Abstracts of Annual Scientific Meeting of the Hong Kong Ophthalmological Society 2005

Clinical characteristics of intermittent exotropia in Hong Kong

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Purpose: To describe the clinical characteristics of patients with intermittent exotropia at Hong Kong Eye Hospital.

Methods: Prospective case series of 129 patients with diagnosis of intermittent exotropia from year 2000 to 2001, with a mean follow up of 3 years.

Results: Majority of the patients (65.1%) presented with basic type of exotropia, 17.8% with the near type and the remaining 17.1% with the distance type. 44.2% of patients presented with V-pattern exotropia. Only 0.8% of the patients presented with A-pattern exotropia.

Conclusion: V pattern exotropia is more common in Hong Kong when compared with other reported data.

A New Extraocular Application for Trypan Blue and Review of the Ocular Uses of Trypan Blue

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Enucleation surgery can be complicated by a variety of adverse outcomes including conjunctival inclusion cysts. To assist in the delineation between the conjunctiva and the Tenon capsule during enucleation surgery, we used a technique of applying trypan blue vital stain, resulting in staining of the Tenon capsule without staining the conjunctiva. The ability to visualise the Tenon capsule separate to the conjunctiva greatly assisted in the closure of these anatomically distinct layers. This may reduce the possibility of post surgical conjunctival inclusion cysts. To our knowledge, this is the first extraocular application of trypan blue in ophthalmology. A review of other ocular uses of trypan blue including staining of the anterior lens capsule in cataract surgery, and our preferred method for application of trypan blue in this setting, is included.

Endoscopic dacryocystorhinostomy with mitomycin C and intranasal triamcinolone

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Pharmacological modulation of wound healing is commonly practised in ophthalmology. Corticosteroid reduces inflammation whereas mitomycin C inhibits fibroblasts and scar formation. Combined usage of these two agents may be useful in improving the success rate of endoscopic dacryocystorhinostomy (EDCR). The current study reports the result of EDCR using the nasal mucosa preserving technique with intraoperative mitomycin-c and intranasal application of triamcinolone through a piece of gelfoam. Success was defined anatomically by the presence of fluorescent dye in the nasal cavity. A total number of 30 cases were performed and the mean follow up duration was more than 12 months. The overall success rate was 96.7% (29/30). A video presentation of the surgical technique will be presented as well.

Pars Plana Vitrectomy and Perfluoropropane (C₃F₈) Tamponade for Macular Hole Retinal Detachment - a Prognostic Factor Analysis

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Purpose: To determine the prognostic factors associated with anatomical success in the treatment of macular hole retinal detachment (RD) by pars plana vitrectomy (PPV) and perfluoropropane (C₃F₈) tamponade.

Methods: Retrospective analysis of medical records of a consecutive series of 60 cases of macular hole RDs treated by PPV and C₃F₈ tamponade, with or without concomitant internal limiting membrane (ILM) removal, endolaser photocoagulation and/or phacoemulsification.

Results: The mean post-operative follow up was 26.9 ± 16.5 (range 6 - 60) months. Regression analysis showed eyes with shorter axial lengths (odds ratio [OR] = 7.79, 95% CI = 1.68 - 36.22, P = 0.009), eyes with concomitant ILM removal (OR = 1.59, 95% CI = 1.14 - 2.38, P = 0.013) and duration of macular hole RD (OR = 0.81, 95% CI = 0.67 - 0.98, P = 0.033) were associated with anatomical success.

Conclusion: Alternative surgical techniques may have the potential to improve the anatomical success rate in patients with poor prognostic factors.

Combined photodynamic therapy and intravitreal triamcinolone injection for the treatment of subfoveal choroidal neovascularisation in age-related macular degeneration: A comparative study

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Aim: To evaluate the outcomes of combined intravitreal triamcinolone (IVTA) and photodynamic therapy (PDT) with verteporfin in the treatment of subfoveal choroidal neovascularisation (CNV) due to age-related macular
Central Corneal Pachymetry in Hong Kong Chinese with Orbscan II - In search of an ideal correction factor

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Objective: To compare the corneal thickness measurements obtained using Orbscan II with various correction factors and ultrasound pachymetry. Method: In 239 normal eyes, Orbscan and ultrasound pachymetric measurements were taken. The subtraction factor - the average corneal thickness difference between Orbscan and ultrasound - was calculated to be 40 microns. The acoustic factor - the corneal thickness ratio between ultrasound and Orbscan - was calculated to be 0.93. A level of agreement plot between ultrasound and Orbscan-40 um and also between ultrasound and Orbscan * 0.93 was then obtained for error spread. Results: The error between measurements from ultrasound and Orbscan-40 um is within a range of 30 um whereas the error between ultrasound and Orbscan * 0.93 is within a range of 60 um. Conclusion: An Orbscan subtraction factor of 40 um correlated more with ultrasound measurements than an acoustic factor of 0.93.

