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Endoscopic Dacryocystorhinostomy in the Treatment of Nasolacrimal Duct Obstruction

Nasolacrimal Duct Obstruction

Nasolacrimal duct obstruction (NLDO) is not an uncommon entity especially in elderly females. The resultant epiphora (tearing) and discharge can be a disturbance to one's daily life. A small proportion of NLDO can present with an infective process, such as dacryocystitis (Fig 1), which may potentially spread into the orbit causing vision-threatening complications.



Figure 1. A patient with epiphora due to bilateral nasolacrimal duct obstruction plus a superimposed left acute dacryocystitis.

Patients with epiphora should be evaluated for obstruction of the lacrimal drainage system (LDS) after excluding local causes such as lacrimal pump failure (orbicularis oculi paresis), eyelid malposition or trichiasis (inturned lashes). The dye disappearance test is a simple non-invasive one that demonstrates persistence of fluorescein dye in the inferior conjunctival fornix in the presence of LDS blockade. (Fig 2) The site and severity of the block along the LDS is further assessed on lacrimal irrigation. The presence of a "hard stop" and resistance to irrigation, with or without reflux from the other ipsilateral punctum, indicates NLDO. Lacrimal irrigation should be avoided in acute dacryocystitis, as it worsens the condition and causes unnecessary pain.



Figure 2. The same patient after left endoscopic DCR. Dye disappearance test after 10 minutes showed clearance of fluorescein in the operated eye, but retention in the right eye. Note the transparent stent in the left eye.

Conventional Surgery - External DCR

The gold standard for the treatment of NLDO is external dacryocystorhinostomy (DCR), which involves the creation of a connection between the nasal mucosa and the lacrimal sac mucosa, thus bypassing the NLDO. Indications include symptomatic epiphora and dacryocystitis. In rare instances, infiltrative diseases such as sarcoidosis, Wegener's Granulomatosis and lymphoma may involve the LDS causing secondary obstruction that will require DCR to treat and to obtain biopsies of the lacrimal sac and nasal mucosa.

Conventionally, DCR is performed externally via a medial canthal skin incision through the orbicularis oculi and removing the orbital bones between the nasal and lacrimal sac mucosae. This technique involves familiar anatomical structures and gives good surgical access to enable the creation of large mucosal flaps for anastomosis and biopsy (if indicated). The surgery can often be performed under regional anesthesia, occasionally under general anesthesia. The surgical scar can sometimes pose a cosmetic concern to the patient.

Continued next page



Editor's Message

Welcome to the first issue of TEInsight in 2008.

Change seems to be the only constant in our lives nowadays, but thanks to your warm feedback, we are sticking to a mix of articles aimed at family physicians, optometrists and general ophthalmologists - our formula since the very first issue in 2006.

We have maintained a near-100% educational quotient, minimizing articles and photos which depict the acts of (a) ribbon-cutting; (b) assembly behind/under large banners; and (c) the receipt of Plaques of Appreciation. Just the facts, minus the fanfare.

This time round, we focus on two closely interlinked sub-specialties. Paediatric ophthalmologists and Oculoplastic surgeons constantly find themselves side by side - during teaching rounds, in the OT or in front of X-Ray boxes, discussing and managing complex problems such as childhood tumours, trauma and naso-lacrimal disorders.

Unfortunately, the number of doctors in these 2 subspecialties remains painfully low in Singapore and the world over, perhaps a reflection of the particularly challenging nature of their jobs - they are rare and precious breeds indeed. We hope that this issue will give you more than a glimpse into their worlds.

As always, I hope you will find this and every issue of TEInsight a good read.

Erratum for previous issue of TEInsight

- Cover article: "10-15 seconds" should have read "10¹⁵ seconds"
- TEI's Cornea Team: Dr Gerard Nah was inadvertently omitted from the Visiting Consultant list for TEI@NUH

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 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 with the subject heading "TEInsight Subscribe".

