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EDITORIAL MESSAGE

Editorial Message (Dr Aliza Jap)

One of the current mantras in cataract surgery today is "The Smaller the Better". However, ASOCT imaging of the architecture of the corneal incisions suggests that in addition to the current limiting factors such as infusion concerns and the size of the intraocular lens, the integrity of the wound itself may also be compromised below a certain size, in the setting of present techniques of cataract removal.

So will we eventually have an eye drop that can prevent cataract formation? Maybe but don't lose even more hair yet- unless it can also change the refractive index of the lens, cataract surgeons will still be needed in our myopic population. That is until the myopic gene can be turned off….

But at least now can save some money on education since Chinese is not so fierce.

Happy New Year!

EDITORIAL TEAM

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MANY FACIES OF MACULAR TELANGIECTASIA AND ITS MANAGEMENT

Presented by **Dr Ranjana Mathur on 7 January 2009**
Written by **Dr Jean Chai**

INTRODUCTION AND CLASSIFICATION

Retinal capillary telangiectasias in the macular region can arise from various conditions such as diabetic retinopathy, hypertension, venous occlusion or blood dyscrasias. However, in some cases, an underlying cause cannot be identified, and these are termed as idiopathic juxtafoveal telangiectasias (IJFT). IJFT was first described in 1968 by Don Gass, and in 1993, Gass and Blodi proposed a classification based on biomicroscopic and fluorescein angiography (FA) findings. In 2006, Yannuzzi proposed the term idiopathic macular telangiectasia and suggested a modified classification of the Blodi-Gass model, as described below:

Type 1 is an aneurysmal telangiectasia (equivalent to Group 1 in the Blodi-Gass classification). It is usually unilateral and affects males more frequently. The aneurysms may vary considerably in size with surrounding lipid exudation. Choroidal neovascularisation(CNV) and retinal pigmentary changes are rare.

Type 2 is a perifoveal telangiectasia (equivalent to Group 2A of occult juxtafoveal telangiectasia in the Blodi- Gass classification). This is the most common form of IJFT, with bilateral involvement and no sex predilection. In the Blodi-Gass classification, five stages are described.

- Stage 1: Occult telangiectatic vessels seen only on angiography.
- Stage 2: Loss of retinal transparency with clinically evident telangiectasia
- Stage 3: Prominent dilated retinal venules
- Stage 4: Retinal pigment hyperplasia extending into the retina (figure 1).
- Stage 5: CNV

In the modified classification, this has been divided into non-proliferative (exudative telangiectasia and foveal atrophy) and proliferative (CNV and fibrosis) forms.

Type 3 is an occlusive telangiectasia (equivalent to Group 3 of the original classification), consisting of paramacular telangiectasia in an area bordering on perifoveal capillary nonperfusion. However, no cases were found in Yannuzzi's series and this has been deleted from this newer classification.

Figure 1. Fundus colour photograph showing hyperplasia of the retinal pigment epithelium in the foveal area with surrounding atrophy. This corresponds to type 2A IJFT (stage 4)

Pathophysiology of IJFT

The pathophysiology of macular telangiectasia is controversial, but it is postulated that the primary abnormality lies in the parafoveal retinal neural or Muller cells. Chronic low-grade nutritional deprivation damages retinal cells in particular the photoreceptors and Muller cells. The diffuse staining seen in late phase of FA is likely to be due to staining of the extracellular matrix and intracellular diffusion of the dye into the damaged retinal cells rather than retinal vascular leakage. This is accompanied later by a breakdown of the blood-retinal barrier in the parafoveolar retinal capillaries, accounting for the superimposed edema with slight retinal thickening. Extravasation of fluorescein through an altered endothelium is mediated in part by vascular endothelial growth factor A (VEGF-A), and inhibiting these effects could be of therapeutic value. Muller cell degeneration results in the crystalline changes seen in the inner retina.

Role of investigations in IJFT

FA remains the gold standard for diagnosis of IJFT (figure 2). However, with the increasing availability and advances in imaging, modalities such as optical coherence tomography (OCT) and fundal autofluorescence (AF) are being used to further the understanding of this condition.

