

## **1. A Review of Imaging Modalities in Thyroid-associated Orbitopathy**

*Important Article for General Ophthalmologists, Oculoplastic Surgeons and Radiologists*

North and Freitag have reviewed the role of orbital imaging in Thyroid-associated orbitopathy (TAO). They have discussed the applications of Computed tomography (CT), magnetic resonance imaging (MRI), ultrasonography (US) including colour Doppler imaging (CDI), and optical coherence tomography (OCT) in detail and concluded that orbital imaging plays an important role in the diagnosis and management of patients with TAO.

## **2. Advances in Anterior Segment OCT For the Design and Fit of Scleral Lenses**

*Important Article for General Ophthalmologists, Cornea Specialists and Optometrists*

Tom and Jacobs have discussed advances in Anterior Segment OCT for measuring and mapping the anterior scleral surface. A correlation has been found between the parameters of scleral lenses that have been diagnostically fit and parameters on AS-OCT. AS-OCT has resulted in successful treatment after failed attempts with diagnostic fitting. AS-OCT has also been investigated in assessing the dynamic vault and clinical performance of scleral lenses over time and the future appears promising.

## **3. Angiography of the Limbus and Cornea**

*Important Article for General Ophthalmologists as well as Cornea Specialists*

Wang and Chodosh have explored novel applications of fluorescein angiography (FA) and indocyanine green angiography (ICG) for the

anterior segment. The uses of anterior segment FA and ICG for treatment of corneal pathologies have been discussed. OCT Angiography has great potential for managing corneal neo-vascularization (CNV) associated with lamellar surgery. Further studies using OCTA are needed to determine a potential role in diagnosis and therapy.

#### **4. Developments in imaging of Corneal Biomechanics**

*Important Article for General Ophthalmologists, Cornea Specialists, Refractive Surgeons and Glaucoma Specialists*

Yuan and Pineda have summarized the major role of in vivo imaging developments in the field of corneal biomechanics, as well as reviewed the published data on their applications to disease. These include the ocular response analyzer (ORA), corneal visualization Scheimpflug technology (ST), Brillouin microscopy, and those in development. This is of particular clinical relevance in the diagnosis and management of primary and iatrogenic ectasias, refractive surgical planning, and glaucoma

#### **5. Imaging Retinal Ganglion Cell Death and Dysfunction in Glaucoma**

*Important Article for General Ophthalmologists as well as Glaucoma Specialists*

Liu and Margeta have discussed recent developments in the techniques of imaging retinal ganglion cell (RGC) death and dysfunction in vivo and the implications for the diagnosis and management of glaucoma. These techniques identify early RGC injury before irreversible death occurs and include the use of detection of apoptotic retinal cells (DARC) technology, molecular probe TcapQ, flavoprotein fluorescence (FAF), adaptive optics and functional imaging to image individual RGCs in glaucoma.

## **6. In Vivo Confocal Microscopy of Keratic Precipitates in Uveitis**

*Important Article for General Ophthalmologists and Uvea Specialists*

McKay and Jacobs have evaluated the role of in vivo confocal microscopy (IVCM) in providing a deeper understanding of Keratic Precipitates (KP) morphology and correlation with underlying disease. Imaging data from IVCM studies of KP in uveitis have shown patterns that seem to corroborate infectious versus non-infectious etiologies and other patterns that are characteristic of certain entities. Although not sufficient to establish a specific etiological entity, IVCM holds promise as more than a qualitative tool in the diagnosis and treatment of uveitis.

## **7. Teleophthalmology For Anterior Segment Disease**

*Important Article for General Ophthalmologists*

This review by Hu and Lorch is focussed on the use of telemedicine in anterior segment disease. Tele-ophthalmology has been deployed in a variety of clinical contexts and settings and holds excellent potential for expanding our ability to deliver specialty care to patients who would otherwise not have access to ophthalmologic services. Future directions involve improving portable imaging technology and data transmission, and more detailed studies of cost effectiveness and diagnostic accuracy.

## **8. Update on Current Aspects of Orbital Imaging: CT, MRI, and Ultrasonography**

*Important Article for General Ophthalmologists, Oculoplastic Surgeons and Radiologists*

Recent innovations in technology have led to improved diagnosis and management of orbital disorders. Cohen and Yoon discuss new developments in CT-automated volumetric analysis of the orbit, MR sequences to diagnose orbital tumours, and ultrasonographic evaluation

of orbital diseases and therapies. New developments in these techniques are likely to occur with future technological advancements.