Selected Abstracts from the OAA 64th Annual Scientific Conference, held in Perth, 25 - 28 November 2007

PERSON CENTRED CARE AND ORTHOPTICS PRACTICE

Catherine Devereux
Council of Ageing

The Enhancing Practice Program is funded by the Department of Human Services, Victoria and delivered to a wide range of staff in 10 health services around Victoria. In a multidisciplinary environment the teaching in this "change management" program is conducted over 4 two-hour interactive sessions. The program encourages health workers to strengthen their practice and increase awareness of ageing, ageist attitudes and person centred care. In this presentation the key messages of the Enhancing Practice Program will be outlined and applied to Orthoptic Practice

WHERE ARE WE NOW IN GENETIC EYE DISEASE?

Lisa S Kearns, AW Hewitt, JB Ruddle, S Staffieri, C H Wilkinson, LW Scotter, CR Swanson, DA Mackey
Clinical Genetics Research Unit, Centre for Eye Research Australia

New gene discoveries and improvements in laboratory techniques have led to significant advances in the genetics of all diseases (and traits) including those affecting the visual system. With the availability of highly co-ordinated genealogical and genetic information from research studies we are now able to provide many individuals with information on the specific genetic mutation running in the family. Genetic testing is becoming more available and with laboratories offering a large bank of gene tests for hereditary eye diseases many patients choose to pursue this service. Recent developments in genetic eye disease will be discussed and how genetics is increasingly becoming part of clinical practice and affecting how eye care professionals understand, diagnose and manage diseases.

DOES TRUMPET PLAYING CONTRIBUTE TO GLAUCOMA: CASE REPORT

Fleur O'Hare, Jonathan Crowston, Angus Turner
Glaucoma Investigation and Research Unit, Centre for Eye Research Australia

A 79 year old gentleman was referred to our private clinic for an opinion regarding future management. Despite responding well to topical medication his glaucoma was progressing. His identified risk factors for glaucoma included treated hypertension, a history of migraine and transient ischaemic attacks.

It was noted that this patient was a keen trumpet player and had been playing regularly for 50 or more years. Increased IOP and visual field defects, in high resistance wind instrument playing, has been reported in the literature.

Serial IOP and HRT measurements were recorded in this patient whilst he was playing his trumpet. Peak IOP was noted at 36mmHg. Full clinical findings will be presented. In addition the mechanism behind the transient elevation in IOP will be discussed. This case report supports the finding that long term trumpet playing may be a risk factor for glaucomatous damage.

ARE CLINICAL MEASURES GOOD INDICATORS OF PERFORMANCE OF DAILY ACTIVITIES?

Natalia Dawson, Kerry Fitzmaurice
Department of Clinical Vision Sciences, La Trobe University

Purpose: The aim of the study was to identify whether clinical measures of visual acuity and contrast sensitivity were good indicators of performance of daily tasks in vision-impaired school aged children.

Methods: 22 participants, (11 fully sighted and 11 vision-impaired children), aged 5 to 15 years. Clinical measures were distance acuity assessed by LogMAR chart and contrast sensitivity measured by Vistech grating contrast sensitivity. Colour vision was also assessed using Ishihara plates as a control. Performance of visual function was assessed by completion of one of two modified Visual Acuity Questionnaires (VAQ) Sloan 1992. This questionnaire measures self-perceived level of difficulty in undertaking specified activities graded on a five-point Likert scale. Results of clinical measures were correlated against VAQ scores.

Results: Vision impaired participants reported greater difficulty performing VAQ visual functions than sighted participants. There was an overall trend of a weak to moderate positive correlation between visual acuity and difficulty in performing daily activities measured on the VAQ and a weak to moderate negative correlation between contrast sensitivity and performing daily activities measured on the VAQ.

Conclusion: Data from this study indicated that visual acuity and contrast sensitivity were weak indicators of general performance of visual function. Whilst this represents pilot data the trends demonstrated were similar to others reported in the literature. Further investigation should be undertaken in this domain of low vision, as many intervention programs are directed by clinical measures.

FACTORS ASSOCIATED WITH THE POST-OP RECURRENCE OF ESOTROPIA

Connie Koklanis, Zoran Georgievski, Nicole Mocnay
Department of Clinical Vision Sciences, La Trobe University

Aims: To investigate the effect of various factors on the outcome of esotropia surgery in both infantile esotropia and early acquired esotropia.

Methods: The medical records of 450 patients who underwent surgery for esotropia at the Royal Children's Hospital from June 1998 to September 2001were reviewed. Of these, 231 patients met the inclusion criteria. Data concerning the patient's angle, age of onset and surgery, refraction, presence of associated findings or conditions, and type of surgery were recorded from the medical records.

Results: The success rate for esotropia surgery was found to be 32.4%.The age of onset of the esotropia, age at first surgery, angle at presentation and the presence of inferior oblique overaction significantly affected the surgical outcome. Furthermore, the presence of DVD, convergence excess, and astigmatism were all approaching significance. All other factors were found to have no effect on surgical outcome.

Conclusion: Based on the results of this study, one surgery is often insufficient in fully correcting an esotropia. Our study has found that various factors appear to influence the surgical outcome. A prospective trial is required to further investigate these findings.

INTERPRETATION OF FUNDUS FLUOROSCEIN ANGIOGRAPHY

Manisha Ghai
Vision Group

Fundus fluorescein angiography is the gold standard imaging technique in routine clinical practice. This presentation will review the principles of fundus fluorescein angiography. Fluoroscein angiography interpretation will be discussed. Clinical cases requiring fluorescein angiography assessment are presented. Moreover, ocular disease treatment and management based upon fluorescein angiography clinical findings will be discussed.