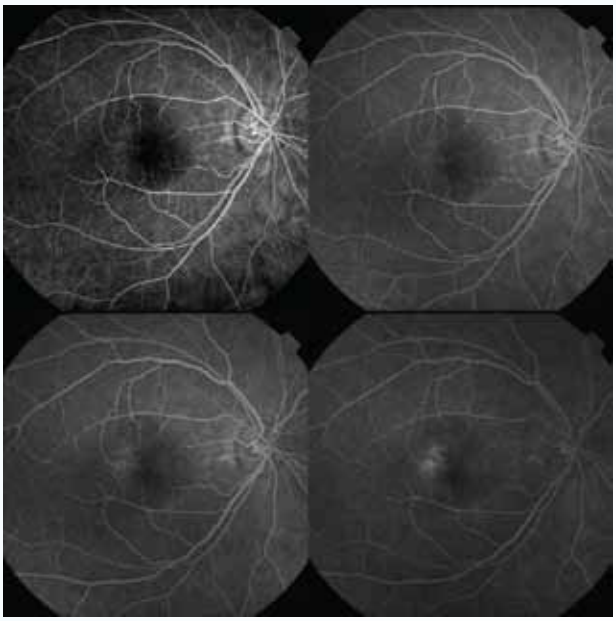

Figure 2. Telangiectatic parafoveal capillaries temporal to the fovea seen in the early phase with increase in hyperfluoresence in the late angiographic phase, due to dye extravasation from these vessels.

Intraretinal foveal cysts may be seen on OCT, and arise from cellular atrophy in the middle retinal layers, rather than as a result of fluid accumulation from increased permeability from the telangiectatic vessels (figure 3). Other features of IJFT seen on OCT include: atrophy of foveal tissue, hyper-reflective intraretinal spaces, fusiform thickening and duplication of the highly reflective retinal pigment epithelium / choriocapillaris complex corresponding to CNV formation, and lamellar or full-thickness macular hole.

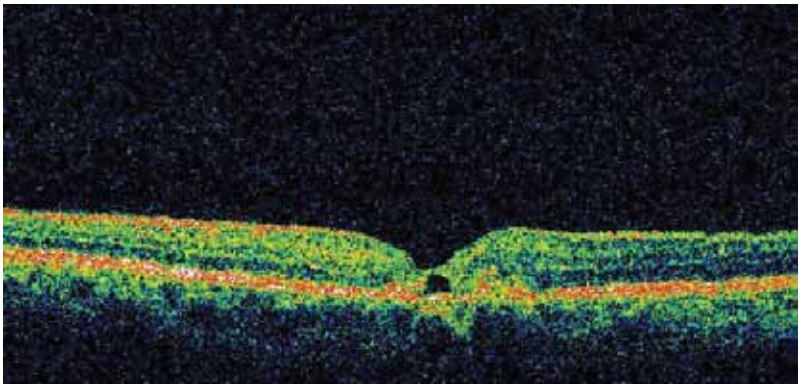

Figure 3. Optical coherence tomography (OCT) showing a deep intraretinal foveal cyst, which arises due to cellular atrophy of inner retinal layers unlike cystoid macula oedema, which is associated with retinal thickening.

Fundal autofluorescence (AF) imaging allows for objective recording of the spatial distribution of macular pigment optic density in vivo. In type 2 IJFT, there is marked depletion of macular pigment and with progression of the disease, the macular pigment may be gradually depleted or disappear centrally. This area of involvement may appear larger on AF than on FA. The role of AF in IJFT has yet to be defined, but it may be useful in prognostication of and monitoring of disease progression, especially since it is non-invasive.

Management of macular telangiectasia

The natural history of IJFT is not well understood, and visual loss due to photoreceptor damage, lamellar hole formation, CNV or scar formation, may occur despite treatment.

Type I and the proliferative form (stage 5-CNV) of Type 2A IJFT can be effectively treated and options include grid laser, photodynamic therapy/ transpupillary thermotherapy and intravitreal triamcinolone. More recently, anti-vascular endothelial growth factor (VEGF) agents have also been used to treat IJFT.

In contrast, the non-proliferative form of IJFT generally responds poorly to treatment. The use of intravitreal anti-VEGF agents have resulted in an initial decrease in parafoveal leakage on FA and decreased retinal thickness. However, this effect was not sustained with repeated injections. Recently indocyanine green mediated photothrombosis with intravitreal triamcinolone has been attempted in a small study with good visual results at 2 years.

Learning points

- Advances and increased availability of imaging techniques such as OCT and AF have improved our understanding of the disease process in IJFT.
- Various modalities of treatment are available for Type 1 and proliferative Type 2 IJFT. However, more studies are needed to further our understanding of IJFT and to elucidate good therapeutic options for the non-proliferative Type 2 IJFT, which does not respond well to current treatment.

