

# TEInsight

DELIVERING THE FINEST QUALITY EYECARE

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A publication of



THE EYE INSTITUTE  
NATIONAL HEALTHCARE GROUP

INSIDE

IN THE SPOTLIGHT **Cornea and Uveitis**

**3**  
Dry Eyes  
- Latest Trends  
In Therapy



**6**  
AIDS  
- Related  
Ocular  
Infections



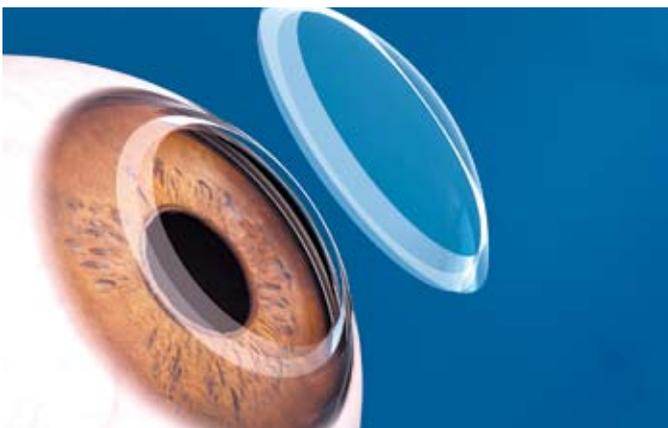
**7**  
How Not  
To Miss  
Uveitis



**4** There Are 2 Types Of  
Contact Lens Users  
...which type are you?  
**POSTER**

**7** Optometrists' Column  
**8** Quiz

# Femtosecond Laser-Assisted Corneal Transplantation



Combining advanced LASIK technology with current transplantation concepts has taken cornea grafting to the next plane.

One hundred years after the first successful penetrating keratoplasty (PK) by Zirm in 1905, corneal transplantation has become the most commonly performed transplant in the world, with over 200 procedures done every year in Singapore.

**Concept Of Component Keratoplasty**

Modern corneal transplantation aims to reduce surgical trauma and the risk of immunologic rejection by replacing only the damaged cells and layers. This is called "component keratoplasty". The advantages of component over full-thickness corneal graft include reduced rates of allograft rejection, endophthalmitis, expulsive hemorrhage, postoperative astigmatism, glaucoma and cataract. Conversely, patients benefit from better wound strength, faster visual rehabilitation, and reduced need for immunosuppression. The idea is not new. Partial thickness or lamellar keratoplasty (LK) was first performed in the late 19th century, but the technical difficulties and inconsistencies of manual dissection limited its usage to largely structural rather than visual indications.

However, quantum leaps in Lasik technology over the past 2 decades

have led to a serendipitous spillover effect in the transplant arena as well. Improvements in microkeratomes enable more precise lamellar dissection of the cornea. Today, we have free-hand, handle-mounted and suction-assisted trephines. Artificial anterior chambers enable more controlled trephination and lamellar dissection of the donor button. Slit-scan optical pachymetry and anterior segment optical coherence tomography permit greater precision in preoperative planning of lamellar procedures. All this has led to a resurgence in component keratoplasty, addressing lesions like corneal scars ectasias and bullous keratopathy.

The various types of component keratoplasty are:

1. Keratolimbusal autograft or allograft
2. Anterior Lamellar Keratoplasty (ALK)
  - a. Deep Anterior Lamellar Keratoplasty (DALK)
  - b. Automated Lamellar Therapeutic Keratoplasty
3. Endothelial Lamellar Keratoplasty (ELK)
  - a. Deep Lamellar Endothelial Keratoplasty
  - b. Descemet Stripping Endothelial Keratoplasty
  - c. Descemet Stripping Automated Endothelial Keratoplasty
4. Penetrating Keratoplasty (PK)

The schematic in Figure 1 illustrates the various levels of corneal involvement associated with each technique.

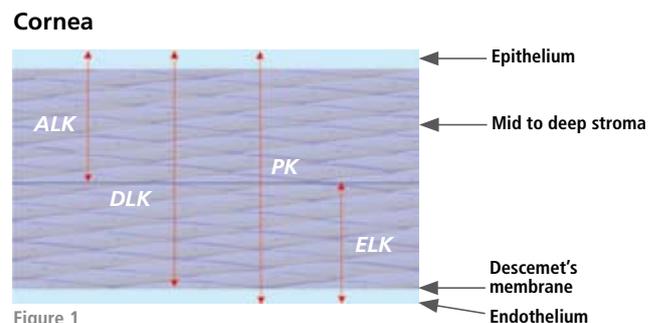


Figure 1

Continued next page

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## Editor's Message

Dear Readers,  
I hope this issue finds you well.

