Terrace Eye Centre

newsletter

SEPTEMBER **2019**

DR ALBERT **ARALAR**
DR PETER **BECKINGSALE**
DR MARK **DONALDSON**
DR GUY **D'MELLOW**
DR MICHAEL **HOGDEN**
DR SONIA AHN **YUEN**
DR WILLIAM **GLASSON**
DR SUNIL **WARRIER**
PROF TIM **SULLIVAN**
DR SING-PEY **CHOW**

PHONE 07 3831 0101 **www.terraceeyecentre.com.au**

Terrace Eye Centre welcomes Dr Matthew Cranstoun

Dr Matthew Cranstoun (MBBS BSc GradDipOphthSci FRANZCO) **is a second-generation ophthalmologist with subspecialist training in Oculoplastics, Orbital and Lacrimal Disease.**

Upon graduating from Medicine at the University of Queensland, Dr Cranstoun undertook ophthalmology training in his native Queensland and completed his advanced examinations in 2017. At the completion of his general Ophthalmology training, Dr Cranstoun did further advanced training in cataract and anterior segment surgery, glaucoma, ocular oncology and oculoplastics as the senior registrar at the Mater Hospital, South Brisbane.

In 2018–2019, Dr Cranstoun was awarded a sought after fellowship with the Terrace Eye Centre's Professor Timothy Sullivan in Oculoplastics, Lacrimal and Orbital Disease. This world-renowned fellowship included clinical positions at the Royal Brisbane and Women's Hospital and Queensland Children's Hospital and involved management of complex adult and paediatric conditions under the guidance of Professor Sullivan, Dr Cranstoun's friend and mentor.

Dr Cranstoun is actively involved in research and evidenced based care and together with Professor Sullivan, was awarded the Dermot Roden prize for the best Oculoplastics paper presented at the 2018 annual RANZCO scientific meeting. His passion for evidenced based care is demonstrated in his ongoing commitment to research.

Dr Cranstoun is a dedicated and active member of the Royal Australian and New Zealand College of Ophthalmologists and with continued public commitments at the Royal Brisbane and Women's Hospital as a visiting specialist where he is involved in the teaching of the next generation of Ophthalmologists. He is also an associate lecturer with the University of Queensland medical school.

Dr Cranstoun's interests include:

- Eyelid disease – malposition, tumours and lesions, ptosis and blepharoplasty (including paediatric ptosis)
- Lacrimal disease – management of the watery eye in adults and children, open and endoscopic DCR, lacrimal bypass surgery
- Orbital Disease – thyroid eye disease, orbital inflammation and tumours, ocular adnexal lymphoma
- Anterior segment oncology

Availability:

Dr Cranstoun realises that vision and eye health are an important priority and will endeavour to see your patient within 1–2 weeks of a new referral.
Dr Cranstoun operates at the Queensland Eye Hospital, Chermside Day Hospital, Peninsula Private Hospital and St Andrew's Private Hospital, Spring Hill.

IN THIS ISSUE

The 'Pachychoroid Disease Spectrum' in 5 minutes

Dr Michael Hogden BSc MBBS (Hons I) FRANZCO

What is the 'Pachychoroid Disease Spectrum'?

The 'Pachychoroid Disease Spectrum' encompasses a group of macular diseases characterized by a thickened choroid associated with dilated highly permeable outer choroidal vessels (called 'pachyvessels') and retinal pigment epithelial changes. The term 'pachychoroid' is derived from the Greek work pachy meaning 'thick'. The collective term was first used in 2013 although some of the clinical entities themselves such as central serous chorioretinopathy (CSCR) have long been recognised.

What are the clinical features of the four Pachychoroid diseases?

(i) **Pachychoroid pigment epitheliopathy (PPE)** is the mildest form of the Pachychoroid Disease Spectrum It is characterized by non-specific macular retinal pigment epithelial (RPE) changes and focal areas of 'speckled' hyper- and hypo-autofluorescence on fundus autofluorescence imaging. Macular OCT shows a characteristic thickened choroid with dilated pachyvessels running beneath the RPE-Bruch membrane complex (*Figure 1*). There is no associated subretinal fluid.

(ii) **Central serous chorioretinopathy (CSCR)** typically presents in working age adults (30 to 50 years old) with men being much more commonly affected. Patients usually present with blurred or distorted vision and objects can appear smaller than they are (micropsia). CSCR can be acute and resolve in less than 6 months or become chronic. CSCR has been associated with elevated levels of circulating corticosteroids, which may explain its predisposition in people with Type A personalities and those suffering anxiety and stress.