MANAGEMENT OF COMPLICATED PROLIFERATIVE DIABETIC RETINOPATHY

Presented by **Dr Edmund Wong on 21 January 2009**
Written by **Dr Elaine Huang**

Proliferative diabetic retinopathy (PDR) is defined as the presence of new vessels within one disc diameter of the optic disc or new vessels elsewhere in the presence of other diabetic retinal changes. PDR with high-risk characteristics (HRC) includes patients with NVDs of greater than ¼ of the total disc area or NVEs of more than I disc area in size. Complicated PDR is defined as PDR in the presence of vitreous hemorrhage, retinal detachment (tractional or less commonly, rhegmatogenous) or rubeosis. (Figure 1)

Figure 1. Fundal photograph showing complicated PDR with presence of vitreous hemorrhage and large areas of preretinal hemorrhage

Established treatments in PDR include panretinal photocoagulation (PRP), trans pars plana vitrectomy (TPPV) combined with endolaser using the contact lens viewing system.

The Diabetic Retinopathy Study has shown that PRP in PDR results in a 50% decrease in rates of severe visual loss, and PRP in PDR with HRC results in 90% decrease in rates of severe visual loss.

The Diabetic Retinopathy Vitrectomy Study showed that early vitrectomy within 6 months for patients with Type 1 diabetes mellitus (DM) had beneficial outcomes. There was no significant visual advantage for early vitrectomy in patients with Type 2 DM. There was up to 10% no light perception (NPL) rate after vitrectomy but this study was done at an early stage of vitreoretinal surgery where no intraoperative laser was performed.

Current treatments in complicated PDR include PRP with Argon laser, intravitreal anti-vascular endothelial growth factors (VEGFs), and/or TPPV (25G/23G/20G). Non-contact wide-angle viewing systems have come into favour although their visual quality remains controversial. Small gauge chandelier lighting has further revolutionalized surgery in complicated PDR.

Intravitreal anti-VEGFs can be divided into the non-selective blockers which block all VEGF receptor sites including Bevacizumab (Avastin) and Ranibizumab (Lucentis), and selective blocker Pegaptanib (Macugen) which selectively blocks the 181 subsite.

Intravitreal Avastin has been shown to cause regression of retinal and iris neovascularization, improvement of vitreous hemorrhage and marked reduction in fluorescein leakage. Its effects can be seen even with 6.2 ug which is 1/200th of the currently used dosage of 1.25 mg. In patients with complicated PDR undergoing vitrectomy, intravitreal Avastin has also been shown to reduce vascularity, intraoperative bleeding, operating time and recurrent vitreous hemorrhage. However, there has been a reported increase of 5.2% in the incidence of tractional retinal detachment (TRD) after intravitreal Avastin, as well as anecdotal reports of increased macular ischaemia.

Whilst the smaller 25G gauge vitrectomy system have many benefits it does have limitations in terms of the decreased range of usable instruments. With respect to viewing systems, the standard contact lens system works well but does not give a wide-angle view. Wide-angle contact lens viewing systems with inverters, indirect wide angle viewing systems and the non-contact indirect viewing systems together with the small gauge chandelier lighting which allows bimanual membrane peeling to be performed, have also increased the management options for these patients.

Case 1

This is a 47-year-old Indian female with poorly controlled DM on oral hypoglycemics and hyperlipidemia. She was referred for abnormal diabetic retinal photograph DRP. Her vision was 6/6 in the right eye and 6/7.5 in the left. She had severe NPDR in the right eye and PDR in the left. She underwent PRP in both eyes over 5 months. She subsequently developed clinically significant macular edema (CSME) in both eyes and a left vitreous hemorrhage, reducing the vision in the left eye to 6/30. Despite further PRP and focal laser, the vitreous hemorrhage became worse and her vision deteriorated to counting fingers in both eyes. (Figure 2a)

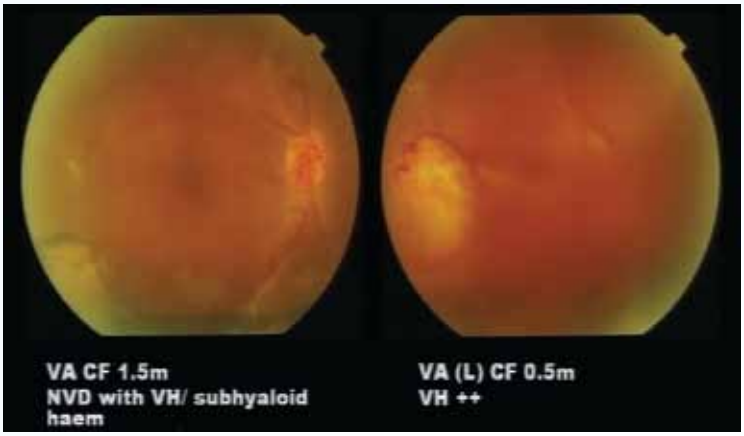

Figure 2a. Fundal photographs of Patient 1showing NVDS with fibrovascular tissue over the disc in the left eye and bilateral vitreous hemorrhage.