LASIK technology has given birth to a new era in corneal transplantation, and our cover story documents how this evolved. These are still early days yet, but there is already hope that all corneal grafts will be almost bladelessly performed in the future.

The sub-specialty of uveitis is also in our sights this time, and we have paired our trademark back-to-basics "How Not To Miss..." installment with a more detailed discourse on how HIV can affect the eye.

We have also included a rather nasty centrefold of contact lens-related corneal ulcers to grace your waiting room walls. We hope that it will intimidate enough people into practising proper lens hygiene habits from hereon.

We won't be meeting again till next year, when Oculo-Plastics and Paediatric Ophthalmology are slated to kick off the 2008 cycle of TEInsight, so I will take this opportunity to wish all of you a well-in-advance Merry Christmas and Happy New Year, on behalf of our Director and the entire team at TEI.

I also hope, as always, that you find this issue a good read.

**Dr Wong Hon Tym**

### TEInsight Editorial Team

Dr Wong Hon Tym (Chief Editor)

Ms Tan Mui Leng (Secretariat)

A/Prof Goh Lee Gan (Advisor)

We would appreciate your frank feedback on any part of this newsletter, be it on the format or content. Please email your comments to [tei@nhg.com.sg](mailto:tei@nhg.com.sg) or mail to Ms Tan Mui Leng, The Eye Institute @ Tan Tock Seng Hospital, 11 Jalan Tan Tock Seng, Singapore 308433. Please indicate if you would grant us the permission to publish your letter. If you would like to receive our 4 monthly-newsletter, please send an email with your name to [tei@nhg.com.sg](mailto:tei@nhg.com.sg) with the subject heading 'TEInsight Subscribe'.

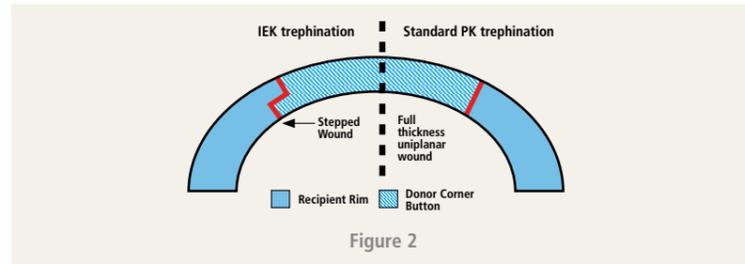
Continued from page 1

Corneal Transplantation

### Creating A Better Graft - Host Fit: IEK

In traditional PK, a donor cornea button with vertical edges is sutured onto a recipient rim with vertical edges to obtain a uniplanar graft-host junction. In 2003, Busin proposed a stepped wound configuration using manual instruments. This allows a larger area of graft-host contact and facilitates better wound sealing, stronger wound healing, the use of fewer sutures, earlier suture removal, reduced astigmatism and faster visual recovery. In addition, the "top-hat" configuration of the donor cornea has a larger posterior diameter, thereby resulting in a greater "payload" of transplanted endothelial cells.

Manual dissection to shape the tissue was extremely challenging to say the least.



However, the introduction of high-precision, programmable femtosecond lasers in 2002 for the creation of corneal flap in LASIK has turned the tide. Currently, the IntraLase Enabled Keratoplasty (IEK) module (Intralase Corp, Irvine, CA) greatly simplifies and improves the resection of corneal stroma for LK and the preparation of shaped corneal tissue for PK.



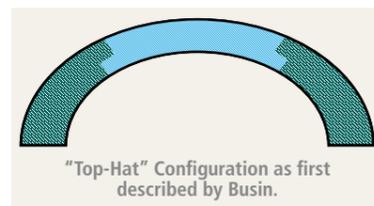
The femtosecond laser has an infrared wavelength of 1053 m with each pulse lasting approximately 10-15 seconds. Contiguous pulses are focused at a precise depth within the cornea which vaporizes tissue by photodisruption, producing plasma cavitation, and gas (CO2 and H2O) bubbles, which coalesce to form a cleavage plane. The computer controlled laser is capable of resecting tissue at various depths, angles and patterns, leaving surrounding tissues undamaged. The penetration of the femtosecond laser is less affected by corneal haze, making it very useful in treating edematous or opacified corneas.

Most crucially, the IEK software enables the femtosecond laser to perform three cuts to form the stepped or "top-hat" configuration during corneal grafting. (Figure 2). Full thickness uniplanar cuts, similar to standard PK, can of course be programmed as well.

IEK can thus potentially create a limitless variety of shapes for the donor button and recipient. Surgeons can choose the appropriate configuration for the corneal graft depending on the type of disease or opacity present.

To date, IEK had been used for:

1. PK, ALK, ELK and DALK
2. Flap creation for corneal inlays
3. Tunnel creation for intrastromal corneal rings
4. Astigmatic keratotomy



Possible contraindications for IEK include previous radial keratotomy, extreme corneal thinning, impending or established perforations, and dense opacities.