SYDNEY PAEDIATRIC EYE DISEASE STUDY (SPEDS): PRELIMINARY DATA

Shahrimawati Sharbini, Kathryn Rose
Discipline of Orthoptics, Faculty of Health Science, University of Sydney.

Purpose: To determine the prevalence of eye disease in children aged from 6 months to 6 years in Sydney, Australia.

Methods: The Sydney Paediatric Eye Disease Study is a cross-sectional population-based sample from two geographically separated postcodes in the greater metropolitan area of Sydney. Based on Australian Bureau of Statistics data (2001 Census), postcodes identified for inclusion had a population of more than 1500 children less than 6 years of age and the percentage of children was greater than 8%. The first postcode chosen is 2763 for the suburbs of Quakers Hill and Acacia Gardens in the North West of Sydney and the study commenced in late 2006. All households in the postcode received leaflets by post informing them of the study's purpose. This was followed by a visit from a study interviewer. All households were enumerated and details of eligible children's ages and contact information was obtained. Families were progressively invited to participate in the study by means of an information and consent letter sent to them by post, followed by a phone call to confirm their participation and allocate them an appointment time. A house within the postcode has been converted in to a clinic where all the testing is done.

Results: All children undergo a comprehensive eye examination. This includes: age appropriate vision tests, with and without optical correction if any. Cover test, prism cover test, ocular movements and convergence are performed A 15Δ test and stereoacuity tests (Langs II, Randot Pre-school and/or Stereo Smile) are used to assess binocular function. Colour vision (Waggoner) is only recorded for the children more than 30 months old. Pupils are assessed for RAPD, Bruckner's reflex and iris colour. Blood pressure and anthropometry are also obtained. Cycloplegic retinoscopy is performed using either the Canon autorefractor, Retinomax or by streak retinoscopy. Ocular biometry is measured by IOL Master in children aged more than 30 months. Slit lamp examination or loupe and a fundus examination ensues. Retinal photography is attempted on all children aged 3 years and older.

Conclusions: At present 800 children have been assessed and the study is aiming to test approximately 3000 children from two chosen postcodes. Preliminary analysis of data indicates a range of eye diseases being detected in the study population and that the rate of eye disease is higher than has been found in previous school-based studies.

AN OVERVIEW OF CONTACT LENS USE IN INFANTS AND YOUNG BABIES. OUR EXPERIENCES AT THE CHILDREN'S HOSPITAL AT WESTMEAD EYE CLINIC

Stephanie Sendelbeck
The Children's Hospital Westmead

A retrospective review of patients attending the Children's Hospital at Westmead Eye Clinic who required contact lens correction for aphakia or high refractive errors. Patients included had aphakia secondary to congenital cataracts and PHPV, and both high myopia and high hypermetropia were included in the review. Methods for fitting of the contact lens, teaching insertion, compliance with wear and visual outcomes are discussed.

PUPILLOGRAPHIC MULTIFOCAL VISUAL FIELD ASSESSMENT FOR GLAUCOMA

Maria Kolic, T. Maddess, A.C. James.
ARC Vision Science Centre of Excellence, Australian National University

Purpose: To investigate the sensitivity and specificity of 10 variants of multifocal pupillographic perimetry in glaucoma.

Methods: Ten stimulus protocols were examined in two blocks of experiments. Block one contained 22 normal and 23 glaucoma subjects; block two: 20 normal and 20 glaucoma subjects. All subjects were examined with HFA achromatic, SWAP and Matrix 24-2 perimetry, Stratus OCT, slit lamp and tonometry. Informed written consent was obtained from all subjects under ANU ethics approval 238/04. In all protocols multifocal stimuli were presented concurrently to both eyes with a dartboard layout, having 24 independent test regions/eye extending to 30 deg eccentricity. The test recording duration for each of the 10 protocols was 4 minutes, divided into 8 segments. Stimuli in each protocol could differ in the presentation rate per dartboard region (0.25, 1, 4 presentations/s), stimulus duration/presentation (66, 133 or 266 ms), flicker rate on each presentation (0, 15, or 30 Hz) or luminosity (80, 150 and 290 cd/m^2). Background luminance was 10 cd/m^2. 48 responses/eye were obtained giving 96 contraction amplitude and 96 delays.

Results: The mean simultaneously highest sensitivity and specificity, 95.5%, was obtained with a linear discriminant models containing amplitude and delay for the stimulus 290 cd/m^2, 66 ms, and 30 Hz flicker.

Conclusions: This study indicates higher presentation and flicker rates combined with higher luminance stimuli can yield sensitivities and specificities around 95% for test durations equivalent to 2 min/eye.

CAN MYOPIA BE PREVENTED

Kathryn Rose
Discipline of Orthoptics, Faculty of Health Sciences, University of Sydney

Purpose: In the last thirty years the primary aim of myopia research has been to find a method of preventing myopia and its progression. This endeavor was give impetus by the rapid rise in the prevalence of myopia in urban centres in East Asia. While this rapid rise posed a significant health problem for the countries affected, it also implicated changes in environment in having a significant role in the development of myopia. The Sydney Myopia Study aimed to assess the relationship of range of lifestyle factors, with the prevalence of myopia in school-aged children.

Methods: The Sydney Myopia Study is a cross-sectional study of two age samples from 55 Sydney schools, selected using a random cluster design. A total of 4,132 children from either Year 1or Year 7 of school, participated from 2003-2005 (participation rate 78.9% and 75.3% respectively). Children had a comprehensive eye examination, including cycloplegic

refraction and measures of ocular biometry using the IOLMaster (Ziess). Parents and students completed separate questionnaires on activities outside school hours. Myopia was defined as spherical equivalent ≤ -0.5D in at least one eye.