Intravitreal Avastin was given and 1 week thereafter she underwent 23G TPPV with membrane peel (MP). She achieved a vision of 6/12 in the right eye two months post op and 6/30 in the left one month post op. (Fig.ure 2b)

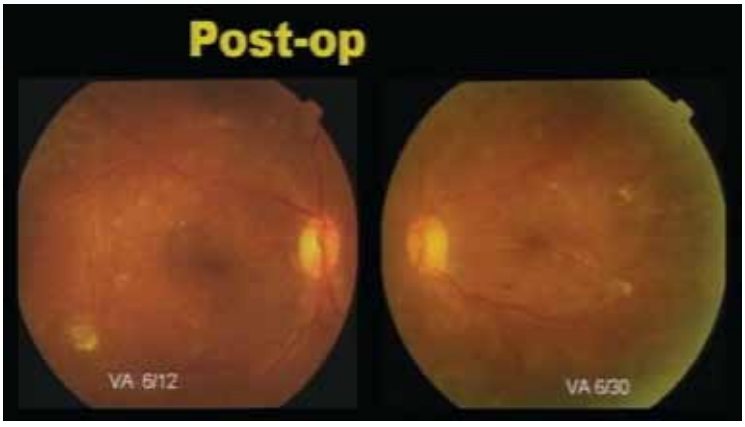

Figure 2b. Fundal photograph of Patient 1 at two months post left TPPV/MP.

Case 2

This 48-year-old Malay female with again poorly controlled DM and hypertension presented with floaters in the left eye. Her vision was 6/9 in the right eye and 6/7.5 in the left. She had complicated PDR bilaterally with vitreous hemorrhage and right CSME. (Figure 3a)

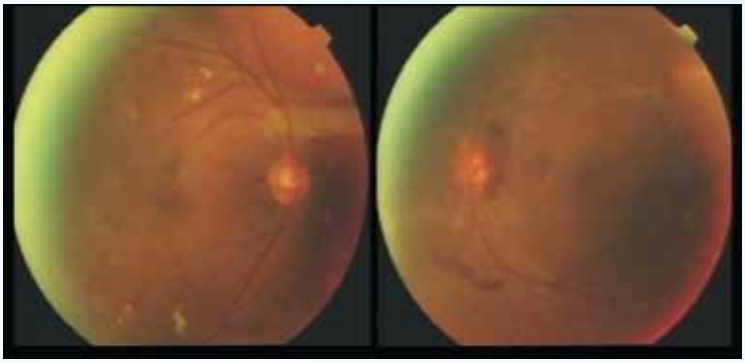

Figure 3a. Fundal photograph of Patient 2 showing complicated PDR with large neovascular fronds and vitreous hemorrhage.

She underwent bilateral PRP and right focal laser. She defaulted follow up and returned a few months later with deterioration of vision in her left eye to hand movements and development of a TRD. (Figure 3b)

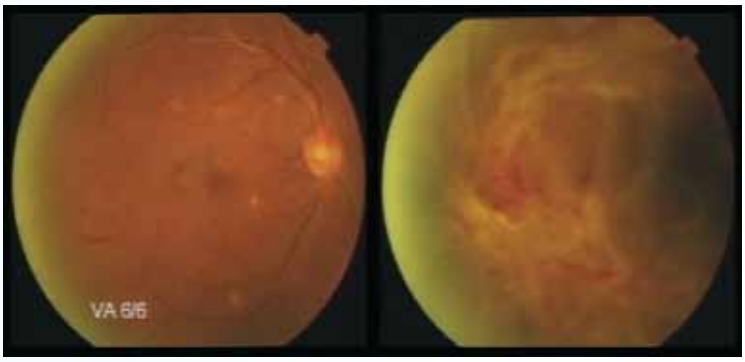

Figure 3b. Fundal photographs of Patient 2, taken 6 months later showing dense fibrovascular tissue with TRD involving the macula in the left eye.