Continued from page 1

Alternative Surgery- Endoscopic DCR

DCR can also be done endoscopically through the nasal cavity. Endoscopic DCR has the advantages of avoiding a cutaneous scar and major trauma to medial canthal structures. This is particularly advantageous in individuals who are keloid prone or are at risk of a hyper- or hypopigmented scar formation. In some Oriental patients with a prominent epicanthal fold, the medial canthal webbing resulting from the external approach may be difficult to remedy subsequently.

Endoscopic DCR is also useful to revise failed external DCR. The nasal endoscope directly visualises the cause(s) of failure such as an inadequately sized osteotome and nasal synechia, allowing more specific treatment.

The success rates for the external approach have been reported to be above 90%¹. Endonasal laser assisted approaches have lower success rate of 60% to 86%², probably due to thermal scarring of the fistula. The advent of powered drilling instruments to remove the hard bone adjacent to the lacrimal sac has improved the success rates of endoscopic DCR to 95%³.



Figure 3. During endoscopic DCR, an angled burr is used to remove the superior thick bone of the osteotomy. This cannot be done with a standard rongeur. The limit of this superior bony edge is the lacrimal sac tented by a Bowman's probe placed through the inferior canaliculus.

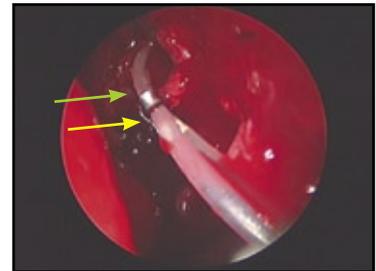


Figure 4. A Crawford lacrimal stent (green arrow) is looped through the superior and inferior canaliculi, exiting at the common canaliculus, the latter exposed after splitting open the medial wall of the lacrimal sac. A Liga clip (yellow arrow) is used to appose the 2 ends of the stent.

Surgical Procedure

Endoscopic DCR is generally performed under general anesthesia. Collaboration with an ENT Surgeon is recommended for a beginning surgeon. The nasal cavity is first packed with patties soaked with a decongestant. An osteotomy is then performed after incising and reflecting the nasal mucosa to expose the lacrimal sac and the initial few millimeters of the nasolacrimal duct. The bone at the superior edge of the osteotomy is often very thick and angled at an awkward position for removal by a Kerrison rongeur. Thus, a curved DCR diamond-tip burr is employed for this, and is applied until the lacrimal sac can be seen. The latter is tented up with a No. 3/0 Bowman's probe placed horizontally through the inferior canaliculus. A corresponding C-shaped incision is made in the lacrimal sac mucosa and its posterior flap apposed to that of the nasal mucosa. The anterior flaps of both mucosae are then positioned to cover the raw bony edges of the osteotomy. Bicanalicular stenting is done to maintain the patency of the DCR site (Fig 2) and the stents are removed 4-6 weeks later. The nasal cavity can be packed with Merocel to decrease post-operative bleeding. The post-operative instructions are similar to that of external DCR surgery (the avoidance of strenuous activities, straining, nose blowing, sneezing and pulling on the stent). Patients are also put on nasal decongestants, antibiotic-steroid nasal sprays and eye drops.

The efficacy of anti-metabolites such as Mitomycin C to improve the success of endoscopic DCR is still unknown. From our experience, a less inflamed nasal cavity and DCR site was observed, but the success rate did not reach statistical significance in our retrospective analysis. Further randomised study may be helpful to answer this question.

In conclusion, endoscopic DCR is a viable alternative surgical treatment of NLD obstruction in selected patients, with good success rates.

By Dr Yip Chee Chew, TEI @AH

References

1. Hartikainen J, et al. Prospective randomized comparison of endonasal endoscopic dacryocystorhinostomy and external dacryocystorhinostomy. *Laryngoscope* 1998;108:1861-6
2. Mueller K, et al. Endolacrimal laser assisted surgery. *Br J Ophthalmol* 2000;84:16-18.
3. A Tsirbas, Wormald PJ. Mechanical endonasal dacryocystorhinostomy with mucosal flaps. *Br J Ophthalmol* 2003;87:43-47.

Tearing & Naso-Lacrimal Duct Obstruction in the Infant

“My baby’s eyes are wet & teary all the time!” is not an uncommon complaint to the general practitioner. More perplexing is the ‘comfortably tearing’ child whose eyes are not reddened, and has a normal physical examination.