One hurdle to the adoption of femtosecond laser keratoplasty is its high cost. In addition, most of these machines are located in refractive surgery suites, in which the setup for regional or general anesthesia may not be available.

In summary, the precision and versatility of femtosecond laser for corneal resection has greatly facilitated the transition component keratoplasty and shows great promise in becoming an indispensable surgical tool for the future. Patients at TEI@ TTSH can look forward to this technology before the close of 2007.

By A/Prof Heng Wee Jin, TEI, TTSH

## CORNEA

# Dry Eyes - Latest Trends In Therapy

Dry Eye Syndrome is a very common clinical problem. It occurs when one does not produce the right quantity or quality of tears to keep the eyes comfortable.

### What causes Dry Eye Syndrome?

The most common cause of dry eye is reduced tear production due to aging. Both men and women are affected, the latter being affected especially after menopause.

Long term usage of contact lenses also causes dry eye, as many lenses are "hydrophilic" i.e. they attract fluids and render the ocular surface drier.

Spending long hours staring at computer terminals, or being chronically exposed to air-conditioning at offices and homes can also worsen dry eye. Patients with underlying autoimmune disease may also be bothered by dry eyes.



### What are the symptoms of Dry Eye?

Your Patient may complain of:

- Burning or stinging eyes
- Redness
- Scratchiness and feeling of "something in the eye"

- Excessive tearing (paradoxically)
- Contact lens intolerance
- Intermittent visual blurring relieved by blinking.
- "Tired Eyes", after only a short period of reading

### How is Dry Eye diagnosed?



Fluorescein Dye Stain

Dry Eye can be diagnosed based on patient's symptoms and examination of the eyes. **Fluorescein** staining helps to show certain patterns of dryness on the surface of the eyes. **Schirmer's test** uses filter-paper strips placed behind the lower eyelids to measure tear production. More than 10mm of moisture on the paper after 5 minutes is considered normal.

### How is Dry Eye treated?

#### • Adding tears

The first line of treatment of Dry Eye is the use of ocular lubricants in eye drops. They can be used as frequently as needed. Preservative-free preparations are available for patients who are sensitive to preservatives or who wear contact lenses.

For those with more severe Dry Eye, ointments can be used. However, these are usually applied at bedtime, as they cause

transient blurring of vision.

#### • Conserving tears

The lacrimal passages can be closed temporarily or permanently with plugs, which are easily inserted in the clinic setting. This helps to conserve the patient's own tears by facilitating prolonged retention of tears and lubricants in the eye. However, these plugs are reserved for more recalcitrant cases.

#### • New methods

Inflammation is now recognised as a significant player in the pathogenesis of Dry Eye. Thus topical steroids are now used to treat more severe cases of Dry Eye that do not respond to ocular lubricants. Close monitoring is important to look out for complications of steroid use, such as raised intraocular pressure.

Topical Cyclosporin A, an immunomodulating agent, is also found to be effective in treatment of Dry Eye. Many patients have increased tear production after using this medication for some months.

**Natural products** such as omega-3 fatty acids and flaxseed oil are also found to be useful to alleviate Dry Eye symptoms.

In summary, Dry Eye is a common eye condition with a myriad of symptoms. Most patients respond to ocular lubricants. However, more severe cases will require treatment with newer modalities.

By Dr James Pan, TEI@ TTSH

Images from Allergan Singapore Pte Ltd.

## SPOTLIGHT ON

### TEI's Cornea Team



A/Prof Heng Wee Jin



Dr Fam Han Bor



Dr James Pan



Dr Voon Li Wern



Dr Lee Sao Bing



Dr Wang Jenn Chyuan

A/Prof Heng Wee Jin completed a 15 month fellowship training at Will's Eye Institute, USA. He currently heads 4 portfolios: TEI's Cornea Service, TEI's Training and Education as well as TEI @ TTSH's Laski Centre and Cornea Donation Program. A/Prof Heng is a highly respected surgeon and has performed thousands of cataract and refractive surgeries and has been involved in many research projects in this field. He was also awarded the Asia Pacific Association for Cataract Refractive Surgery Educator Award for Cataract surgery. He has been an instructor in LASIK and microsurgical courses and has trained many international and regional fellows in cornea and refractive surgery.

Dr Fam completed a 15 month fellowship in Cornea & Refractive Surgery at the University of British Columbia, Vancouver, Canada. He is currently Head of Cataract & Implant Services at TEI @ TTSH. Also, a senior consultant in Refractive Surgery at TEI, Dr Fam is actively involved in the teaching of refractive and cataract surgery in the region, with a particular interest in corneal topography, visual optics and wavefront sciences. He was also the invited member of the International Intraocular Lens (IOL) Power Club.