Results: The mean refractive error at mean age 6.7 years (n= 1740) was + 1.26D (95% CI, 1.19-1.33) and at mean age 12.7 years (n = 2367) it had become less hyperopic (+0.49D; CI, 0.27-0.71). Myopia prevalence in Year 1 students was 1.5% and in Year 7 12.8%. In the Year 7 students higher levels of outdoor activity (including sport and leisure activities) were associated with more hyperopic refractions and lower myopia prevalence. Students who combined high levels of near-work with low levels of outdoor activity had the most myopic mean refraction (+0.27D; CI, 0.02-0.52), while students who combined low levels of near-work with high levels of outdoor activity had the most hyperopic mean refraction (+0.56D; CI 0.38-0.75). After adjusting for near-work, parental myopia and ethnicity, the lowest odds ratios for myopia were found in groups reporting the highest levels of outdoor activity. There were no associations between indoor sport and myopia.

Conclusions: The prevalence of myopia in Sydney was lower than in age-matched peers in urban East Asia and other countries. Outdoor activity was negatively associated with myopia and may be protective for the development of myopia. The benefit of this protective effect may only be relevant for children who are still within the hyperopic phase of refractive development.

WE KNOW ABOUT SKIN - HOW ABOUT EYES? MINIMIZATION OF SUN RELATED DAMAGE TO AUSTRALIAN CHILDRENS' EYES.

Sue Silveira
Discipline of Orthoptics, Faculty of Health Sciences, University of Sydney

It is well recognised that a link exists between sunlight exposure and disease. Public campaigns have been in existence for many years in Australia aimed at encouraging people to protect themselves from the sun. However, this has mainly focussed on skin protection, with little emphasis on the importance of also protecting the eyes. A dilemma exists in reaching a balance between preventing disease related to sun exposure versus preventing disease relating to lack of sun exposure. Recently the need to minimise sunlight exposure in children's eyes has been highlighted, as technology has begun to foster an understanding of the presence of sun damage in the eyes of Australian children. Other research has shown a negative relationship between outdoor activity and the incidence of myopia, i.e. there is a suggestion that outdoor activity may offer some protection from myopia in children. Lack of sun exposure poses a further potential health hazard, with a link to vitamin D deficiency disorders such as rickets.

So how do we best protect children's eyes to prevent disease linked to lifelong sun exposure without compromising their outdoor activities and placing them at risk of disease related to sun avoidance? This presentation will outline briefly the nature of vision impairment in our ageing population; the link between sunlight exposure and eye disease and possible preventative strategies that can be implemented to offer increased protection to Australian children's eyes. The need for research in this area will also be highlighted.

PREVALENCE OF HETEROPHORIA IN AUSTRALIAN SCHOOL CHILDREN

Jody Leone, Kathryn Rose
Discipline of Orthoptics, Faculty of Health Science, University of Sydney.

Purpose: Establish the prevalence of heterophoria and its relationship with refractive error in school children.

Methods: The Sydney Myopia Study is a population-based stratified random cluster sample of 4107 students from 55 primary and secondary schools. Of these, 1692 Year 1 students (mean age 6.7 years) and 2289 Year 7 (mean age 12.7 years) who had no strabismus or vertical heterophoria were included in this analysis. As part of a comprehensive eye examination, cycloplegic auto-refraction, cover/uncover, alternate cover test and prism bar cover tests at near (33cm) and distance (6m) fixation were performed.

Results: For near fixation, exophoria was highly prevalent (Year 1: 58.3%, Year 7: 52.2%). For distance fixation, orthophoria predominated (Year 1: 85.4%; Year 7: 90.9%). There was a significant association between near heterophoria and refractive error in both the Year 1 ($p=0.0296$) and Year 7 students ($p<0.0001$). Children with hypermetropia >+2.00D were more likely to be esophoric at near (Year 1: OR 1.7, CI 1.1-2.8; Year 7: OR 2.9, CI 1.7-4.8), and in Year 7 those with myopia were more likely to be exophoric (near: OR 2.1, CI 1.5-2.7; distance: OR 3.1, CI 2.1-4.4) than children without significant refractive error. Myopia and esophoria were rarely associated at near (Year 1: 0.06%; Year 7: 0.6%).

Conclusions: While orthophoria for near has been more commonly reported in studies of children of comparable age, we found a high prevalence of exophoria at near. Consistent with other studies, we found that esophoria was rare. The predominance of orthophoria for distance fixation for both age groups indicates a possible biological process of orthophorization, that is, an active mechanism for guiding heterophoria for distance fixation towards orthophoria.

REFRACTIVE OUTCOMES OF TORIC INTRAOCULAR LENSES

Amanda Marini, Stephanie Goodwin
Sydney Eye Specialist Centre

A study of over 100 eyes implanted with Toric IOL's was conducted earlier this year. The criteria for IOL and patient selection, along with the pre and post operative results of these implants will be discussed. Several case studies will also be high lighted illustrating the refractive outcomes of using such lenses.

CATARACT SURGERY. A CURE FOR AMBLYOPIA? A CASE STUDY.

Sally Turner
Sydney Eye Specialist Centre

Conventional visual solutions for patients with extreme anisometropia are limited. Orthoptics and patching in childhood, and intolerable glasses as a teenager, left a patient who had been seeking visual improvement her whole life, virtually without hope. Until at age 44 she developed a cataract. This case and the resulting benefits will be discussed.