The evaluation of this symptom begins with an understanding of the chief causes, which can be divided into 2 categories:

Over-Production of Tears

- Allergic conjunctivitis
- Lash or lid malposition (eg. epiblepharon)
- Corneal infection or injury
- Congenital glaucoma
- Ocular injury or foreign body

Under-Drainage of Tears

- Congenital Naso-Lacrimal Duct Obstruction (NLDO)
- Facial Nerve Palsy

NLDO, the focus of this article, is usually a diagnosis of exclusion, after thoroughly examining the child’s eyes for the other (fairly obvious) causes. In the vast majority of cases, the level of blockage is at the Valve of Hasner, where the NLD drains into the lateral wall of the nose.

Symptoms

- NLDO is a common bilateral condition occurring in 5-20% of full-term newborns.
- Watery or mucoid eye discharge from birth
- Epiphora and lash crusting with muco-purulent discharge manifest in the first month of life in 90% of cases.

Signs

- Significant fluorescein dye retention
- Dacryocystocele (a cystic swelling of the lacrimal sac that follows chronic outflow obstruction, resulting in an accumulation of mucus secreted by the sac epithelium)
- Dacryocystitis (when the lacrimal sac or dacryocystocele is secondarily infected), as shown in Figure 1
- The eyes are otherwise structurally and functionally normal



Figure 1: The red arrow indicates the typical naso-lacrimal location of dacryocystitis

Treatment

- Simple NLDO can be managed with **Crigler digital massage**, which is successful in over 90% of cases, leading to non-surgical clearance within 6 months. The technique involves firm strokes of the finger, directed downwards from the naso-lacrimal area, about five strokes twice daily. The intention is to use pressure to clear the obstructed system.
- **If symptoms persist after 1 year of age** (less than 1% of patients), a referral to a pediatric ophthalmologist is advised.
- At this stage, a diagnostic cum therapeutic procedure known as **syringing & probing** is usually offered, the success of which is strongly age-dependent. Children >24 months who undergo this experience failure rates exceeding 70%.
- Patients who fail the above then require **adjunctive surgical procedures** such as inferior turbinate infraction, balloon dilation and NLD intubation.
- Recalcitrant cases will eventually require **dacryocystorhinostomy** to create a surgical ostium between the lacrimal sac and the nasal cavity.
- **Prophylactic topical antibiotics** including Gentamicin may be applied for **dacryocystoceles**.
- **Dacryocystitis** should be managed by a Pediatric Ophthalmic or Oculoplastic surgeon with **systemic antibiotics and surgical decompression**.

Drs Leo Seo Wei and Goh E Shawn, TEI@ TTSH

SPOTLIGHT ON

TEI’s Oculoplastics Team



Dr. Yip Chee Chew

Now heading the TEI oculoplastic service, Dr Yip, consultant at TEI @ AH, is one of a few doctors awarded a two-year Ministry of Health HMDP scholarship. He was trained at the University of Cincinnati and the University of California, Los Angeles – two prominent centres in Eye Plastic and Reconstructive Surgery. He publishes widely and has experience in the functional and cosmetic treatment of eyelid, orbital and lacrimal diseases. He is also a reviewer for the American Journal of Ophthalmology and a certified trainer and supervisor for Oculoplastics advanced surgical training, as well as a course instructor at the American Academy of Ophthalmology Annual Meeting.



Dr. Shantha Amrith

Dr Shantha, a senior consultant at TEI @ NUH, obtained FRCS Ophth from Royal College of Surgeons, Edinburgh in 1979, followed by two Ophthalmic Plastic and Reconstructive Surgery fellowships in Sydney Eye Hospital, Australia and University of Cincinnati Hospitals, USA. She possesses a vast breadth of experience in managing a wide variety of patients with various lid, lacrimal and orbital pathologies for reconstructive as well as cosmetic surgery.



Dr Gangadhara Sundar

Dr Ganga, a consultant at TEI@NUH, is active in furthering the cause of the specialty in the south-east asian region. His special interests include pediatric oculoplastics, aesthetic and functional reconstructive surgery, anophthalmic sockets and orbital reconstruction.