She received intravitreal Avastin and 1 week later underwent TPPV / MP / Endolaser / Silicone oil with 27G DORC chandeliers and bimanual peeling. Her vision was 6 / 120 with a NS 3+ cataract at 7 months post op. (Figure 3c)

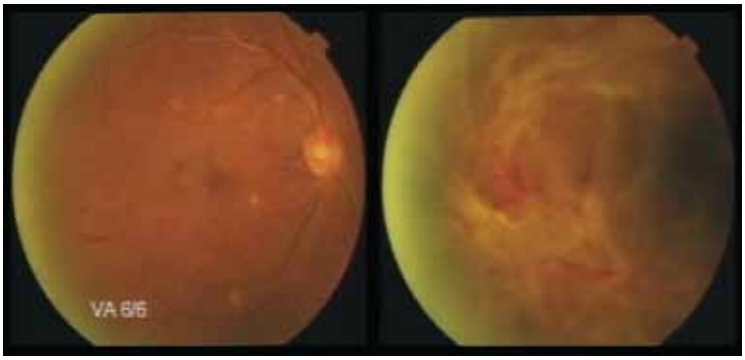

Figure 3c. Fundal photographs of Patient 2 at seven months post TPPV / MP / Endolaser / Silicone oil.

Our observation with preoperative intravitreal Avastin has been that it results in less intraoperative bleeding and shortens operative time and that it should be given 1 week before surgery. It is effective against iris neovascularization but this effect is not permanent and sufficient PRP is still required. There is a risk however of precipitating TRD. Surgical strategies in complicated PDR with VH in the absence of significant traction membranes include 25G or 23G TPPV with endolaser. In the presence of TRD, pre-operative Avastin is given 1-week prior to reduce intraoperative bleeding. The 23G TPPV is preferred with non-contact wide angle viewing system, DORC 27G twin chandelier and bimanual dissection. Simultaneous cataract surgery should be avoided where possible so as to reduce the risks of development of iris neovascularization. In eyes with neovascular glaucoma, intravitreal Avastin can facilitate PRP but these eyes may need to be co-managed with a glaucoma specialist.

Learning points

- Despite new modalities of treatment, adequate PRP still has an important role in the management of complicated PDR.
- Preoperative intravitreal avastin results in less intraoperative bleeding and shortens operative time and should be given one week prior to surgery.
- Advances in instrumentation have also led to better outcomes for these eyes.

DIAGNOSTIC TECHNOLOGIES FOR GLAUCOMA – ADVANCES AND CHALLENGES

Presented by **by Dr Augusto Azuara Blanco on 20 May 2009**
Written by **Dr Laurence Lim**

This lecture by Dr Augusto Azuara Blanco of the Aberdeen Royal Infirmary highlighted recent developments in diagnostic techniques for glaucoma, focusing on optic nerve head imaging technologies and perimetry. The speaker summarized the evidence for the use of the various diagnostic modalities currently available, and gave an outline of future research directions in this field.

Diagnostic technologies for glaucoma include devices that seek to measure and quantify risk factors such as intraocular pressure (IOP), anterior segment imaging and devices that assess structural and functional changes that may signify a diagnosis of glaucoma. The accuracy of a test is determined by the degree of agreement between that test and a reference standard. In general, selection and publication biases mean that most studies over-estimate the value of new diagnostic technologies.

The main optic nerve head imaging techniques for glaucoma are the Heidelberg Retinal Tomograph (HRT), GDx scanning laser polarimetry (GDx) and Optical Coherence Tomography (OCT). A survey of practice patterns in the UK in 2008 revealed that the OCT was the most commonly used optic nerve head imager (45.2%), followed by the HRT (43.9%) and GDx (12.6%). The current version of the HRT is the HRT-III, and the notable improvements include an enhanced ethnic-specific normal database, a new Glaucoma Probability Score that is comparable to the Moorfields Regression Analysis available with previous versions, and options for image scaling and alignment. The GDx has been updated with an enhanced corneal compensator (ECC) that reduces atypical birefringence patterns (ABPs) compared to the original variable corneal compensator (VCC). A recent study at the Rotterdam Eye Hospital showed that retinal nerve fibre layer (RNFL) measurement with the ECC had better structural-functional correlations with visual field changes than the VCC. The most significant advancement in OCT technology has been the introduction of spectral domain OCT (SDOCT).

Although SDOCT allows for higher resolution imaging and vivid three-dimensional optic nerve head reconstructions, a small study by Kim and Schuman did not find any improvements in diagnostic accuracy with SDOCT compared to conventional time-domain OCT.