IMPROVEMENT IN VISUAL FUNCTION FOLLOWING CATARACT SURGERY

Meri Vukicevic, Lara Freijah
Department of Clinical Vision Sciences, La Trobe University

Visual acuity is the traditional method of determining the success of cataract surgery and good outcome is defined as vision of 6/12 or better.Most patients are able to achieve this (Desai, 1993). However, the definition of a "good visual outcome" is relative, especially when patients present for surgery with VA of 6/12 or better (Haynes et al. 1999). In addition, the limitation of visual acuity measures for determining visual function are widely acknowledged (Bernth-Petersen, 1981; Abrahamsson et al, 1996; Elliot et al, 1990; Lundstrom et al, 1994). Consequently, several tools have been developed to assess visual function of patients after cataract surgery. All of these tools are questionnaires and the VF-14 (Steinberg et al, 1994) appears to be most widely used. As with all questionnaires, the patient is asked to rate their performance on a scale and an answer is always required. Patient's ability to always correctly rate their ability may not be accurate and is subjective.

The Melbourne Low Vision Activities of Daily Living Index (MLVAI) (Haymes et al, 1999) was developed in Australia to assess visual function in terms of ability to perform daily living tasks. It comprises an objective measure of visual performance where a patient is observed performing a task, in addition to a questionnaire.

The aim of this study was to measure visual function pre and post cataract surgery using the clinical measures in addition to tests of visual function. A comparison of both the MLVAI and VF-14 were conducted to determine if one is more sensitive than the other to changes after cataract surgery and results will be presented.

HE SEES, SHE SEES: AN ANALYSIS OF GENDER DIFFERENCES IN VISUAL SCANNING TO EMOTIONAL FACIAL EXPRESSIONS

Suzane Vassallo[1], Sian Cooper[1], Jacinta Douglas[2]

1 Department of Clinical Vision Sciences, La Trobe University

2 School of Human Communication Sciences, La Trobe University

The ability to interpret facial expressions is a fundamental form of non-verbal communication. It has been shown that when interpretation of facial affect is poor, social integration is diminished as is the forming of interpersonal relationships with others (e.g., Knox & Douglas, in press; Watts & Douglas, 2006). The literature suggests that females outperform males in judging emotional facial expressions, at least for certain emotions, however the visual scan path employed in the viewing of facial expressions has not been explored for gender differences. The visual scan path is a direct measure of visual attention (see Noton & Stark, 1972). It describes the 'path' taken by the eyes to extract visual information from the stimulus being viewed. It is made up of a series of saccades which are interspersed by periods of fixations during which time detailed visual information is acquired via the fovea. The normal scan path to human faces encompasses fixations directed to the eyes, nose and mouth, with little (if any) viewing time spent on other facial areas (e.g., the chin). In order to determine whether the visual scan path employed by males and females differ, normal healthy males and females aged between 18 – 44 years were recruited for this study. Subjects were shown a series of evoked static facial expressions on a computer monitor – these were happy, sad, surprised, angry, anxious and disgusted faces taken from the Matsumoto & Ekman (2004) facial set. While viewing each face, participants' eye movements were recorded using the Tobii 1750 infrared eye tracker. The groups were compared with respect to accuracy in naming the facial expression, reaction time (time taken to view each face), number of fixations and duration of fixation to a given area of interest. The findings will be discussed.

WHAT ARE THE VISION-BASED DRIVING HABITS OF SENIOR DRIVERS WHO MEET THE LICENSING VISION STANDARD?

Nathan Clunas, Neryla Jolley
Discipline of Orthoptics, Faculty of Health Sciences, The University of Sydney

Driver licensing is constantly under review with the role of the medical practitioner having an ever-increasing responsibility. Recent problems in New South Wales have focussed on accidents involving senior drivers and previous research has shown that ageing is accompanied by significant declines in visual function. This paper aims to report on the visual responses and driving behaviours of 80 drivers between the ages of 60 & 85 who meet the Austroads criteria to address the question – are drivers who meet the vision criteria visually safe when driving?

The paper addresses the characteristic responses of 80 senior drivers (30 females, 50 males) who held a full driver's license and met vision-based criteria. Each participant undertook an off and on-road assessment by a multi-disciplinary team. Participants were shown to have a range of binocular visual acuity at 6m between 6/4 and 6/9 part. Binocular visual fields in 38% of cases showed a response that was decreased but within licensing standards. More in-depth tests of sensory function (contrast sensitivity and stereopsis) showed a decreased response. Drivers reported decreased comfort when driving at night and were observed to have habits when driving that impacted on safety.

Vision behaviours whilst driving demonstrated a range of responses, indicating poor use of the driving environment. Of particular note is the minimal blind spot checking to both right and left sides, and decreased emphasis on looking to the left. This would suggest a need to educate senior drivers about appropriate vision behaviours to ensure their safety and support their continued assessment.

WHY THE WORLD NEED ORTHOPTICS - TWO CASES THAT HIGHLIGHT ORTHOPTIC EXPERTISE AND THE DIFFERENCE IT CAN MAKE TO PATIENT OUTCOMES

Sue Silveira
Discipline of Orthoptics, Faculty of Health Sciences, University of Sydney

Numerous eyecare professionals investigate and manage patients with strabismus and ocular motility conditions. Orthoptists are traditionally the experts in this area, providing knowledge and skills which positively influence the outcome for the patient. Two unusual strabismic patients who had improved outcomes from orthoptic advice and management will be presented to highlight the continuing need for this expertise.

SNORING... IS IT JUST AN IRRITANT TO THE EARS?