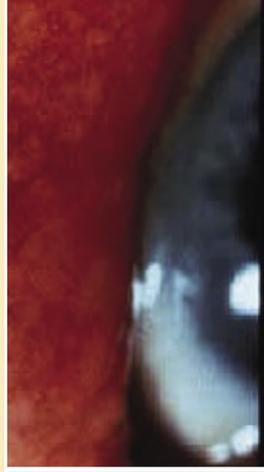
Visting Consultants:

Dr Raymond Phua
TEI @ NUH

Dr Fong Kee Siew
TEI @ TTSH

Red Eyes In Children

What are the causes?

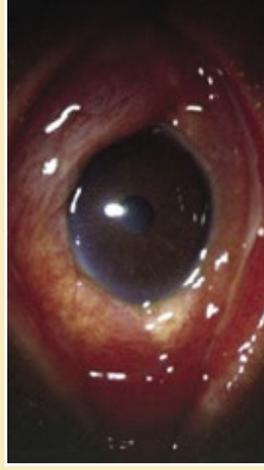


...In Babies less than 1 month old

Conjunctivitis of the Newborn

An infection of the white part of the eye

- Severe cases may be caused by bacteria such as Gonococcus and Chlamydia
- Parents need to be screened for sexually transmitted diseases



...With Discharge

Conjunctivitis

A common infection of the white part of the eye.

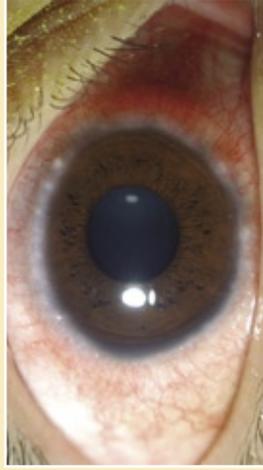
- Caused by bacteria or viruses, usually following a flu
- Strict hygiene and hand washing necessary
- Treatment unnecessary for mild cases
- Occasionally antibiotic eye drops may be needed



...With Eyelid Swelling and Fever

Infection of the Eyelid and Soft Tissue

- In preseptal cellulitis, infection is confined to eyelids. Associated with the eyelid and upper respiratory infections
- Orbital cellulitis is deep-seated and more ominous
 - results from sinusitis
 - can lead to blindness or even death



...With Persistent Tearing

Inborn blockage of the Tear Ducts

- Causes redness and tearing.
- Treatment is with antibiotic eye drops and massaging of the tear sac
- If condition fails to improve beyond 12 months of age, surgery may be needed



...With Itch

Allergic Conjunctivitis

- Common in kids who have asthma or eczema
- Treatment consists of anti-allergy eye drops and identifying any sources of allergy in the home

...With Mild Discomfort

1. Epiblepharon (Inturning Eyelashes)

- Common in Asian children
- The eyelid muscle and skin push the eyelashes inwards
- Treatment: Use of lubricants. Surgery is needed only if cornea is affected

2. Blepharitis

- Inflammation of the lids margins with crusting of lashes may be seen
- Treatment: Lid cleaning, antibiotics and mild steroids

When in doubt, always bring your child to see your family doctor or an eye specialist

Photos from TE@TTSH and TEI @ NUH

TEInsight

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Amblyopia Management: An Update

Amblyopia ("Lazy Eyes") is a unilateral or bilateral reduction in visual acuity in a structurally normal eye, secondary to abnormal visual experience and retinal image degeneration during early visual development.

This can result in cortical changes that lead to a permanent reduction in visual acuity. There is a 'critical period' in visual development, when correction of this abnormal visual experience can reverse the amblyogenic process.

Diagnosis

The diagnosis of amblyopia is made with the finding of reduced visual acuity despite optimum refractive correction, in the presence of an amblyogenic factor and no other ocular abnormality.

An ophthalmic evaluation for amblyopia is warranted when the measured visual acuity in either or both eyes is 6/12 or worse in those aged 3 to 5 years old, or 6/9 or worse for those aged 6 years onwards. Alternatively, unilateral amblyopia may be present if there is ≥ 2 lines difference between the eyes.

