuro-ophthalmology

Change has come slowly to the field of neuro-ophthalmology. The major transformative innovations in diagnostic neuroimaging occurred decades ago but the field remained mostly a diagnostic subspecialty. Over the past few years however a new birth of innovative translational tests and treatments have emerged and have accelerated progress in neuro-ophthalmology. This dramatic wave of new testing and treatment modalities is the impetus for this monograph entitled “*Progress in neuro-ophthalmology.*” We hope that you enjoy this information and the continued and evolving journey of our specialty from the diagnostic to the therapeutic realm.

In this issue Huang and associates provide a comprehensive review of the diagnosis and treatment of neuromyelitis optica (NMO), formerly known as Devic syndrome, and myelin oligodendrocyte protein associated optic neuropathy. The clinician must be aware of these conditions which may mimic the more common optic neuritis seen in multiple sclerosis because treatment may be considerably different. If not recognized and treated appropriately, visual prognosis may be effected.

Ischemic optic neuropathies are one of the most frequently encountered neuro-ophthalmic conditions in more elderly patients. Palkovacs provides a succinct review of the various types of ischemic optic neuropathies; in particular, the importance of differentiating non-arteritic from arteritic anterior ischemic optic neuropathy (NAION *vs.* AAION). This distinction is crucial because AAION must be immediately treated with high dose corticosteroids whereas there still remains no proven effective treatment for NAION. Also highlighted is the very rare occurrence of “idiopathic posterior ischemic optic neuropathy (iPION)”. If a patient presents with acute visual loss, relative afferent pupillary defect and a normal fundus, multiple other diagnoses must be considered other than iPION.

Ocular coherence tomography (OCT) has become increasingly useful in variety of neuro-ophthalmic conditions. Chen and Costello review the progress in OCT in the diagnosis and management of optic nerve disorders including optic neuritis, optic disc drusen, papilledema, and compressive optic neuropathy. The authors also provide a nice synopsis of the utility of OCT in differentiating visual loss due to nerve, retina and nonorganic etiologies.

Transient monocular visual loss (TMVL) often is due to acute retinal arterial ischemia and referred to as amaurosis fugax. Contrary to traditional thinking, recent studies have shown this to be equivalent to acute cerebral ischemia and should be considered an ocular emergency. They are at high risk for subsequent stroke and myocardial infarction. Dattilo and associates summarize the recent literature regarding retinal arterial ischemia, its ramifications and recommended management. We agree with their recommendation: “...*once the diagnosis of acute retinal ischemia is made, these patients are immediately referred to the nearest emergency care center affiliated with a certified stroke center.*”

Double vision is a common neuro-ophthalmic presenting complaint. Myasthenia gravis is almost always on the differential diagnosis because it can mimic most patterns of ocular misalignment. Jabbehdari and Golnik discuss the most recent updates on diagnosis and management of myasthenia and emphasize the potential difficulties in confirming the diagnosis. Once confirmed, this condition should be co-managed with neurology as systemic manifestations are common.

Pineles reminds us that pediatric neuro-ophthalmology is not just neuro-ophthalmology for small adults. She highlights four common pediatric conditions: (I) idiopathic intracranial hypertension, (II) pseudopapilledema, (III) optic neuritis and (IV) optic pathway glioma. Similarities and differences between pediatric and adults in pathophysiology, diagnosis and management are described.

Thus, there have been many important advances that impact our ability to diagnose and treat common neuro-ophthalmic conditions. These have been highlighted in this special issue of the *Annals of Eye Science (AES)*; a must read for any physician encountering patients with visual loss or double vision.

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