However there are limitations in the studies on the accuracy of optic nerve head imaging devices. Study designs were retrospective in 25% of reviewed studies, only 20% reported on the sampling method, only 20% of studies had masked readers and only 25% reported indices of uncertainty such as confidence intervals. Nevertheless, a comprehensive review by the Ophthalmic Technology Assessment Committee Glaucoma Panel of the American Academy of Ophthalmology concluded that "ongoing advances in imaging and related software as well as impracticalities associated with obtaining and assessing optic nerve stereophotographs have made imaging increasingly important in many practice settings". The indications for imaging in clinical practice include documentation and disc size measurement for determination of macrodiscs or disc size asymmetry. The Confocal Scanning Laser Ophthalmoscopy (CSLO) ancillary study to the OHTS identified baseline HRT features that predict the risk of glaucoma development, and there is also limited evidence that imaging tools may help in detecting progression.

Static Automated Perimetry (SAP) is the current reference standard for visual field assessment. Advances in SAP testing algorithms have led to drastically reduced testing times without significant compromises in accuracy. A full threshold SAP test takes on average 14 minutes to complete, compared to the newer SITA-fast (5 minutes) and supra-threshold algorithms (2 minutes). Visual function specific perimetry is an evolving field that presents selective stimuli to isolate specific retinal ganglion cell populations. It was originally thought that differential vulnerabilities to glaucomatous damage was the basis for visual function specific perimetry but this is now known to be due to reduced redundancy in each cell type. Short Wave Automated Perimetry (SWAP) was one of the first forms of perimetry to exploit the blue-yellow sensitivity (koniocellular) pathway but it has since been shown to suffer from low specificity, poor performance in cataractous eyes, long test times and increased test variability. Frequency Doubling Technology (FDT) assesses the magnocellular pathway using a 15Hz flickering stimulus. It has recently been updated with a new matrix target presentation pattern with smaller and denser stimuli for greater sensitivity. Population based studies have shown good diagnostic performance and potential for use in screening, but no comparisons with SAP have been made. Other forms of visual function specific perimetry under development include random-dot kinetograms (RDK) and moving bar targets, both of which assess the magnocellular pathway.

A recent publication by Dr Blanco's group systematically reviewed the diagnostic performance of various tests for glaucoma in detecting open angle glaucoma. The study conducted a comprehensive literature search of Medline, Embase, Biosis, Science Citation Index and The Cochrane Library. Studies assessing candidate screening tests for detecting OAG in persons older than 40 years that reported true and false positives and negatives were included. A meta-analysis was undertaken using the hierarchical summary receiver operating characteristic model. Forty studies enrolling over 48,000 people reporting on nine tests were included. FDT was significantly more sensitive than ophthalmoscopy and Goldmann applanation tonometry(GAT), whereas threshold SAP and HRT II were both more sensitive than GAT. GAT was more specific than both FDT and threshold SAP. Judging performance by diagnostic odds ratio, FDT, oculokinetic perimetry, and HRT II gave the best results. Ophthalmoscopy, SAP, retinal photography, and GAT had relatively poor performance as single tests. The authors concluded that as their findings were based on heterogeneous data of limited quality, no test or group of tests was clearly superior for glaucoma screening. Dr Blanco ended his lecture by giving an overview of a large ongoing study comparing the diagnostic performance and applicability of HRT-III, GDx and OCT. The study aims to enroll 894 subjects referred for a suspicion of glaucoma, and will compare the three candidate imaging modalities with the reference standard of an ophthalmic examination combined with visual field testing. The study is powered to detect a difference in sensitivity of 9% and specificity of 6%, and should yield valuable and reliable comparative data on the diagnostic performance of these imaging devices when completed.

Learning points

- Structural imaging tests for glaucoma are valuable adjuncts in the diagnosis of glaucoma.
- Promising advances in perimetric software and techniques have been made, but Static Automated Perimetry remains the reference standard for visual field assessment.
- Current diagnostic techniques for glaucoma are not sufficiently reliable to qualify them as stand-alone tools for glaucoma diagnosis or screening, and a combination of tests is still recommended.

ANTERIOR SEGMENT OPTICAL COHERENCE TOMOGRAM (ASOCT) EVALUATION OF THE INTEGRITY OF CLEAR CORNEAL INCISIONS (CCI) IN CATARACT SURGERY

A Comparison Between the 2.2mm and 2.65 Main Incision

Presented by **Assoc Prof Chee Soon Phaik on 15 July 2009**
Written by **Dr Leonard Yuen**

INTRODUCTION

Optimizing the integrity of clear corneal incisions (CCI) in cataract surgery may reduce postoperative endophthalmitis by limiting the entry of contaminated ocular surface fluid. This prospective study compared the structure and integrity of 2.2 and 2.65mm CCIs of 60 eyes that underwent cataract surgery, using the anterior segment optical coherence tomography (ASOCT, Zeiss Meditec, Germany).