Causes

The causes of amblyopia can be divided into 3 groups: **Deprivation** (e.g. congenital cataract), **Strabismic** (squints-related) and **Refractive**. Local studies cite refractive error as the main culprit, while strabismus appears to be the most common cause in western countries.

The "critical period" varies with the type of visual insult, with deprivation amblyopia requiring intervention within a few weeks or months and refractive amblyopia being amenable to reversal even after several years.



Infant with right congenital cataract

Treatment

There are 4 main arms in the treatment of amblyopia.

1. Removal / treatment of the underlying cause if possible (particularly in deprivation amblyopia)

2. Optical.

Young children with amblyogenic refractive errors should be prescribed with their appropriate spectacle correction. Glasses alone may be sufficient to reverse amblyopia. Guidelines vary in terms of what degree of refractive error one should prescribe. One recommendation is high ametropia (of the magnitude ≥ 4 to 5.0D hyperopia, ≥ 6 to 8.0D myopia, $\geq 1.50D$ astigmatism) or anisometropia (hyperopic anisometropia $\geq 1.0D$ or myopic anisometropia $\geq 3.0D$).

3. Occlusion of the better eye.

This is the traditional mainstay of treatment and is usually instituted after options 1 and 2 have been addressed. Compliance however is a major issue, with rates up to 90%. The most common reason for this is a parental lack of understanding of the reason for patching.



Child with left eye patched and wearing glasses

4. Penalisation.

This involves blurring the vision in the better eye with either pharmacological (usually atropine eye drops) or optical agents (plus-powered 'fogging' lenses). This method is conventionally used as a fall-back treatment. Compliance tends to be easier with this method.

5. Other treatments

These treatments which attempt to take advantage of the visual system's plasticity, are primarily aimed at adult amblyopia. These include drugs like levedopa and citicoline, as well as computer-based visual re-training systems. Early studies have reported some successes.

Treatment Guidelines

The Pediatric Eye Disease Investigator Group (PEDIG) has published a series of reports on prospective randomised amblyopia treatment trials. In essence, the reports showed that less intrusive therapies or regimens were as effective as conventional protocols. Based on the findings, we have adapted the following broad treatment guidelines:

- Moderate amblyopia can be treated with either occlusion or atropine.
- Atropine may be administered daily or weekends only, however the response is slower than patching.
- Occlusion if used, should be at least 2 hours per day coupled with 1 hour of near work.
- Severe amblyopia can be treated with 6 hours per day of occlusion. The effect may be augmented with atropine and optical penalisation.
- For amblyopia patients over the age of 12, there was no definite benefit in occlusion therapy. However, if the patient never had amblyopia therapy in the past, a course of patching can be offered.

By Dr Benjamin Chang, TEI @AH

SPOTLIGHT ON

TEI's Paediatric Ophthalmology Team



Dr Leo Seo Wei

Dr Leo, a consultant at TEI @TSSH, heads the Paediatric Ophthalmology and Strabismus Service at TEI. Her interests are strabismus surgery (adult & paediatric), refractive errors and learning disabilities in children. She completed 2 fellowships in the USA. The first was an American Association of Pediatric Ophthalmology & Strabismus-accredited clinical fellowship at the University of Michigan and W.K Kellogg Eye Center, Ann Arbor, under the tutelage of Prof Monte Del Monte and Prof Steven Archer. This was followed by a shorter stint with the renowned Dr Kenneth Wright in Wright Center for Paediatric Ophthalmology and Strabismus, Los Angeles. She has since published numerous peer-reviewed articles and presented at international conferences. Dr Leo has a keen interest in children with dyslexia and children with special needs.



Dr Benjamin Chang

Dr Benjamin Chang's areas of ophthalmic practice include cataracts, comprehensive ophthalmology, paediatric ophthalmology and strabismus (adult and children). Dr Chang, now an Associate Consultant at TEI @AH, was a clinical fellow in paediatric ophthalmology and strabismus in the Hospital for Sick Children in Toronto, Canada. He is a Fellow of the Royal College of Surgeons in Ireland, the Royal College of Surgeons in Edinburgh and the Royal College of Ophthalmologists in London.