Modified technique of amniotic membrane transplantation for symptomatic bullous keratopathy

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Purpose: To present a modified technique of amniotic membrane transplantation (AMT) for symptomatic bullous keratopathy (BK) and to report its associated outcome. Method: Poor visual potential BK patients presenting with pain or discomfort who received AMT were reviewed. After corneal epithelial debridement, a circular groove was created by partial trephination and AM then transplanted as an ‘inlay graft’. Complications, symptomatic relief and time for re-reported resolution of ocular discomfort from first postoperative day. Corneal re-epithelialisation was achieved within 2 weeks in all cases. No recurrence of symptoms were noted. Conclusion: Our modified AMT technique appeared to be a safe and effective treatment modality in alleviating pain and promoting epithelial healing in eyes with symptomatic BK. It may serve as a valuable temporary measure in patients awaiting definitive corneal transplantation.

Shallow Ablations in Phototherapeutic Keratectomy: A Long-Term Follow-Up

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Purpose: To evaluate the long term efficacy and safety of shallow ablations in phototherapeutic keratectomy (PTK) in patients with recurrent corneal erosions (RCE). Setting: Department of Ophthalmology, Tuen Mun Hospital, Hong Kong, China. Methods: A retrospective analysis of 13 consecutive eyes with RCE treated by PTK between 1997-1999 was performed. All eyes failed to respond to conventional treatments and all eyes had corneal erosions involving the visual axis. Outcome measures included number of recurrences, change in best corrected visual acuity (BCVA) and spherical equivalent (SE), and complications arising from the laser treatment. Results: Indications for PTK were RCE secondary to minor abrasive trauma (9 eyes) and Map-Dot-Fingerprint (MDF) corneal dystrophy (4 eyes). Ablation depth ranged between 3.4 and 5.8 £gm (mean = 4.6 £gm). Mean post-operative follow-up was 49.5 months (range 24-68 months). The overall success rate after only one treatment was 84.6%. Eleven out of 13 eyes had a preserved or improved BCVA, while 2 eyes showed deterioration of 1 line on Snellen testing. Seven out of 13 patients had no change in SE, the rest had a change of less than 0.50 dioptres. There were no major complications. Conclusion: Our comparable success rate after a single treatment suggests that PTK may still be effective at a shallower depth than previously considered. Shallow ablations may have lower chances of complications associated with deeper ablations. Further studies involving a larger number of subjects are warranted for patients awaiting definitive corneal transplantation.

A Prospective Analysis of Clinical Profile of Primary Open Angle Glaucoma with Normal Tension (NTG)

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Introduction: Although NTG is common, there were few systematic documentation of the clinical profiles and factors for disease progression in Chinese. Method: Consecutive NTG patients defined as per Collaborative NTG Study were recruited. Disease progression was defined with established criteria on visual fields (VF). Results: Two-hundred-and-thirteen-eyes of 213 subjects were prospectively recruited. Mean follow-up was 1.8 years. Comparing CPNTG (32 subjects...
Langerhans cell histiocytosis (LCH) features and management are discussed. We report a case of primarily cutaneous LCH affecting the eyelids resulting in a coloboma-like defect. The clinical Morphometric measurements were done by using a novel University of Hong Kong, Hong Kong Eye Hospital

Objectives/Methods: Langerhans cell histiocytosis (LCH) is a mononuclear phagocyte system. Cutaneous LCH can occur as extralesional triamcinolone acetonide injection versus conservative management in the treatment of chalazion

Clinical Anatomy of the Chinese Orbitae

Introduction: It is well known that anatomical variations may exist in different ethnic groups rendering surgery around particular regions challenging. Our study is the first to examine the orbital osteology in Chinese dried skulls to provide safety distances for orbital surgeries from surgical anatomical landmarks around the orbit. Materials and methods: Thirty seven Chinese (74 orbitae) dried skulls with known age at the time of death were studied. Morphometric measurements were done by using a novel indirect method. Measurements were made to various anatomical structures within the orbit from landmarks around the orbital rim. Data, including the suggested safety distance, were then compared with that of other populations. Results and conclusions: The distances from the optic canal to the surface anatomical landmarks were presented. The suggested safety distances with their defining criteria for orbital surgeries were elucidated. Surgical dissection beyond these distances may be possible but extra care should be exercised to prevent inadvertent damage to important structures within the orbit.