Dr James Pan is a Consultant at TEI @ TTSH and a Visiting Consultant, TEI @ AH. He is fellowship trained in Cornea, External Eye Disease and Refractive Surgery (LASIK) from Lions Eye Institute, Royal Perth Hospital and Fremantle Hospital, Australia. On top of performing human corneal transplant, Dr Pan is also accredited to transplants AlphaCor Artificial Cornea.

Dr Voon is a part-time Consultant of the Cornea & Refractive Surgery Service, at TEI @ TTSH. She was fellowship-trained in Oxford Hospital @ the Radcliffe Eye Infirmary, Oxford, UK in the subspecialty fields of cornea, contact lenses and refractive surgery, which includes LASIK, phakic IOL, intraocular lens implants, dry eyes and corneal transplants. Dr Voon is actively involved in training and education and has conducted numerous talks in the above topics.

Dr Lee was awarded the National Medical Research Council (NMRC) Research Fellowship to pursue eye research at the prestigious Bascom Palmer Eye Institute in USA where he performed laboratory-based and clinical research under the direction of world-renowned Professor Scheffer Tseng, an expert in ocular surface reconstruction and stem cells of the eye. He has also won four Young Investigator Awards.

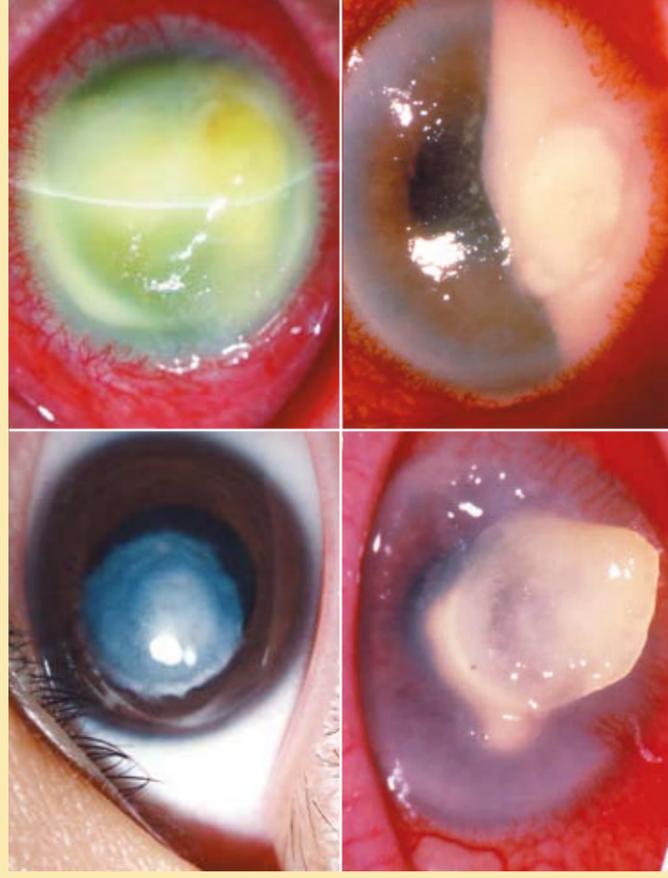
Dr Wang Jenn Chyuan is a Consultant Cornea, Cataract and Refractive Surgeon with National University Hospital. He is fellowship trained in Cornea, Cataract, Refractive in TEI followed by a further fellowship in the prestigious Moorfields Eye Hospital. He specialises in cutting edge Deep Anterior Lamellar and Descemet Stripping Automated Endothelial Keratoplasty and performs advanced refractive, cataract and anterior segment procedures. He has particular interest in managing difficult refractive errors and presbyopia after anterior segment surgery and post-Lasik cataract surgery.

# THERE ARE 2 TYPES OF CONTACT LENS USERS ... which type are you?



those that see well and look good...

These users • clean, rinse and disinfect their lenses as recommended after every use • wash their hands before handling their lenses • store their lens care products away from direct sunlight • use fresh storage solution each time to store their lenses • remove their lenses if they feel any discomfort and consult their eye care practitioner as soon as possible



...and those that may never see again.

These users • wear their contact lenses to sleep • keep their lenses on when swimming or relaxing in the jacuzzi • use tap water or even saliva to moisten their lenses • use tap water or saline to store their lenses • never clean their storage cases • do not mind re-using their contact lens solutions

Contact lenses, when used safely and appropriately, have a positive impact on the lifestyles of many people. However, poor contact lens user hygiene can lead to devastating eye infections, called "corneal ulcers". The worst cases admitted to the hospitals may end up with permanent blindness, despite the best efforts of the best eye specialists. So, please wear your contact lenses with care.