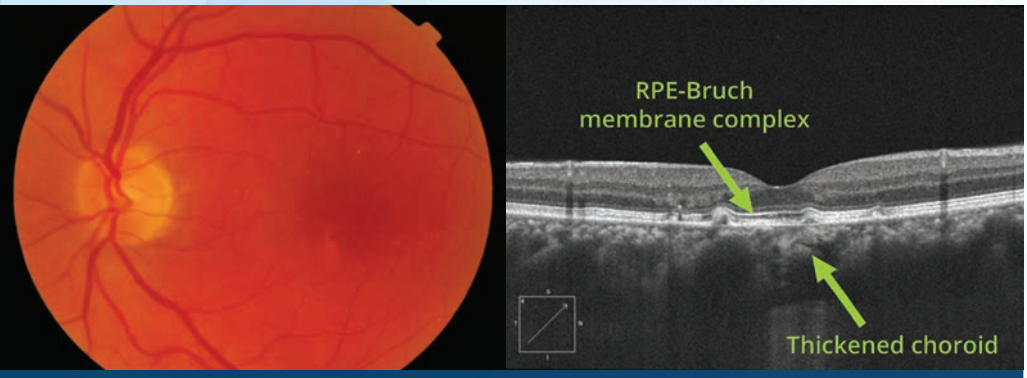


Figure 1. Left eye colour fundus photography of pachychoroid pigment epitheliopathy (PPE). Focal RPE changes are seen at macula. Macular OCT shows a thickened choroid.

CSCR is characterised by a serous retinal detachment at the macula. This can also often be associated with a pigment epithelial detachment (PED) as seen on macular OCT imaging (*see Figure 2*). Dye-based angiography such as fluorescein angiography and indocyanine green (ICG)

CASA certified

Terrace Eye Centre has long participated in the ophthalmological clearance for military aviation.

We are now able to also provide the clearance for the private sector, as Dr Michael Hogden and Dr Sonia Ahn Yuen have become the Designated Aviation Ophthalmologists (DAO) certified by the Civil Aviation Safety Authority (CASA).

Ophthalmological clearance for the purpose of aviation follows a strict protocol in order to ensure safety for both the military and the public, and we will continue to assist in this process by providing a complete and clinically responsible assessment and care. Please ensure that any CASA related ophthalmological assessment need is clearly indicated in the referral (or by the patient seeking an assessment without the referral) in order that the assessment provided includes all the parameters stipulated by CASA.

Terrace Eye Centre looks forward to being a part of the global CASA community and aviation medicine in general.

angiography are useful in identifying focal sites of RPE leakage in CSCR (*see Figure 3*). This may allow targeted treatment with argon laser or safety-enhanced photodynamic therapy (PDT). They can also allow CSCR to be distinguished from other pachychoroid entities such as pachychoroid neovasculopathy and polypolyoid choroidal vasculopathy.

(iii) **Pachychoroid neovasculopathy (PNV)** most frequently presents as a Type 1 (sub-RPE) choroidal neovascularization and can be difficult to distinguish from age-related macular degeneration (ARMD) and CSCR. However, unlike ARMD, PNV often occurs in a younger age group (50-60 years) with the relative absence of drusen at the macula and the choroid is thickened with pachyvessels.

(iv) **Polypoidal choroidal vasculopathy (PCV)** is also a form of Type 1 choroidal neovascularization with a pachychoroid phenotype. However, it may also show extensive choroidal branching vascular networks and inner choroidal polyp-like changes that are best identified with ICG angiography. PCV is typically seen in patients of Asian and African backgrounds but it may also occur in Caucasian patients. Untreated, PCV may cause permanent macular damage and vision loss through large sub-RPE and subretinal haemorrhages and fluid exudation.

How are the Pachychoroid diseases treated?

Treatment differs depending on the specific Pachychoroid disease involved.

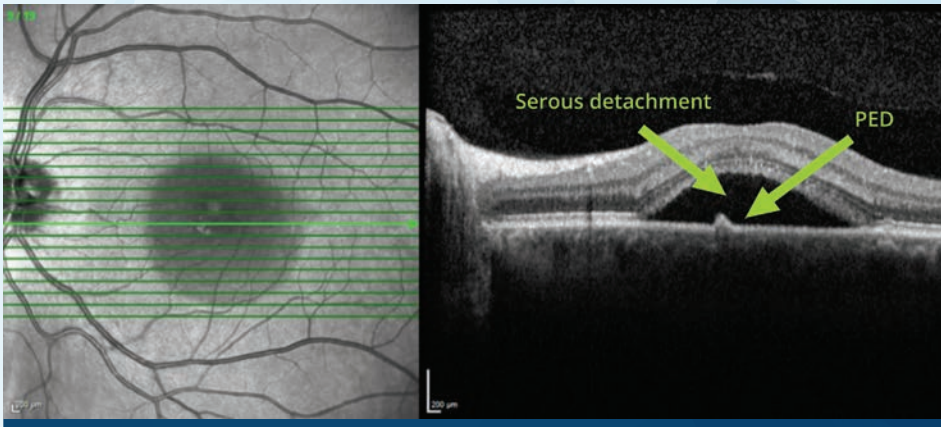


Figure 2. Left eye macula OCT showing serous retinal detachment in CSCR with a small PED within the area of serous detachment.