Shandell Moore, Linda Malesic
Department of Clinical Vision Sciences, La Trobe University

Purpose: The main aim was to collect pilot data (IOP, CCT, automated perimetry & retinal vasculature) in individuals who snore and to determine if these measures differ when compared to an age and gender-matched control group of non-snorers. The affect of gender on these measures was also investigated. A second aim was to determine if there was a greater variability in the diurnal variation of IOP and CCT in the group of snorers and investigate whether the relationship between IOP and CCT is a dependant one.

Methods: The snoring group consisted of 12 participants (6 males & 6 females, mean age=53.8 years ±4.2) and the non-snoring group comprised 10 participants (6 males and 4 females, mean age=55.2 years ±4.3). Allocation of participants into each group (experimental or control) was determined by the Snoring Systems Inventory (SSI) questionnaire. Testing including IOP, CCT, fundus photography and automated visual field measurements with both white-on-white and blue-on-yellow programs on all participants. Participants were tested at two different times on a given day (8am & 4pm). Repeated testing allowed for diurnal variation assessment of IOP and CCT. Fundus photographs were analysed by a trained retinal grader who determined arteriolar and venular diameters for both groups.

Results: The mean IOP at 8am for the snoring (14.8mmHg ±1.3) and control (15.2mmHg ±1.4) groups were not statistically different ($p = 0.53$). There was a statistically significant difference between the IOP measurements taken at 4pm in the snoring group (14.0mmHg ±0.7) when compared to the control group (12.5mmHg ±1.9) ($p= 0.04$). There was no significant difference between morning (snorers = 568.5μm ±11.6 & control = 561.2μm ±31.6) and afternoon (564.6μm ±15.4 & 557.6μm ±26.6) CCT measurement in either group (AM $p= 0.46$ and PM $p=0.45$). Vascular thickness, both central retinal arteriolar equivalent (CRAE) and central retinal venular equivalent (CRVE), were thinner on average in snorers when compared to the control group (snorers CRAE = 124.5 ± 41.9 & control =144.7 ± 14.3; snorers CRVE=183.9 ± 63.4 & control=211.9 ± 28.7).

However, this was not statistically significant in either group ($p = 0.14$ & 0.20 respectively). Visual field results were categorized via the Glaucoma Staging System to compare if white-on-white results differed to that of the blue-on-yellow program. This was not significant in either group; both programs were equally sensitive in identifying early field changes.

Conclusion: Snorers demonstrated higher IOP measurements in the afternoon when compared to the control group and less diurnal variation between the AM and PM measures; however these were not alarmingly suspicious. The non-significant diurnal variation between CCT in both groups is suggestive of IOP varying independently to CCT as well as implying that a single CCT measurement would suffice in a clinical setting. As the CRAE and CRVE were found to be thinner in the snoring group a study involving a larger co-hort of snores (severe, moderate & mild categories) is required to better determine if this sleep breathing disorder is a potential risk factor in the development of low-tension glaucoma.

BAD EYE GENES. EXTREME MYOPIA AND THE REST

Ana Alexandratos
Sydney Eye Specialist Centre

Solving extreme myopia in ageing patients who are becoming HCL's intolerable and can be a challenge. A series of ocular problems and declining vision are discussed in this case history. Implantation of the Human Optics Lens was a solution for this patient.

HISTORY TAKING AND PRE-OPERATIVE ASSESSMENT IN VITREO-RETINAL SURGERY

Manisha Ghai
Vision Group

Orthoptists these days in retinal clinical setting are dealing with sophisticated technology such as OCT, fundus photography but good and precise history is very crucial in the diagnosis and management of patients with vitreo-retinal disorders. The presentation will discuss various aspects of history taking and pre-operative assessment in retinal disorders. This presentation will provide a brief overview of how to obtain precise and useful information while conversing with the patients.

Discussion will include - asking the right questions, indications for Vitreo-Retinal surgery, history taking (General, Ocular, Family, Systemic), assessment (Adnexa, Anterior Segment, Fundus assessment) and the role of the Orthoptist.

EYE MOVEMENTS FOLLOWING BONE CONDUCTED SOUND - A DIAGNOSTIC TEST FOR VESTIBULAR DYSFUNCTION?

Elaine Cornell
Discipline of Orthoptics, Faculty of Health Sciences, University of Sydney

Bone conducted vibration (BCV) of the head activates vestibular as well as auditory receptors and also results in small but reliable eye movement responses and evoked muscle potentials in guinea pigs and in human observers.

In a previous study it was shown that the evoked potentials were present in healthy subjects and in a subject who was profoundly deaf but had preserved vestibular function, but they were bilaterally absent in a subject with gentamicin vestibulotoxicity, confirming that they are primarily vestibular, and probably otolith induced.

There has been limited research on the characteristics of the eye movements involved in these responses. The purpose of this study was to compare the responses of each eye to BCV delivered at the mastoid and the effect of gaze position on these responses, and possibly to identify the extraocular muscles involved. The outcomes of this research may provide a simple test for vestibular dysfunction as well as add to our knowledge of the neural pathways for vestibular induced eye movements.

THE VERBAL COMMUNICATION OF ORTHOPTISTS

Irina Sim, N. Jolly, I. Sim, K. Pepper, R. Heard.
Discipline of Orthoptics, Faculty of Health Sciences, The University of Sydney

Purpose: Verbal communication is an essential part of the medical consultation and defines, reflects and distinguishes the roles of professional bodies in the health care industry. The study aimed to provide a preliminary comparison between the verbal skills of orthoptists with other health practitioners and investigate the effects of patient qualities and experience of orthoptists on the verbal interaction during a consultation.

