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Neuro-Ophthalmology at a glance

Dear Colleagues,

It is my great honor and privilege to guest edit the issue 3 of the *Taiwan Journal of Ophthalmology* published in 2022 on the theme of “Neuro-ophthalmology.”

In this issue, Huang provides a comprehensive review about neuromyelitis optica spectrum disorder (NMOSD) and its treatment. As impairment in NMOSD accumulates with each relapse, proper and timely management and maintenance therapy is important in saving visual and neurological function.^[1] Furthermore, in this review, new biologic agents are evaluated in detail.

As technology progresses, options for diagnosis and treatment improve. One of the most important improvements in ophthalmic imaging in the last decade is the optical coherence tomography (OCT) followed by OCT angiography (OCTA). OCTA is a novel imaging modality providing detailed visualization and depth-resolved information of ocular vascular structures without using intravenous contrast agent. This depth-resolved information has never been available before. It detects signal changes related to the motion of erythrocytes in the vessels through sequential OCT scans.^[2] There are some important advantages of OCTA over the traditional angiography techniques. It does not require administration of any contrast agent, and so, it is a noninvasive imaging modality. Data can be segmented, so retinal vasculature and choriocapillaris

can be visualized with depth resolution separately. Besides its advantages, OCTA has also some restrictions such as artifacts and its inability to assess vascular leakage. OCTA is being more widely used in neuro-ophthalmological diseases which show consistent peripapillary and macular capillary changes. Microvascular abnormalities of the optic nerve and peripapillary region can be evaluated in detail. In my opinion, by improvement in its technical capacity, OCTA is going to play a more important role in the diagnosis and follow-up of neuro-ophthalmic disorders in the near future. The review article written by Bilici and Duman evaluates the use of OCTA in this field.

Another review article in this issue is about the electrophysiological changes in subjects with migraine. Migraine patients have a hyperexcitable cortex which has been shown by functional magnetic resonance imaging studies.^[3] The article written by Bayraktar Bilen and Hamurcu shows that amplitudes of visual evoked potentials and rod amplitudes in electroretinography increase in subjects with migraine, which supports the hyperexcitability of the retina and cortex in migraine.

Although most articles focus on neuro-ophthalmology, this issue also contains articles in other ophthalmic fields. These are about surgical devices using small-aperture optics, intraocular lens (IOL) calculation formulas, and COVID-19. Surgical devices using small-aperture optics provide near and intermediate vision without disturbing distance vision. As aperture diameter decreases, depth of

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focus increases. The efficacy, safety, complications, and the current status of Kamra corneal inlay, IC-8 IOL, and XtraFocus device are discussed in the review by Ang *et al.*

The study by Kumar and Anuranjani evaluates the relation of ocular manifestations in subjects with COVID-19 to disease severity. COVID-19 was reported to be a pandemic by World Health Organization in March 2020. It is known that COVID-19 can affect both anterior and posterior segment of the eye and ocular structures.^[4,5] Neuro-ophthalmic signs and symptoms can be seen as well.^[6] McHarg *et al.*^[5] reported that subjects with ocular symptoms had a higher number of systemic symptoms compared to subjects without ocular symptoms, so it is important to know the ocular manifestations of COVID-19 and the relation of these manifestations to the severity of COVID-19. Vaccination against COVID-19 is important in preventing disease, serious symptoms, complications, and mortality. Like all vaccines, some people can experience mild–moderate side effects of COVID-19 vaccines, but serious side effects are extremely rare. Vision-threatening ocular adverse events can be seen as well.^[7] The case report by Nora *et al.* presents a case of aseptic bilateral cavernous sinus thrombosis following inactivated SARS-CoV-2 vaccination. There are other interesting and important case reports on neuro-ophthalmologic disorders being presented in this issue.

I hope that these carefully selected articles of this issue will fit your interest and provide you a satisfactory reading.

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