Dr Inez Wong

Dr Inez Wong, an Associate Consultant at TEI @NUH, has a special interest in pediatric ophthalmology including anterior segment diseases, cataract and glaucoma in children, as well as strabismus in adults and children. She obtained her medical degree from Cambridge University in the United Kingdom and completed her ophthalmology training in Singapore. She underwent subspecialty training in pediatric ophthalmology and strabismus in Singapore and then a pediatric ophthalmology fellowship at Great Ormond Street Hospital for Children in London.



Dr Gangadhara Sundar

Dr Ganga, consultant at TEI @NUH is active in furthering the cause of the speciality in the south-east asian region. His special interests include pediatric oculoplastics, aesthetic and functional reconstructive surgery, anophthalmic sockets and orbital reconstruction.



Dr Lim Su Ann

Dr Lim, a part-time neuro-ophthalmologist at TEI @TSSH, has a special interest in paralytic strabismus and motility problems of neurologic origin. She is also interested in the epidemiology of neuro-ophthalmic diseases in Singapore.

Visting Consultants: Dr Wong Chor Chon
TEI @ NUH

Dr Sonal Farzavandi
TEI @ NUH

Learning Disabilities & the Eye

Learning disabilities are fairly common in the paediatric population. **Dyslexia** in particular affects 80% of individuals with learning difficulties and possibly 15-20% of the population. It is defined as difficulty in learning to read, write and spell, despite traditional teaching, average intelligence and adequate opportunity to learn. There is impairment in the brain's ability to translate information received from the eyes and ears into understandable language. It does **not** result from visual or hearing problems, mental retardation or brain damage.

Our reading centres reside primarily in the left hemisphere. In dyslexics, these are less developed and show micro-architectural anomalies. Functional neuro-imaging reveals greater reliance on the slower right hemisphere and left inferior frontal gyrus instead. This profile has been shown to normalise after successful remedial training.

The paediatrician or family physician is often the first medical professional the patient's parents will contact when the suspicion of dyslexia arises. **Symptoms** may include faulty word recognition, poor spelling, phonological awareness and written expression, and slow reading speed. Grammar and word-calling errors occur when reading aloud. (Letter reversal, commonly believed to be a symptom of dyslexia, is in fact common in young children learning to write. Dyslexia should only be suspected if this persists beyond the age of eight.)

The **neurological examination** of a dyslexic child is usually **normal**. Laboratory investigations, imaging and electroencephalography are not normally indicated.

Management is multi-disciplinary

- Family physician and/or paediatrician manage any physical problems and make appropriate referrals
- Educational psychologist confirms the diagnosis and assesses the child's reading ability
- ENT surgeon excludes hearing deficits
- Remedial teacher provides intervention in phonological skills
- Ophthalmologist screens for and treats ocular problems that could hamper reading

Specific visual problems that could interfere with reading include

- Uncorrected refractive errors
- Bilateral disease of the retinae, lenses (cataracts) or optic nerves
- Accommodation deficits and convergence insufficiencies

Thus children with presumed learning disabilities should undergo **comprehensive eye evaluation**, which includes the following:



Fig 1: Checking stereopsis



Fig 2: Cover test to check ocular alignment



Fig 3: Retinal Examination

- Visual acuity for distance and near
- Cyclopegic refraction
- Stereopsis
- Ocular alignment and movements
- Accommodation and convergence
- Saccades and pursuit
- Visual field by confrontation
- Colour vision
- Anterior and posterior segment ophthalmic examination

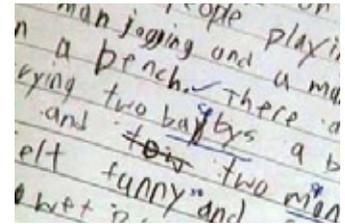


Image of handwriting
Courtesy of Dyslexia Association of Singapore

Treatment

Not a great deal of strong evidence exists to support some of the therapeutic approaches adopted for dyslexia (including the use of tinted glasses, neurological organisational training, etc).