Methods: 12 orthoptists and 49 patients were recruited from 3 private ophthalmic practices in metropolitan New South Wales. The duration of orthoptic tasks and verbal skills were coded into 13 categories in real time and analysed

Results: Orthoptists were found to use high levels of explanation, information and rapport that increased with experience. Patient qualities such as their cultural background and if visiting the clinic for initial or return visits did not demonstrate an effect on the duration of individual tests performed or verbal skills recorded.

Conclusion: This study has shown that orthoptists have demonstrated verbal skills that reflect the role of a primary health care practitioner as an allied health professional. The level of experience has more impact on the verbal skills used by the orthoptist than patient. More in depth research into the dynamics of the orthoptist-patient relationship should be carried for quality improvement purposes and its effects on patient compliance and patient adherence to ocular treatment and therapy.

PHOTOTOXIC MACULOPATHY ASSOCIATED WITH WELDING: A CASE STUDY

Meri Vukicevic
Department of Clinical Vision Sciences, La Trobe University

Phototoxic maculopathy can result from overexposure to light from several sources including: the sun, halogen lamp filaments, operation microscopes and also from welding arcs. A welding arc emits ultra violet and infra red wavelengths of light and the ultra violet emissions can cause phototoxic maculopathy when prolonged light exposure damages the photoreceptors and retinal layers. It has been reported that young apprentice welders are most at risk of retinal injury caused by an arc welder due to their vocational inexperience combined with clear ocular media. The case of a 21 year old male with phototoxic maculopathy directly resulting from arc welding will be presented. His residual symptoms almost 4 years after the date of his injury will be reported, including results of tests relating to visual acuity, stereopsis, colour vision, visual fields and contrast sensitivity.

WHAT IS THE DIFFERENCE BETWEEN THE DIFFERENT TYPES OF DIVERGENCE EXCESS INTERMITTENT EXOTROPIA

Thong Le, Z Georgievski, C Koklanis
Department of Clinical Vision Sciences, La Trobe University

The classification and management of intermittent XT relies on an accurate measurement of the accommodative convergence to accommodation (AC/A) ratio. However, an accurate measurement also relies on the patient

exerting or relaxing an appropriate amount of accommodation during the AC/A ratio measurement. It is well known that the detail of a target can influence the level of a patient's accommodation and subsequently the size of their deviation. Despite this, to date no study has investigated the effect of different fixation targets on the AC/A measurement in patients with intermittent exotropia. This study aimed to investigate the effect of different fixation targets on the near angle of deviation measurement and AC/A ratio in patients with intermittent exotropia of the divergence excess type. The incidence of a high AC/A ratio was also investigated.

Twenty-eight participants identified as having intermittent XT were included in this study. The size of each participant's deviation was measured with a prism cover test at three distances before and after occlusion. After occlusion, the deviation at near was also re-measured through plus lenses using two different targets, that of a butterfly and a N5 print target. The gradient method was employed to measure the AC/A ratio of each participant. A t- test was used to investigate the difference, between firstly the deviation measured through plus lenses at near with the different targets and secondly, if this resulted in a significant difference in the AC/A ratio measurement.

This study found there was a statistically significant difference between the two targets used when measuring the deviation, $t(54.00)=2.91$, $p=0.005$. On average, the deviation measured was 8.8Δ larger with the with the N5 print. This also resulted in a statistically significant difference between the two targets when measuring the AC/A ratio ($t(54.00) = -5.139$, $p<0.001$). The mean AC/A ratio was 3.4Δ:1D with the butterfly target as compared to 6.4Δ:1D with N5 print. A large majority of participants (71.4%) were discovered to have a high AC/A ratio. However, 10 participants were reclassified (e.g. from normal to high) and 4 participants were re-diagnosed from having a true to a simulated intermittent XT of the divergence excess type. The results of this study illustrate how the choice of fixation target can result in incorrect AC/A ratio measurement leading to incorrect diagnoses which can have negative implications on patient management.

ORTHOPTIC WORKFORCE SURVEY 2006 - RESULTS

Sue Heathcote Wendy Holland, Val Tosswill
Orthoptic Association of Australia

The 'Orthoptic Workforce Survey 2006' was distributed to Orthoptists throughout Australia and overseas to obtain up-to-date information on Orthoptists' demographics, qualifications, association memberships, current work status, workplace practices and continuing professional education. There was a total of 234 respondents who have provided valuable information for both the Orthoptic profession and the OAA Inc. Results will be presented along with comparisons with previous surveys and discussion of key areas that can be acted on to further our profession and association.

AN OPPORTUNE TIME FOR PROGRESS: THE IMPACT OF LEGISLATIVE CHANGE ON MODELS OF EYE CARE

Zoran Georgievski
Department of Clinical Vision Sciences, La Trobe University
Northern Health

The legislative changes in Victoria that saw orthoptists be allowed to prescribe glasses this year have created opportunity for our profession. As service frameworks for the delivery of eye care continue to change, our profession is required to respond to the challenge of fitting within new models of care, with the possibility of providing leadership in eye healthcare structures.

A profession must change or evolve if it is to remain relevant to the community, and indeed, in order to be efficient and be able to compete for the health care dollar. Governments and hospitals, like businesses, are seeking increasing efficiency (more for their money!), better / smarter ways of practice (more for their money!), as well as high standards of health care (more for their money!) as expected by the public.

In this presentation, new models of care in an ophthalmology / orthoptic hospital outpatient setting (Northern Health) will be presented, with some opportunity for discussion.

