SOCIETY TIDINGS

Summary of the Neuro-Ophthalmology Symposium in the 31st Asia-Pacific Academy of Ophthalmology Congress (APAO 2016)

Hui-Chen Cheng^{a,b}, Tzu-Lun Huang^{c,d,e}, Ko-Jo Lin^f, Rong-Kung Tsai^{e,g}, Lin-Chung Woung^h, May-Yung Yen^{a,b}, and An-Guor Wang^{a,b}

^aDepartment of Ophthalmology, School of Medicine, National Yang-Ming University, Taipei, Taiwan; ^bDepartment of Ophthalmology, Taipei Veterans General Hospital, Taipei, Taiwan; ^cDepartment of Ophthalmology, Far Eastern Memorial Hospital, Banciao District, New Taipei City, Taiwan; ^dDepartment of Electrical Engineering, Yuan-Ze University, Chung-Li, Taoyuan, Taiwan; ^eInstitute of Medical Sciences, Tzu Chi University, Hualien, Taiwan; ^fDepartment of Ophthalmology, Wan Fang Hospital, Taipei Medical University, Taipei, Taiwan; ^gInstitute of Eye Research, Buddhist Tzu Chi General Hospital, Hualien, Taiwan; ^hDepartment of Ophthalmology, Taipei City Hospital, Taipei, Taiwan

The 31st Asia-Pacific Academy of Ophthalmology Congress was held on March 24–27, 2016, at the Taipei International Convention Center (TICC) and Taipei World Trade Center (TWTC), Taipei, Taiwan. Over 4500 participants, including fellows, residents, and practising ophthalmologists from around the world were present.

The Neuro-ophthalmology Symposium was divided into several sections on different days. The topic of the first section was “Optic Neuropathy.”

Dr. Dan Milea, Singapore National Eye Centre, introduced the basic concept to manage a patient with optic atrophy. In such patients, history taking, logical algorithm, and lists of differential diagnosis are always important. Dr. Patrick Yu Wai Man, Newcastle Eye Centre, Royal Victoria Infirmary, United Kingdom, discussed the medication-related optic neuropathy, with emphasis on ethambutol- and amiodarone-associated optic neuropathy. Dr. John J. Chen, Mayo Clinic, United States, discussed the definition of chronic relapsing inflammatory optic neuropathy (CRION) and its differences compared with neuromyelitis optica (NMO). Dr. Rashmin Gandhi, Pramukhswami Medical College, Chennai, India, made a through review of the evidence of treatment for non-arteritic anterior ischaemic optic neuropathy (NAION). In the end of this section, Dr. Patrick Yu Wai Man introduced the treatment strategies for patients with Leber’s hereditary optic

neuropathy (LHON). The clinical trial of idebenone and the other coenzyme Q10 analogue, QPI-1007, is still ongoing. Gene therapy with adeno-associated virus (AAV) as vector is nowadays a promising treatment for patients with the 11778 mutation.

On the second day of the congress, the neuro-ophthalmology symposium focused on the “Approach to the Patients with Vision Loss.” Dr. Sharon Tow, Singapore National Eye Centre, Singapore, introduced the basic concepts, pearls, and pitfalls of visual field (VF) testing. Dr. John Chen discussed the role of optical coherence tomography (OCT) in vision loss. According to the peripapillary and macular nerve fibre layer (NFL) analysis, ophthalmologists can identify the anatomical loss of NFL, localise the possible lesions, and clarify the differential diagnosis. Dr. An-Guor Wang, Taipei Veterans General Hospital, Taipei, Taiwan, discussed how to diagnose and manage patients with non-organic vision loss. Obtaining correct diagnosis of functional visual loss may not only help the patients but also prevent adverse effect from treatment. Dr. Celia Chen, Flinders Eye Centre Clinic, Australia, discussed how to approach the patient with transient visual loss. For patients with monocular transient visual loss, ocular (e.g., keratoconus, etc.) and non-ocular factors (e.g., giant cell arteritis, etc.) should be considered. For patients with binocular visual loss, lesions at retrochiasmal

area should be suspected. Prof. Graham E Holder, Moorfields Eye Hospital, London, United Kingdom, introduced the application of visual electrophysiology in neuro-ophthalmology. Combining visual-evoked potential (VEP), pattern electroretinography (pERG), and electroretinography (ERG), we can differentiate the possible lesion site in the visual pathway and be guided to the correct diagnosis.

Another symposium focused on "Pediatric Neuro-ophthalmology Common Disorders." Dr. Tzu Lun Huang, Far Eastern Memorial Hospital, New Taipei City, Taiwan, introduced the aetiology and clinical manifestations of congenital disc anomaly. Dr. Walter Jay, Loyola University, Maywood, Illinois, United States, discussed optic neuritis in paediatric patients. Most paediatric cases of optic neuritis resulted from an immune-mediated process and usually have bilateral involvement. The treatment strategies relied on the intravenous steroid pulse therapy. The visual prognosis is relative good. Dr. Michael Lee, University of Minnesota, Minneapolis and Saint Paul, Minnesota, United States, discussed papilloedema in paediatric patients. In children with papilloedema, magnetic resonance imaging (MRI) was indicated to rule out intracranial mass. Overall, idiopathic intracranial hypertension (IIH) remained a major cause of paediatric papilloedema. Dr. Patrick Yu-Wai-Man introduced the hereditary optic neuropathy, with emphasis on LHON and autosomal dominant optic atrophy (ADOA). Dr. Ko-Jo Lin, Wan-Fang Hospital, Taipei, Taiwan, discussed the paediatric tumour of anterior visual pathway. She introduced the relationship between embryogenesis and pathogenesis. The differential diagnosis on MRI was also presented. Dr. Y. Joyce Liao, Stanford University, Stanford, California, United States, discussed cortical blindness, also known as cortical visual impairment (CVI), in paediatric patients. The major risk factors for CVI are perinatal hypoxia, premature birth, and hydrocephalus. Treatment of CVI should be directed at the underlying neurologic disease. Dr. Michael Lee returned to the podium to discuss "Ocular Motor Nerve Palsy in Pediatric Patients," which often resulted from congenital or perinatal insults. Neuroimaging is always necessary.