METHODS

All consecutive patients undergoing routine phacoemulsification during the study period were randomized to two groups, one using 2.2mm main incision (ClearCut Slit Knife, Alcon, USA) and the other, 2.65mm incision (LaserEdge, Bausch & Lomb, USA) . 3 surgeons using standard surgical techniques performed the surgeries. Postoperatively, the integrity of main and side incisions were examined by 1 masked investigator. ASOCT images of the centre of the 2 incisions were acquired (Figure 1) and the following wound parameters were analysed: profile of the wound (flat or curved), incision chord length, incision angle, squareness of the main wound (the ratio of incision length over width), wound gape and extent, descemet's membrane detachment and corneal swelling.

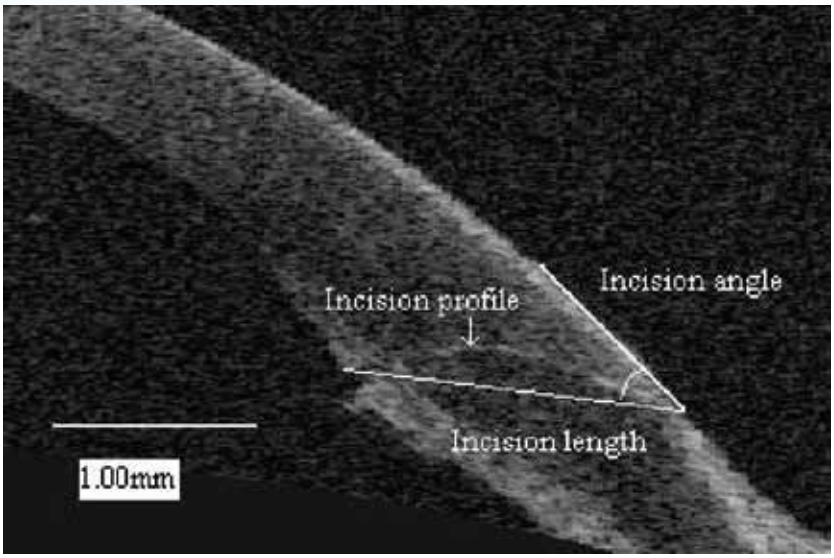

Figure 1. Anterior segment optical coherence tomography of temporal clear cornea phacoemulsification incision with a curved profile, showing incision angle and incision length.

Results

60 eyes of 60 patients were included in the study. The mean age of the patients was 66.2 +/- 7.3 years. The mean baseline intraocular pressure (IOP) was 15.1mmHg. There were 30 eyes in each group and there was no difference in proportion of cases and the two incision sizes amongst the 3 surgeons. There were no peri-operative complications including endophthalmitis.

For the main wound profile, 39 were flat, 21 curved. All side incisions were flat, with a mean incision angle of 40.11 +/- 5.56 degrees, and a mean length of 1.43 +/- 0.16mm. Table 1 shows the characteristics and squareness of the wounds between the two incision sizes.

Table 1.

	2.2mm CCI	2.65mm CCI	p-value
Wound characteristics			
Incision angle	36.01+/- 5.13°	36.28 +/- 6.08°	ns
Mean lengths	1.91 +/- 0.27mm	1.85 +/- 0.24mm	ns
Wound squareness			
Number of eyes (%)	13 (43.3%)	1 (3.3%)	<0.001
Mean squareness factor	0.87	0.7	<0.001
Descemet's detachment	8 (26.7%)	11 (36.7%)	ns

Wound gape and wound squareness

None of the side incisions had wound gape on ASOCT. For the main incision, 35 eyes (58.3%) had internal gape of <25% wound length at 2 hours, and at 96 hours 27 eyes (77.1%) still had gape. There were no leaks from the main incision, suggesting that a wound gape of <25% on ASOCT is not clinically significant, especially if the wound length is adequate. Secondly, the gape is partly due to a mismatch of anterior to posterior lips due to differential hydration, which wears off at 96 hours, and not a physical separation of the wound.