# AIDS Related Ocular Infections

It is reported that 75% of AIDS patients will develop ocular problems. The anterior and/or posterior segments can be affected and involvement correlates with a progressive reduction in CD4 T-cell counts. The use of HAART (highly active anti-retroviral therapy) has reduced the incidence of visually-threatening opportunistic infections (OI). However, immune recovery also brings with it a plethora of unique ocular complications. We look at some sight threatening infections and their latest management trends.

## Cytomegalovirus (CMV) Retinitis

Cytomegalovirus (CMV) retinitis, the most common OI in AIDS, accounts for up to 85% of CMV disease and 15-40% of patients with advanced HIV disease. Commonly bilateral, it usually occurs when CD4 count falls <50 cells/ $\mu$ L.

CMV retinitis classically appears as yellow-white granular dots (not unlike cotton-wool spots) that gradually coalesce to form large areas of retinal necrosis accompanied by retinal haemorrhage ("cheese & pizza" appearance) (Fig 1). Without specific treatment, CMV retinitis lesions often result in blindness. Other findings include extensive vasculitis and optic neuritis. Vitritis is uncommon in AIDS patients but if present, may indicate immune reconstitutive uveitis (IRU) in patients on HAART. Retinal detachment occurs in 50% of patients 1 year after diagnosis of CMV retinitis without immune recovery.

Specific anti-CMV treatment includes ganciclovir/valganciclovir and foscarnet. Valganciclovir possesses excellent oral bioavailability and virostatic activity. However, any discontinuation will lead to 100% relapse rate within 4 weeks. Ganciclovir implants are useful for patients who are unable to tolerate the systemic toxicity of the drug. However, these implants and medications are prohibitively expensive.

Since 1998, TEI@ TTSH has utilised an intermediate dosing regimen of intravitreal ganciclovir for CMV retinitis. It has been shown to be just as efficacious as intravenous (IV) route and achieved a higher and more prolonged local effective therapeutic concentration. We achieved a stable response in 80% and a time-to-progression (608 days) that is twice that of the longest previously reported series. Financially, the annual expense for intravitreal therapy (\$\$1,600) is only about 7.5% that of sustained-release implants and 5.4% that of intravenous therapy.

## Toxoplasma Retinochoroiditis

Caused by *Toxoplasma gondii*, this is commonly seen as a unilateral posterior segment inflammation, characterised by fluffy white-coloured retinochoroiditis adjacent to a previous toxoplasma scar and accompanied by vitritis. However, in the AIDS patient, this may present as severe bilateral disease with minimal vitritis (Fig 2). This difference has been linked to depletion and dysfunction of helper T-cells. Visual loss occurs in 10% of cases from macular or optic nerve involvement. In advanced HIV disease, toxoplasma encephalitis occurs in 1 to 5% of patients. As such, patients with AIDS and toxoplasma retinochoroiditis may warrant a CT imaging of the head for characteristic ring lesions.

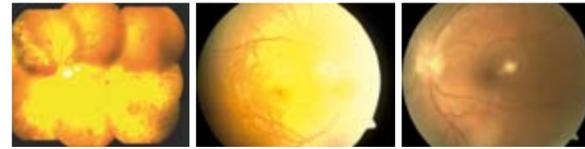


Fig 1

Fig 2

Fig 3

The diagnosis is often clinical although a negative serum toxoplasma IgG antibody is likely to exclude toxoplasmosis. Nowadays, intraocular fluids (aqueous & vitreous) can be obtained for polymerase chain reaction (PCR).

Treatment is warranted in any AIDS patient with toxoplasma retinochoroiditis, regardless of the visual acuity, severity of vitritis or proximity to the macula. Gold-standard treatment includes pyrimethamine and sulfadiazine or clindamycin. This combination is also recommended for patients on maintenance treatment, especially prior to immune reconstitution.

## Cryptococcal choroiditis

This is caused by *Cryptococcus neoformans*, a yeast that proliferates in conditions of impaired cell-mediated immunity. This OI now represents a major life and sight-threatening complication. Lesions in the eye are typically secondary to cryptococcal meningitis, giving rise to 'champagne cork' papilloedema, optic neuritis and chorioretinitis. (Fig 3)

Prognosis is poor if the optic nerve has been involved or if endophthalmitis has occurred. Treatment consists of intravenous amphotericin and fluconazole.

## Other infections

Other lesions that typically cause choroiditis in AIDS patients include cytitis, miliary tuberculosis and syphilis. Retinitis is commonly caused by the herpes family (acute retinal necrosis, progressive outer retinal necrosis).

## Conclusion

Ocular OIs occurring in AIDS patients are often aggressive, atypical and sight-threatening. Unlike immunocompetent individuals, the lack of visual symptoms in the early stages of the disease may lead to a tragic delay in presentation. As such, patients with systemic OIs and low CD4 counts should undergo routine ophthalmological screening, regardless of visual symptoms. Early and aggressive treatment is the key.