At best, many of the modalities employed currently provide a strong supportive role in the overall rehabilitation of a dyslexic patient. For example, optometric vision therapy may be useful in treating convergence insufficiency, developing fine stereoscopic skills and improving visual field remnants after brain damage. Small controlled trials do support the treatment of convergence insufficiency in dyslexia.

In contrast, the saccadic abnormalities noted in dyslexic reader are the result and not the cause of dyslexia. There is no evidence that saccadic training improves reading.

In summary, dyslexia is a complex lifelong problem and management requires a multidisciplinary approach. Since remedy may be more effective in the early years, early diagnosis is paramount.

By Dr Leo Seo Wei, TEI@TTSH

RETINOSCOPY

Retinoscopy is an objective technique for diagnosing refractive errors, and often facilitates and/or confirms subjective testing. It is crucial in examining illiterates, preverbal children, deaf people, and individuals with speech impediments or language barriers.

It has several distinct advantages over the autorefractor

- It can detect patients with strong accommodative tone, who should be cyclopleged
- It can detect media opacities and keratoconus (oil droplet sign)
- It is able to estimate refractive errors better when there are media opacities
- It is cheaper and far more portable

Here's a mental checklist of do's and don'ts we run through whenever we perform retinoscopy:

Pearls

- **Semi-darkened room** for optimal contrast
- **Large fixation target** (6/120 letter or picture) to relax accommodation
- **Interesting targets for kids**, to sustain their attention and fixation

Pitfalls

- **Inconsistent working distance (WD):** We must maintain a standard WD throughout the examination, generally around 67cm (+1.50 D) or 50cm (+2.D). However, this is only a convention, and can be adjusted. Shorter WDs result in clearer reflexes but also amplify errors. This is because the reciprocal of the WD at the point of neutrality increases the error by as much 0.22D with in a change in WD of 5cm.



- **Patient not fixated on distance target:** If the patient fixates on the retinoscope's light source instead, there will be fluctuation in accommodation and constriction of the pupil.
- **Peripheral aberrations in widely dilated pupils:** Dilated pupils make the reflex more difficult to interpret. Always neutralise such reflexes centrally.
- **Position of the examiner:** The patient's right eye must be assessed with our right eye and so on. This allows us maximum alignment to the patient's visual axis, and minimises our obstructing the fixation target.
- **Unable to interpret "unusual" light reflexes:** Occurs when we fail to locate the principal meridian and to identify a scissoring reflex.

Retinoscopy is like chess: easy to learn but difficult to master, and it demands constant practice. With good skill, one should only take about 5 minutes to acquire a very good idea of what the endpoint should be. It is the simplest and most informative method of objective refraction.

By Ricky Marquez and Melanie Yeoh, TEI@TTSH

WHAT'S ON



The Age-Related Macular Degeneration (AMD) Awareness Week 2007 was launched on 15 September 2007 at the Jurong Medical Centre (JMC) in alignment with the world's Annual AMD Awareness campaign. TEI @AH and JMC partnered with more than 14 different organisations including TEI@TSSH and NUH to provide eye screening and public talks.



Dr Ho Su Ling presented her poster: "Ocular inflammatory diseases in a tertiary referral centre in Scotland." at the 9th International Ocular Inflammation Society meeting which was held in Paris in September 2007.



TEI 3rd Research Day was held on 6 October 2007 at Alexandra Hospital. The Guest of Honour for this event was A/Prof Pang Weng Sun, Chairman Medical Board, Alexandra Hospital. This annual event provides an avenue for TEI's ophthalmic team to share the updates and research advances in the field. A total of 36 research papers were presented in the event.



National Healthcare Group Annual Scientific Congress (ASC), on 10th-11th November 2007, saw many TEI doctors sharing their ideas and knowledge during the ophthalmology symposiums at the Raffles City Convention Centre. This year, TEI also specially showcased our research and public education efforts and Mobile Diabetic Retinopathy services.