At the end of the second day, the neuro-ophthalmology symposium focused on "Diagnosis and Management of Eye Movement Disorders." Dr. Y. Joyce Liao started from "The Timing of Imaging in Cranial Mononeuropathies." Neuroimaging was indicated when such "red flag" was presented: (1) age <50 years; (2) pupil-involving or pupil-sparing partial third nerve palsy; (3) cancer history; (4) not improved by 1 month; and (5) not resolved by 3 months. Dr. Hitoshi Ishikawa, Kitasato University, Kanagawa, Japan, discussed the sagging eye syndrome (SES). Dr. Joyce Liao returned to the podium to present "Management Options for Double Vision." Occlusion of one eye remains the easiest and most conservative treatment of binocular diplopia. Strabismus surgery is occasionally necessary. Dr. Rashmin Gandhi discussed "How to Workup Nystagmus." Dr. May-yung Yen, Taipei Veterans General Hospital, Taipei, Taiwan, shared her experienced of "Surgical and Nonsurgical Therapy for Nystagmus." Dr. Sophia Chung, Saint Louis University School of Medicine, St. Louis, Missouri, United States, presented a case of upbeat nystagmus with underlying Wernicke's encephalopathy. Dr. Navin Jayakumar, Darshan Eye Clinic, Chennai, India, presented a case of horizontal diplopia, which was first diagnosed as microvascular ischaemia-related abducens palsy. However, magnetic resonance venography revealed cerebral venous sinus thrombosis.

On the third day of the congress, the Neuro-ophthalmology Symposium featured the "Basic Examination and Investigation for Neuro-ophthalmology." Dr. Prem Subramanian, University of Colorado School of Medicine, Aurora, Colorado, United States, highlighted the basic concept of pupil examination. Searching for a relative afferent pupillary defect is always an important clue for unilateral or asymmetrical optic neuropathy. Dr. Satoshi Kashii, Aichi Shukutoku University, Aichi, Japan, discussed the essentials of automated perimetry from a neuro-ophthalmic perspective. Dr. Carmen Chen, Chinese University of Hong Kong, Hong Kong, China, discussed the application of OCT in neuro-ophthalmology. OCT can help to document the anatomical change in the anterior visual pathway. Sometimes, NFL loss can also be identified from OCT in a patient with retrochiasmal lesion, which

may result from retrograde degeneration. Dr. Hui-Chen Cheng, Taipei Veterans General Hospital, Taipei, Taiwan, introduced the clinical application of VEP, which may act as a screening test for lesions in visual pathway. Prof. Graham E. Holder discussed the application of pERG in neuro-ophthalmology. In pERG, P50 and N95 are representatives of macular function and ganglion cell function, respectively. Using pERG, we can differentiate maculopathy from optic neuropathy. In the end of this symposium, Dr. Sophia Chung introduced MRI in neuro-ophthalmology. Together with functional and anatomical studies, MRI is an essential tool in neuro-ophthalmology to delineate intraorbital and intracranial lesions.

Another symposium on the third day focused on “Systemic Disease and Neuro-ophthalmology.” Dr. Walter Jay introduced the “Diagnosis and Management of Giant Cell Arteritis (GCA)” and shared pearls of treatment in this acute vision-threatening disease. Dr. Prem Subramanian discussed the “Therapies in Thyroid Eye Disease,” focusing on orbital radiotherapy as well as steroid pulse therapy for acute inflammatory thyroid eye disease. Dr. Jane Chan, Barrow Neurological Institute, Phoenix, Arizona, United States,

introduced the update on paraneoplastic syndromes. Identifying serial antibodies, such as anti-recoverin antibodies, anti-enolase antibodies, and so on, is essential for diagnosing cancer-associated retinopathy. Dr. Dan Milea introduced “How Do I Manage Ocular Myasthenia?” and emphasised the need of immunosuppressive agents for patients with partial response to anti-cholinesterase agents. Dr. Satoshi Kashii presented a conclusive lecture for the immunoglobulin G₄ (IgG₄)-related disease, Mikulicz syndrome, with emphasis on treatments and unique orbital presentation as infraorbital nerve infiltration.

The Neuro-ophthalmology Symposium in the 31st Asia-Pacific Academy of Ophthalmology Congress brought together interested physicians from around the world in the common bond of a commitment to both scientific excellence and respectful, genial discourse. Thanks go to the 31st Asia-Pacific Academy of Ophthalmology committee for hosting the event and to all attendees for making the meeting such a valuable way to spend the last weekend in March 2016.

Declaration of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.