EYE HEALTH CARE PROVISION AT THE ROYAL CHILDREN'S HOSPITAL

Connie Koklanis
Department of Clinical Vision Sciences, La Trobe University
Department of Ophthalmology, Royal Children's Hospital, Melbourne

Eye health care services are predominately ambulatory with a large proportion of eye disease being managed on an outpatient basis. Hospitals are facing increasing demands on their clinical service which is translating into long waiting list for outpatient appointments. Over several years the Royal Children's Hospital in Melbourne, as the key provider of public specialist paediatric ophthalmology services in Victoria, has had a dramatic increase in the number of referrals it receives and the numbers of patients it reviews per year. To assist in managing this increase in demand, a new orthoptist led model of care was recently introduced at the Royal Children's Hospital. The model of care and preliminary outcomes will be discussed in this presentation.

STUDENTS, GRADUATES AND OCULAR MOTILITY SKILLS

Sue Silveira[1] **, Zoran Georgievski**[2] **, Connie Koklanis**[2]
1 Discipline of Orthoptics, Faculty of Health Sciences, The University of Sydney
2 Department of Clinical Vision Sciences, La Trobe University

For many years the clinical education of orthoptic students has been strongly supported by a group of highly committed orthoptists working in the field. Curriculum requirements dictate that orthoptic students gain clinical experience and competency in a broad range of specialised practice areas, to prepare them for a workforce that expects a highly skilled practitioner.

Academics are continually challenged with increasing student numbers and static or diminishing clinical locations which can provide specialised practice experience. Also, the availability of clinical in these areas is often determined by professional trends. One such area is the investigation and management of strabismus patients.

A questionnaire that will aim to determine current practitioner's level of confidence and experience in strabismus will be discussed. This questionnaire will be used to facilitate discussion regarding the orthoptist's role in this area and to develop strategies for continuing clinical education of orthoptic students in strabismus.

EDUCATIONAL FRAMEWORKS: IS HOSPITAL BASED TRAINING BETTER THAN UNIVERSITY?

Kerry Fitzmaurice
Department of Clinical Vision Sciences, La Trobe University

Whilst innovation in teaching has been a commonplace phenomenon in the primary and secondary education domains for some 50 years the tertiary education sector has been much slower to consider pedagogy and the impact on student learning. This paper will present a discussion of the change in focus from teaching to learning and the impact of this on teaching methodology. The implication of appropriate selection of learning paradigms to developing good practioners will also be discussed.

NEW LA TROBE COURSE TO COMMENCE IN 2009

Zoran Georgievski, Linda Malesic
Department of Clinical Vision Sciences, La Trobe University

In line with a complete over haul of Health Sciences teaching and learning at La Trobe University, the current undergraduate qualification degree in orthoptics is being reviewed. As of 2009, we will commence an undergraduate Bachelor of Health Sciences / Masters of Orthoptics double degree program. This course will have a 'common' first year that will involve all students enrolled in the allied health science programs, with the introduction of ophthalmic and orthoptic sciences along with more advanced human biosciences from the second year. The new program will adopt the most current and relevant teaching strategies (e.g. enquiry based learning), including the use of IT / media technology. The clinical teaching will be undertaken in the latter part of the course once the theory and practical skills have been introduced. The style of clinical teaching will be similar to an intern year - students will be placed in clinical schools linked to large public hospitals or private ophthalmology practices that will have strong support from the University. With the commencement of a Masters level qualification, we anticipate and will strive for a high calibre graduate that will be well equipped to deal with the challenges that face the orthoptic profession presently and in the future.

MASTER OF HEALTH SCIENCE AT SYDNEY UNIVERSITY FOR PRACTICING ORTHOPTISTS

Nathan Clunas, Neryla Jolly
Discipline of Orthoptics, Faculty of Health Sciences, The University of Sydney

In 2008 Post Graduate studies will be available for Orthoptists who are eligible to register with the Australian Orthoptic Board. The course is in the field of Health Sciences and is offered in 2 forms:

1. Graduate Certificate of Health Sciences which has four units of study (6 credit points each unit)

2. Masters of Health Sciences which has 8 units of study (6 credit points each unit)

Each course can be studied on a part time or full time basis and each unit of study will involve a range of teaching methods including distance web based sessions, block mode sessions for intensive theory and on site practical sessions.

Students will be required to study 2 core units such as Health Care Systems and Research & Inquiry in Health Professions. The remaining units can be Orthoptic specific units or from other discipline areas eg Gerontology.

The units of study in the discipline area of Orthoptics are: a, refraction practice, b. peri operative practice, c. vision and driving,d. advanced ocular motility, e. vision impairment, f. current issues in ophthalmology

This paper will present detailed information about the proposed courses and seek discussion about the implementation.

DIABETIC RETINOPATHY SCREENING IN WESTERN AUSTRALIA

Chris Barry
Lions Eye Institute

Diabetes and Diabetic Retinopathy screening has been a feature of ophthalmology in rural and remote Western Australia since 1978. With the introduction of the non-mydriatic retinal camera in the mid 1980s, Aboriginal Medical Workers were trained to use the Polaroid retinal cameras and results sent to Perth for analysis with treatment arranged in Regional centres. This paper will outline Western Australian Aboriginal screening programmes as reviewed in 2007 and some results presented.

Digital systems are currently being installed in some centres with the attendant technical and practical problems. Fast, high resolution, digital image transfer is now a reality from remote communities. However, other problems have emerged including the lack of anonymity and confidentiality of patient information, a process that is currently overlooked by many software packages.

WHEN IS IT GLAUCOMA? HANDY HINTS WHEN EVALUATING THE OPTIC NERVE HEAD FOR GLAUCOMATOUS DAMAGE

Linda Malesic
Department of Clinical Vision Sciences, La Trobe University
Glaucoma Monitoring Clinic, Royal Victorian Eye and Ear Hospital

This presentation will outline the strategies adopted by clinicians on the Glaucoma Monitoring Clinic at the Royal Victorian Eye and Ear Hospital when evaluating the optic nerve head (via indirect ophthalmoscopy) for detection or progression of glaucomatous damage. The "4-step" approach in evaluating the optic nerve head will be discussed and examples will be used to illustrate the characteristic changes that occur during early to late stage glaucoma. The ways in which to document these observations will also be highlighted.