TEI @ TTSH runs twice weekly (Monday and Friday) clinics at the Communicable Disease Centre (CDC). Led by the Uveitis, Ocular Immunology and Inflammation Service, it provides in- and out-patient care of patients with HIV-associated ophthalmic complications, including intravitreal therapy for CMV retinitis.

By Dr Stephen Teoh, TEI@ TTSH

## SPOTLIGHT ON

### TEI's Uveitis Team



**Dr Lim Wee Kiak**  
Trained in the world renowned National Eye Institute, USA in 2003, Dr Lim Wee Kiak newly heads TEI's Ocular Inflammation, Immunology and Uveitis Service. He is currently a world leading expert in the field and has authored 26

scientific peer-reviewed publications and 9 book chapters. He is also a member of the International Uveitis Study Group (IUSG), International Ocular Inflammation Society (IOIS) and American Uveitis Society (AUS).



**Dr Stephen Teoh**  
Dr Stephen Teoh completed his HMDP Fellowship at the Bristol Eye Hospital, UK, under the mentorship of Professor Andrew Dick in 2006. He undertook training in surgical vitreoretina, uveitis, ocular immunology and

inflammation. This was followed by a clinical observership in HIV-related ocular inflammation at the Wilmer Eye Institute, Johns Hopkins Hospital, USA, under the supervision of Dr James P Dunn and Professor Douglas Jabs. Dr Teoh runs his dedicated sub-specialty clinics at TEI@TTSH, as well as the Communicable Disease Centre (CDC).



**Dr Ho Su Ling**  
Dr Ho received her undergraduate medical training in the Royal College of Surgeons in Ireland. She completed her ophthalmology basic and advanced surgical training programme in Ireland and was awarded the Registrar's Prize by the Royal Academy of Medicine in Ireland and Barbara Knox

Medal by the Irish College of Ophthalmologists. She was fellowship trained in Uveitis by Professor John V Forrester, University of Aberdeen, Scotland and was instrumental in setting up the uveitis database in the clinics in Aberdeen. Her current projects include looking into pseudoexfoliation syndrome in the Asian population and planning of electronic medical record (EMR) system for TEI.



**Dr Lennard Thean**  
Having received fellowship training in both glaucoma and uveitis, Dr Thean brings a wealth of knowledge and experience to both these areas. Acknowledging his

expertise in the area of uveitic glaucoma, Dr Thean has been invited to give numerous talks on this topic both locally and regionally.

# How Not To Miss Uveitis

Ocular inflammatory disease, especially uveitis, is a serious and potentially blinding condition. Broadly speaking, uveitis refers to inflammatory disorders involving the iris, ciliary body or choroidal tissues, and it can be classified as infectious or non-infectious.

The treatment of uveitis is very specific from case to case, and medications used require frequent monitoring. Thus, uveitic cases should be managed strictly by an ophthalmologist.

Diagnosing uveitis in a general practice setting can be challenging. Nevertheless, the following are some tips and telltale signs:

## History

### Clues From Symptoms

- Photophobia
  - ✦ Patients with iritis / anterior uveitis are exceptionally photophobic due to ciliary spasm.
- Floaters
  - ✦ Due to vitreous inflammation, indicating more serious disease.
- Decreased vision
  - ✦ In anterior uveitis, this is primarily due to inflammatory cells and exudates in the anterior chamber.
  - ✦ Other causes include:
    - Uveitic cataract
    - Cystoid macular oedema
    - Vitritis
    - Optic nerve involvement
- Ocular discomfort:
  - ✦ Usually a dull ache or throbbing sensation
  - ✦ May be related to ciliary spasm or secondary raised intraocular pressure
  - ✦ If the eye is tender to touch, involvement of the sclera should be considered.
- Recurrent episodes of acute red eye, usually unilateral and not responsive to antibiotics.
- Prolonged 'sore eye' and red eye without discharge.

### Epidemiological Clues (Risk Factors)

- Positive family history
  - ✦ Strong HLA associations in certain uveitic conditions (eg: HLA-B27 uveitis, Behcet's)

- ✦ Certain autoimmune diseases may run in the family
- Systemic autoimmune or rheumatological disorders
  - ✦ Eg: SLE, Ankylosing spondylitis
- Systemic infection: eg: HIV, TB, HSV, HZV
- Recent ocular trauma or surgery either on ipsilateral or contralateral eye



Acute anterior uveitis with hypopyon.

Irregular pupil caused by synechiae.