On 1 Dec 2007, TEI @ TSSH conducted a free eye screening event for the public. Themed, "Your Vision Matters", the event was organised in conjunction with National Eye Care Day, and live music, arts & crafts as well as public education displays were too featured. TEI@ AH and NUH and other hospitals located island-wide were also heavily involved in this event, which aims to promote eye health awareness among Singaporeans, with a focus on the elderly this year.

Upcoming Events

Date/ time	Venue	Title	Contact Details
For Public			
29 Mar 2008	Alexandra Hospital	Age-Related Eye Diseases Cataract English: Dr Sachin M George Mandarin: Ms Rebecca Chew	Ms Alice How : 6379 3741, 6379 3540(fax) Alice_How@alexhosp.com.sg
10 May 2008	Alexandra Hospital	Eye Bags and Sags – Dr Yip Chee Chew	Ms Alice How : 6379 3741, 6379 3540(fax). Alice_How@alexhosp.com.sg
10 May 2008 2pm-4pm	TTSH Theatre	Diabetes (English)	Ms Lim Sing Yong/ Lalitha : 6357 2678 /6357 7648 sing_yong_LIM@ttsh.com.sg
For GPs			
19 Apr 2008 1pm-4pm	TTSH	TTSH Annual GP Symposium : Updates in Ophthalmology for the Family Practitioner Highlights: Advances in Cataract and Refractive surgery, Glaucoma treatment, Myopia, Age-related Macular Degeneration, etc	Ms Lim Sing Yong/ Lalitha : 6357 2678 /6357 7648 sing_yong_LIM@ttsh.com.sg
19 Jul 2008 2pm-4pm	TTSH	Case Studies on approaches to common ophthalmic problems Highlights : Ocular trauma, Diplopia, etc	
For Ophthalmologists & Trainees			
25 - 26 Apr 2008	TTSH Animal Lab in B1	The Eye Institute 8th Ophthalmic Microsurgery Course: Highlights: Cataract extraction , Trabeculectomy, Oculoplastic and trauma	Ms Izyani Ayik : 6357 2690 6357 7649 (fax) izyani_ayik@nhg.com.sg
For Optometrists and Opticians			
29 March 2008 8.30 - 10.30 am	Jurong Medical Centre	Continuing Optometrists Education : 1) Low Vision: Retinal Clues in Systemic Disease 2) Pterygium Surgery	} Ms Alice How : 6379 3741, 6379 3540(fax). Alice_How@alexhosp.com.sg
24 May 2008 8.30 - 10.30 am	Alexandra Hospital	Continuing Optometrists Education : 1) Success Rate of Progressive Contact Lenses for Presbyopes 2) Khoo Teck Puat Hospital (KTPH) Optometric Quiz	

TEI Doctors in the Research Publications

Chang BC, Mirabella G, Yagev R, Banh M, Mezer E, Parkin PC, Westall CA, Buncic JR.

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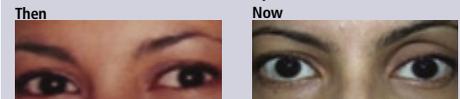
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TEST YOUR EYE Q QUIZ

YOU MAKE THE DIAGNOSIS!

This 31 year-old lady was referred for left "ptosis". On examination, there was no relative afferent pupillary defect, lid or orbital masses. Extra-ocular movements were full. These are her "then" and "now" photos.



1. What else do you see?
2. How can you confirm this clinically?
3. She gives a history of previous sinus surgery. Which investigation may clinch the diagnosis?

Quiz Master: Dr Llewellyn Lee, TEI @ TTSH

1. Left ophthalmos (recession of the eyeball). This has led to pseudo-ptosis, hypoglobus (inferior displacement) and deepening of the superior sulcus. 2. One can look at the eyeball from the side or from above the patient, and compare the fellow eye. An exophthalmometer can also be used to quantify the recession (or protrusion in proptotic cases). 3. This patient has "silent sinus syndrome", caused by chronic maxillary sinus atelectasis, which in turn is secondary to severe chronic sinusitis. Diagnosis is confirmed radiologically by CT scan, which may show up maxillary sinus outlet obstruction, sinus opacification, and mark volume contraction caused by inward retraction of the sinus walls.

ANSWERS