ACRONYMS AHOY! - TECHNOLOGICAL ADVANCES IN GLAUCOMA DIAGNOSIS AND PROGRESSION

Nathan Clunas
Discipline of Orthoptics, Faculty of Health Sciences, The University of Sydney

Recent developments in ophthalmic equipment have changed the way in which clinicians diagnose and measure the progression of glaucoma. This talk will focus on the latest technologies including HRT, OCT, FDT, GDx, Humphrey Matrix, updated versions of HFA and the measurement of CCT. An emphasis will be placed on the orthoptist's role with the use and interpretation of this equipment.

AMD - A REVIEW

Mara Giribaldi
Marsden Eye Specialists

This review on Age Related Macular Degeneration will explain aspects of the disease and show how Ocular Coherence Tomography (OCT), photography and Fluorescein Angiography (FFA) is used in it's diagnosis at Marsden Eye Specialists.

CURRENT MANAGEMENT OPTIONS FOR AMD: AN OVERVIEW

Meri Vukicevic[1,2] **Stavroula Stylianou**[2]
1 Department of Clinical Vision Sciences, La Trobe University
2 Eye Surgery Associates

This presentation will provide an overview on current management options for age-related macular degeneration (AMD). These management options include visudyne, lucentis and avastin therapy. Information in relation to the following themes will be provided: The purpose of each treatment, common method of use, conditions each treatment is suitable for, and typical improvement seen as a result of treatment.

RETINAL ASSESSMENT USING OCT: AN ORTHOPTIST'S COMPILATION OF TIPS

Suzane Vassallo[1] **Maria Kolic**[2]
1 Victoria Parade Eye Consultants, St Vincent's Medical Centre, Fitzroy Vic 3065
2 ARC Vision Science Centre of Excellence, Australian National University, Canberra, Australia.

When the device first arrived in the clinic, it seemed problematic from the start. Firstly, we had to find a position where it should go. Then, we had to learn how to use it – my patience with learning yet another piece of technology was waning. In an attempt to obtain some practical tips on how to tackle the OCT (and avoid reading the manual) I contacted Maria who became my mentor in the process of acquiring this new skill. This talk will highlight the novice's journey in understanding how to get the most out of this imaging device, and how a skilled and patient mentor, even when interstate, can make all the difference.

EVIDENCE BASED MEDICINE - APPLICABILITY TO ORTHOPTICS AND OPTHALMOLOGY

Rachel McIntosh
Retinal Vascular Imaging Centre, Centre for Eye Research Australia

The practice of Evidence Based Medicine is increasingly being utilised to develop and assess many diagnostic and treatment options for patients. The practice of evidence-based medicine means integrating individual clinical expertise with the best available external evidence from systematic research. (Centre for Evidence Based Medicine, 2007). It is also about integrating clinical expertise and best research evidence with patient values. Evidence based medicine involves tracking down the best evidence to answer our clinical questions. To determine the accuracy of a diagnostic test, to determine the safety and efficacy of an intervention and to answer questions regarding prognosis we need to find research findings that have employed the most applicable study designs, eliminated as much bias as possible and have sufficient sample size to answer our questions.

This presentation will present a brief background on the development and use of Evidence Based Medicine in Orthoptics and Ophthalmology. In addition to this a description of the methods used to critique the evidence available and a brief overview of how to conduct a systematic review will be provided.

TREATMENT OF MACULA OEDEMA WITH AVASTIN: CASE STUDY

Vivien Lee
The Eye Institute

A 66 year old male presented with a 10 day history of left blurred vision. He had never had the need to wear glasses for distance vision. Investigation showed macula oedema and a retinal vein occlusion. OCT showed thickening of the macula. Avastin treatment was indicated which resulted in a visual improvement from 6/12 to 6/7.5 within 2 months.

DIABETIC MACULAR OEDEMA - CURRENT AND FUTURE TREATMENT OPTIONS

Julie Ewing
Retinal Vascular Imaging Centre, Centre for Eye Research Australia

Diabetic Retinopathy (DR) is the leading cause of blindness in the working population of Australia and other developed countries. The most common cause of vision loss from DR is diabetic macular oedema (DME). All patients with diabetes are at risk of developing DME with risk factors including duration of disease, poor blood sugar control and hypertension. Good control of these factors is known to reduce the risk of DME developing and progressing. The current standard of treatment for DME is focal or grid laser photocoagulation. Although this has been shown to be effective in reducing the risk of vision loss, only a small number of patients experience an improvement in visual acuity. Some patients may not be suitable for laser due to the central area of swelling.

A number of new treatments are currently being investigated to treat DME and in some cases are already being used clinically. These include intravitreal triamcinolone and other longer release steroids as well as Macugen, Lucentis and Avastin. The current research on these treatments will be discussed.

ORTHOPTISTS ROLE IN SELECTING PATIENT SUITABILITY FOR MONOVISION LASER CORRECTION WHO HAVE OCULAR MOTILITY DISORDERS

Shih Shih Ta
The Eye Institute

Patients with ocular motility disorders often present to ophthalmology clinics for laser vision correction. However, several issues need to be considered when treating these patients. The role of the Orthoptist in assessing ocular motility patients, their likelihood of gaining a positive outcome post laser corrective surgery and the strategies employed by the Orthoptists at The Eye Institute will be discussed.