## Physical Examination

### Eye Signs

- Circum-corneal injection: in contrast to conjunctivitis, in which the injection tends to be more intense in the fornices.
- Hypopyon: pus-fluid level in the anterior chamber.
- Irregular and poorly reactive pupil (recurrent inflammation leads to adhesion between the pupil and the lens in some sectors aka synechiae).
- Hazy cornea: secondary to oedema, keratic precipitates or glaucoma.



Keratic precipitates on the cornea endothelium.

### Systemic Signs

- Patient is unwell: e.g. fever, GI upset.
- Dermatological disorders: e.g. psoriasis, erythema nodosum, mucocutaneous ulcers, vitiligo.
- Joint deformity: ankylosing spondylitis, psoriatic arthropathy.

By Dr Ho Su Ling, TEI@ TTSH

## How Not To Miss Keratoconus

Keratoconus is a rare but progressive non-inflammatory thinning and conical deformity of the cornea. It is often misdiagnosed as "severe", "unstable" or "progressive astigmatism". The optometrist is frequently the first eye care professional to detect the condition.

### Clues from the History

- An unhappy refractive history: Patients report frequent changes of spectacles or lenses, never achieving full satisfaction, and complain of conflicting refractive findings from different outlets.
- Patient profile: Young adults, with a very slight male and possibly Indian predominance.
- Itchy and uncomfortable eyes: An extremely strong link I have noted in my practice is allergic or vernal conjunctivitis, which predisposes the patient to eye rubbing and keratoconus, The CLEK study quoted a 58% association.

### Clues from Examination & Investigations

- Munson's sign: when the patient looks down, advanced cones will tent forward the lower lids, forming a pronounced "U"-shaped contour.
- Direct Fundoscopy: the "oil drop sign" on the red reflex – a dark, ring-shaped shadow surrounding the bright apex of the cone.
- Streak Retinoscopy: a scissoring light reflex and the oil drop sign generally make retinoscopy difficult. The final refraction: high degrees of irregular myopic astigmatism

- Keratometry: usually in the range of 45-52D. Mires are steep and egg-shaped.
- Slit Lamp Examination: Stromal thinning and/or scarring at the corneal apex; Fleischer Ring (a brownish curve at the base of the cone, best seen with blue light); Vogt's striae in the cornea, which disappear with globe indentation.
- Corneal Topography: Rabinowitz's criteria apply - a central K value of greater than 47.2D; more than 1.4D asymmetry between inferior and superior cornea; a K-ISA% value of more than 100%.

- Management Based on my experience, most patients who are unhappy with spectacles end up with best results using rigid gas-permeable lenses. That said, the fitting process is often very challenging due to corneal sensitivity from the condition. Uni-ocular onset often creates greater lens awareness and makes lens adaptation more difficult.

### Management

Nevertheless, in many cases, being able to push a patient to 6/9 or better is often the driving force for me to patiently go through multiple trial fittings with them, in order to help them improve their well-being.

By Mr Anthony Sim

Some material adapted from emedicine.com



## WHAT'S ON



Dr Wong Hon Tym was invited to be the External Examiner for the University Sains Malaysia's Ophthalmology Master of Medicine examinations, held in May 2007 in Kota Bharu, Kelantan. Beside him is Dr Wan Hazzabah, Head of USM Ophthalmology.



As part of the collaboration programme between TEI @ TTSH and Chang Ning District Centre Hospital, Dr Zhang Runqi and Ms Yan Meili (Shanghai, China) visited TEI @TTSH Eye Centre for 3 months' observership attachment from 28 May 07 to 27 Aug 07.



The 6th National Congress of Optometry and Opticianry (NCOO), Singapore's largest scientific meeting for primary eye care professionals, was held from 21-23 June 2007 in TEI @ AH. The congress included symposia, workshops and a trade exhibition. The Guest of Honour was Mr Khaw Boon Wan, Minister for Health. With him is A/Prof Au Eong Kah Guan, Chairman of the NCOO Organising Committee.



As part of the SAVE VISION community project, TEI collaborated with the Health Promotion Board to launch the EYE ALERT Brochure this June. This new collaborative hopes to alert the public regarding the common blinding conditions they might be suffering and encourage them to go for early eye screening before severe vision loss.

Interested parties who wish to receive or distribute the brochure may contact [tei@nhg.com.sg](mailto:tei@nhg.com.sg)



Dr Wong Hon Tym and Dr Lim Boon Ang were invited to teach at the 49th Annual Cataract, Glaucoma, Ocular Surface Disease and Refractive Surgery Training held at Tianjin Medical University Eye Centre from 21 June to 24 June 2007.



The NHG Health Fair themed "The Art of Living" was held at Suntec City on 26-27 June 2007. Besides giving informative lunch talks, the TEI teams from TTSH and AH also provided Lasik and Droopy Eyelids pre-assessment for the public during the 2 days event.