The mean wound squareness was 0.72 +/- 0.11 in eyes without gape, and 0.82 +/- 0.14 in eyes with gape ($p = 0.005$). The area under the receiver operating characteristic curve (AUC) was 0.709 ($p = 0.006$), suggesting a moderate correlation between wound squareness and gape. For a main incision squareness >0.84, the positive predictive value (PPV) of an internal gape was 84.2% and negative predictive value was 53.7%. This suggests that gape was more likely to occur in wounds with a squarer configuration in the early postoperative period. This was unexpected as square wounds are usually advocated for better integrity based on studies in cadaveric eyes. Although internal gaping was not found to be associated with lower IOPs or wound leaks in this study, creating a square wound may compromise the wound integrity in certain eyes secondary to instrumental oar-locking, resulting in micro-tears, stretching and thus, wound leaks.

Wound leak

There were no leaks from the main wound, however one side port leaked at 2h and 24h postoperatively and was sealed by 96h. This side wound had an incision angle of 34.9 degrees and a length of 1.39mm. Despite the leak, there was no gape at any time point on ASOCT, or any shallowing of the anterior chamber. The sequential IOPs (time points) were 10 (preop), 18 (2h), 18 (24h) and 12 (96h) mmHg. It is postulated, therefore, that a normal IOP does not rule out wound leakage, and that ASOCT is not a sensitive tool for demonstrating wound incompetence. The Seidel's test remains the gold standard for evaluating wound leak.

IOP

The mean post-operative IOP at 2 hours was 20.3 (range 9 –40mmHg. There were no cases of severe hypotony at any of the time points. The IOP was significantly higher at 2 hours in all eyes and at 24 hours in the eyes with a 2.65 mm wound or a hard cataract. At 96 hours the IOPs were significantly lower than the preoperative IOP readings for the 2.2 mm group or those with a soft nucleus. By one month, the IOPs had returned to baseline values in both groups. The IOP change or IOP at all time points was not correlated with the axial length nor wound squareness.

Descemet's membrane detachment (DMD)

Descemet's membrane detachment (DMD) at 2 hours was seen in 19 eyes (31.7%). Table 1 shows the DMD rates for both groups. By 96 hours, 9 eyes (47.4%) had reattached. There was no correlation between DMD and mean IOP.

Learning points

- Both the 2.2mm and the 2.65mm CCIs were clinically competent. Wounds with squareness of >0.84 was more prone to internal wound gape. Hence for a 2.2mm incision, the incision length should be between 1.72 to 1.85mm, and 2.07 to 2.23mm for the 2.65mmincision.
- A lower postoperative IOP is more likely to allow the wound to gape transiently than one with higher IOPs, therefore it is prudent to aim to leave the eye adequately pressurized postoperatively.
- ASOCT may not always be efficacious at evaluating postoperative wounds and leakage and careful clinical evaluation is still essential in detecting any leaks.

ANSWERS TO PHOTOQUIZ 15:

Möbius syndrome is a rare condition, characterised by paralysis of lateral gaze and facial diplegia resulting in a mask-like facies. Although traditionally considered simply as palsies of the sixth and seventh cranial nerves, electromyography and neuropathologic evidence indicate a more complex situation, with suggestions ranging from atrophy of cranial nerve nuclei, to aplasia of medial and lateral recti with replacement by fibrous bands. Variable associations include tongue hemiatrophy, head and extremity deformities, abnormalities of lower cranial nerves producing hearing, speech and swallowing difficulties, chest malformations and congenital heart defects.

Clinically, children can present with feeding problems due to their inability to suck, and their lack of facial expression is noted, especially when crying. Patients may have esotropia or straight eyes in primary position, and the abducens paralysis may be incomplete or asymmetrical. Adduction may also be limited; in some patients, adduction is better with convergence. However, vertical gaze and convergence are typically preserved. Occasionally, convergence may be used as a substitution phenomenon to "cross fixate" (i.e. the left eye adducts to look rightward, and the right eye adducts to look leftward).

Surgery may be useful in some patients with esotropia. Medial rectus recession in the absence of significant limitation of adduction, combined recess-resect procedure, or muscle transpositions have been advocated.

Figure 1. Facial diplegia resulting in a mask-like facies.

Figure 2. Bilateral lagophthalmos secondary to bilateral seventh cranial nerve palsies.

Figure 3. Significant limitation in left abduction.

Figure 4. Tongue hemiatrophy.

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QUESTION TO PHOTOQUIZ 16:

A 47-year-old gentleman presented with decreased left visual acuity for a few years. What is the diagnosis?

Figure 1. Left fundus photograph

Figure 2. Optical coherence tomography (horizontal section) of left macula

Please send your entries to: cmenewsletter@snec.com.sg or fax to: (65) 6226 3395 Attention: CME Newsletter Secretariat. Winners will each receive a 1GB thumbdrive and will be notified by post. The answers will be published in the next issue.

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