For example, acute CSCR can often be simply observed; spontaneous recovery of vision is expected in many cases. However, other conditions such as PCV and PNV generally necessitate prompt treatment to prevent irreversible central visual loss due to haemorrhage and/or fluid leakage into the macular region. Treatment for these conditions may involve intravitreal injections of anti-vascular endothelial growth factor (VEGF) agents and/or photodynamic therapy (PDT).

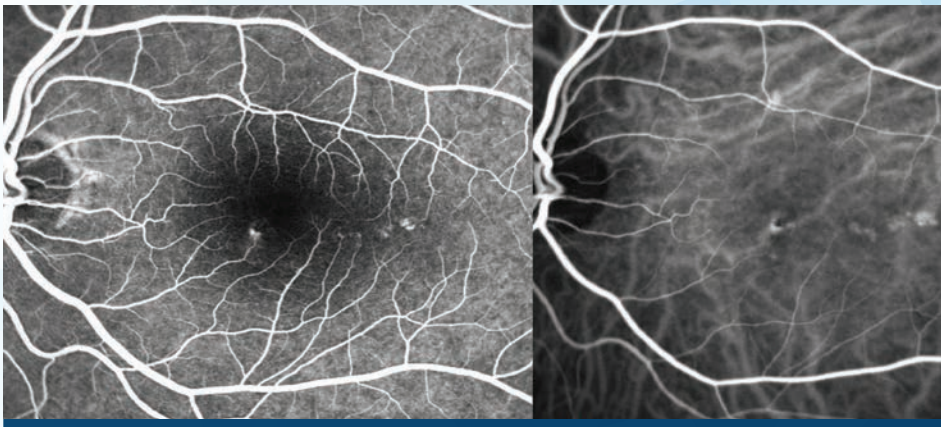


Figure 3. Left eye fluorescein (right) and ICG (left) angiograms showing multifocal hyperfluorescent lesions corresponding to sites of RPE leakage in CSCR.

Queensland Ocular Oncology update

Dr Sunil Warrier MB, MS, M.MED, FRANZCO

Terrace Eye Centre is pleased to announce that oncology patients across Queensland will soon have access to Ruthenium as an isotope for their brachytherapy when treating melanoma. This isotope is far more gentle on the eye with excellent treatment coverage for melanoma, with sparing of the adjacent tissue and maximal preservation of vision. This treatment should be available through Queensland Ocular Oncology Service from the new year.

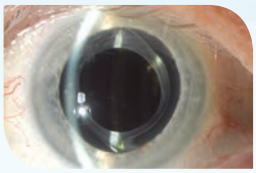
With the addition of Dr Lindsay McGrath BAppSc(Optom) MPhil MBBS FRANZCO joining Queensland Ocular Oncology Service we are now able to offer clinics weekly.

Questions & Answers

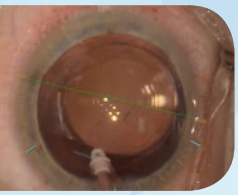
Dr Peter Beckingsale MB, BS, FRANZCO

What are some of the different lenses that are used in cataract surgery and how to they affect patient outcomes?

Choosing the most appropriate intraocular lens (IOL) type is one of the key decisions in cataract surgery planning. The most commonly implanted IOLs are still monofocals with a single plane of focus. Most modern IOLs are aspheric, which take into account the natural asphericity of the human cornea with correction for significant astigmatism using toric IOLs.



The focal point of an implanted monofocal IOL (*right*) can be set to wherever desired by the patient. In most cases this would be both eyes set for clearest distance vision, which means reading glasses will likely be required for near work. In rare cases a patient may choose both eyes to be set for near aiming for excellent unaided close vision but with distance glasses post surgery. Monovision would be an alternative option, with one eye set to see clearly in the distance and the fellow eye set for near; after the surgery, the brain will typically add the two eyes together to give clear vision over all distances without glasses; however, as not everyone adapts well to this strategy, contact lens testing before the surgery is highly recommended.