## Upcoming Events

Date/ time	Venue	Title	Contact Details
<b>For Public</b>			
3 Nov 2007 1.30pm - 3.30pm	TEI @ TTSH Theatre	Public Forum: Glaucoma and You (In Mandarin) Drs Wong Hon Tym and Lim Boon Ang	Ms Lim Sing Yong/ Lalitha: 6357 2678 /6357 7648 <a href="mailto:sing_yong_LIM@ttsh.com.sg">sing_yong_LIM@ttsh.com.sg</a>
18 Nov 2007 1.30pm - 3.30pm	TEI @ TTSH Theatre	Public Forum: Eye Problems in Kids (In English) Dr Leo Seo Wei The Allergy March in Childhood (In English) Dr Bernard Thong	Ms Lim Sing Yong/ Lalitha: 6357 2678 /6357 7648 <a href="mailto:sing_yong_LIM@ttsh.com.sg">sing_yong_LIM@ttsh.com.sg</a>
Dec 2007	TEI @ TTSH Eye Centre, Atrium	National Eye Care Day	Ms Lim Sing Yong/ Lalitha: 6357 2678 /6357 7648 <a href="mailto:sing_yong_LIM@ttsh.com.sg">sing_yong_LIM@ttsh.com.sg</a>
<b>For Optometrists and Opticians</b>			
28 Nov 2007	TEI @ AH	Continuing Optometrists Education	

## TEI 3rd Research Day - 6th October 2007

### Best presentations by Advanced Specialist Trainees or Clinical Fellows THE EYE INSTITUTE-BAUSCH & LOMB RESEARCH PRIZE

Winner - **Dr Jimmy Lim Wei Kheong**  
Paper - Comparing Clinical Accuracy and Efficiency of Automated Visual Acuity Assessment System with Manual Visual Acuity Assessment

### Best presentation by Basic Specialist Trainees THE EYE INSTITUTE-ALLERGAN RESEARCH PRIZE

Winner - **Dr Elaine Huang Huizhen**  
Paper - Intra-arterial Fibrinolysis for Acute Central Retinal Artery Occlusion: A Systemic Review

### Best presentations by Students or Paramedical Staff THE EYE INSTITUTE-HOYA RESEARCH PRIZE

Winner - **Ms Neo Hui Yee**  
Paper - Health-related Quality of Life and Utility Values Associated with Diabetic Retinopathy in Singapore Patients

### Best presentation by Non-Trainee Doctors or TEI Research Collaborators THE EYE INSTITUTE-NOVARTIS RESEARCH PRIZE

Winner - **Dr Ajeet M. Wagle**  
Paper - Health-related Quality of Life Associated with Age-related Macular Degeneration Using Utility Values and EQ-5D Health Status Questionnaire

### Best presentation by Specialist Doctors THE EYE INSTITUTE-ALCON RESEARCH PRIZE

Winner - **A/Prof Goh Kong Yong**  
Paper - Vision Restoration Therapy for Post-geniculate Visual Loss in Patients with Strokes

### Winners of the 2007 The Eye Institute-Pfizer Research Prizes:

Prize	Winner	Co-author(s)	Paper
Best Original Paper	Neelam K	Nolan J, Loane E, Stack J, O'Donovan O, Au Eong KG, Beatty S.	Macular pigment and ocular biometry.
Outstanding Original Paper	Saw SM	Gazzard G, Wagle AM, Lim J, Au Eong KG.	An evidence-based analysis of surgical interventions for uncomplicated rhegmatogenous retinal detachment.
Best Case Report/Small Case Series	Akhtar S	Voon LW, Bron AJ.	The ultrastructure of superficial hypertrophic dendriform epitheliopathy after keratoplasty.
Best Review Paper/Book Chapters/Letter to Editor/ Correspondence	O'connell E	Neelam K, Nolan J, Au Eong KG, Beatty S.	Macular carotenoids and age-related maculopathy.

## TEST YOUR EYE Q QUIZ

### YOU MAKE THE DIAGNOSIS!

This lady has been attending the eye clinic for recurrent anterior uveitis. She also has the above skin lesions over her upper and lower limbs for the past five years.

- 1 What do the pictures show?
- 2 What is the most likely diagnosis?



Quiz master: Dr Ho Su Ling, TEI@TTSH

1) The hands and feet show cutaneous plaques, characterised by salmon-pink areas covered with thick, silvery scales. There is also nail dystrophy with pitting, transverse depression and onycholysis (separation of the nail from its bed).

2) Psoriasis. Anterior uveitis occurs in 7% to 20% of patients with psoriatic arthritis. Those with axial skeleton involvement, including psoriatic spondylitis and sacro-iliitis, are likely to be HLA-B27 positive and have a 30% chance of developing anterior uveitis.

## ANSWERS



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