Increasingly popular are the new generation multifocal IOLs (*left*) with either refractive or more commonly diffractive elements in the lens to give multiple focal points. This allows clear near and distance vision without glasses with normal depth perception and peripheral vision. The most common versions used now are trifocal IOLs, which provide good distance, near and intermediate vision. The main drawback with these multifocal IOLs is seeing halos around lights at night, which usually fade over time. The most recent IOL designs are Extended Depth of Focus (EDOF) IOLs. These are similar to diffractive multifocal IOLs but have less night vision issues; however, the near point is further away. These EDOF IOLs can be an excellent "lifestyle" choice with minimal night vision problems, good computer vision and occasional reading glasses use for very near tasks or reading in dim light.

Do corneal transplants require immunosuppressive drugs?

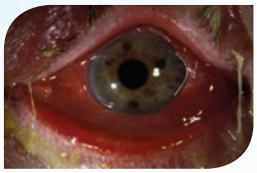
Like other allogeneic grafts corneal transplants carry a risk of rejection. For full thickness transplants, this risk is approximately 20% with relatively less risk for partial thickness grafts. The large majority of corneal transplants are managed with topical immunosuppressive therapy, usually steroids. In some cases, topical steroids may be replaced by topical cyclosporin, particularly to avoid steroid induced cataract formation in a young patient or steroid induced intraocular pressure rise. Early post-operative immunosuppression is usually supplemented with injection of a depot steroid into the subconjunctival space or orbital floor. Topical steroid use is typically tapered off very slowly; in many cases long term once daily topical steroid use is recommended.

Acute transplant rejection is usually treated with intensive (hourly) topical steroids. More severe cases may be managed with local depot steroid injection or short-term high dose oral or intravenous steroids.

In rare cases with very high risk of transplant rejection (such as in eyes with previous history of graft rejection or failure), treatment with systemic immunosuppression such as oral cyclosporin, methotrexate or azathioprine may be considered. Consideration must be given as to whether the potentially serious systemic risks and side effects of these strong drugs outweighs the benefits, especially when the other eye is healthy.

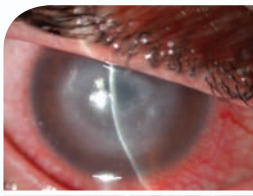
What are key differences between conjunctivitis and keratitis in terms of symptoms? Is there any difference in terms of treatment plans?

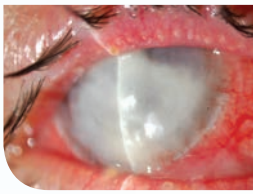
Conjunctivitis is most commonly viral, typically presenting with the eyelids stuck together in the mornings,



mucopurulent discharge and diffuse pink injection of the conjunctiva (*left*) and palpable pre-auricular lymph nodes, often associated with an upper respiratory infection or contact with someone with similar concerns. Pain is usually minimal and vision normal. Eye swab is often positive for Adenovirus. Treatment is usually conservative and symptomatic using artificial tear drops and cool compresses. Symptoms typically resolve in about seven days. More purulent discharge may indicate a bacterial conjunctivitis, which may be treated with an antibiotic such as chloramphenicol, although bacterial conjunctivitis is usually self-limiting.

Microbial keratitis (corneal inflammation) is a much more serious condition. There is usually pain and reduction in vision. The cornea may appear cloudy or have a focal white spot. The white of the eye often shows a red ring around the cornea (ciliary injection). Fluorescein staining is very helpful and usually highlights an epithelial defect. A horizontal white fluid level within the anterior chamber of the eye is called "hypopyon", which indicates a serious infection with severe intraocular inflammation.





Keratitis may be viral, bacterial, fungal or protozoal. Herpes simplex virus is the most common (*right*) viral corneal infection and is characterised by a dendritic corneal epithelial defect seen with fluorescein staining (*below*). Treatment is with topical or oral anti-virals. Herpes zoster may also involve the cornea and is associated with dermatomal skin rash; commencement of oral antiviral would be a strong consideration even after the initial 72-hour window and a prompt ophthalmology referral would be important.

Bacterial, fungal and protozoal keratitis are most commonly associated with contact lens wear as well as trauma, surgery and swimming in contaminated water. Spontaneous bacterial or fungal keratitis is rare. Scraping the cornea for microbiological examination is often indicated for diagnosis confirmation as well as for appropriate antibiotic selection. Treatment is with intensive topical antibiotics such as a fluoroquinolone or compounded fortified cephalosporin, vancomycin, aminoglycoside or anti-fungals. As progression may be very rapid, resulting in poor vision, endophthalmitis

and even loss of the eye, urgent ophthalmology referral would be important particularly as in some severe cases, surgery intervention, such as emergency corneal transplantation, may be required.