Extent and Predictors of Microbial Hand Contamination in a tertiary care Ophthalmic Outpatient Practice

Purpose: To measure the extent of microbial hand contamination among ophthalmologists. Methods: Single masked analysis of hand flora of ophthalmologists before and after patient examination, and after hand washing by agar imprints of the dominant hand. Results: Gram negative bacilli were the commonest transient flora, followed by gram positive cocci and fungi. Thirty-five (97.2%) and 8 ophthalmologists (22.2%) were culture positive for at least one resident and transient organism respectively before patient contact. Use of alcohol-based hand rubs was associated with a mean resident floral reduction of 324.4 CFU's (95% CI = 185.4 to 463.5, P < 0.01) and 31.6 CFU's (95% CI = 1.2 to 62.0, P < 0.05) after patient contact and hand washing respectively. Conclusions: The extent of pathogenic organisms contamination after contact with eye outpatients, who have traditionally been perceived as relatively "clean", was of concern. Previously identified risk factors for hand contamination in inpatient settings, such as patient load, only explained a small proportion of variance in microbial load in the ophthalmic outpatient setting.

Multiple eye lid defects in cutaneous Langerhans cell histiocytosis

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chalazia in group 2 developed hypopigmentary skin changes in one of the treatment sites. Conclusion: Subcutaneous extralesional triamcinolone injection was significantly more effective than conservative treatment for chalazion.

Regional incidence of Neonatal Chlamydial Conjunctivitis and Rate of Nasopharyngeal colonisation using Polymerase Chain Reaction in Hong Kong

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Method: All consecutive cases of neonatal conjunctivitis (NC) presenting to our hospital were recruited from May 2004 to April 2005. Both eyes of all NC cases were investigated separately with Chlamydia PCR, Direct immunofluorescent stain and Cell Culture by two assigned ophthalmologists. For those neonates that who were diagnosed to have Neonatal Chlamydial Conjunctivitis (NCC), nasopharyngeal smear would also be taken from nostrils using nasopharyngeal swab. Complete set of ocular and nasopharyngeal specimens were taken at 3 weeks after oral erythromycin to confirm complete ocular and nasopharyngeal eradication of Chlamydia trachomatis.

Results and Conclusions: In this hospital based study using PCR to diagnose Chlamydial infection, the incidence of NCC in the region of Hong Kong was 4 in 1000 live births. 62.5% of NCC cases had nasopharyngeal colonisation of Chlamydia trachomatis and 35% had gastrointestinal side effects related to oral erythromycin. Owing to the high rate of nasopharyngeal colonisation and possible treatment failure in NCC, nasopharyngeal PCR for Chlamydia is recommended before and after oral erythromycin to confirm complete eradication of the disease.

Repeated intravitreal triamcinolone (ivTA) injections for the treatment of diabetic macular edema (DME)

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Objectives: IvTA is increasingly used for the treatment of DME. However the treatment benefit of a single dose of 4 mg ivTA is transient, lasting 2-6 months, and necessitating repeated injections. We report a case series of 8 eyes, which received a repeated dose of 4 mg ivTA for the treatment of DME at least 6 months after their first injection. Method: Best-corrected visual acuity (BCVA) and central foveal thickness (CFT) on optical coherence tomography, pre-injection and at 2, 4, 9 and 17 weeks post-injection, were compared with paired t-test, for the first and repeated injections. Results: Pre-injection BCVA and CFT were not significantly different. However the BCVA and CFT after the repeated injections were significantly worse than the first at all subsequent time points (p<0.05) except CFT at 17 weeks. Conclusion: A repeated injection of ivTA did not appear as effective as an initial injection.

Bimanual microincisional phacoemulsification using Millennium Microsurgical System

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Purpose: To evaluate the safety and efficiency of bimanual phacoemulsification using Millennium Microsurgical System (MMS). Methods: Prospective randomised controlled study comparing cataract operation using bimanual and coaxial phacoemulsification. Perioperative VA, specular microscopy count (SM), effective phacoemulsification time (EPT), operation time, volume of balanced salt solution (BSS) utilised were compared. Results: 35 eyes from 35 consecutive cataract patients were recruited. 15 had coaxial and 20 had bimanual phacoemulsification. No significant difference was noted in SM change and visual improvement between the two groups. Operation time using coaxial and bimanual approach were 16.4 ± 3.9 and 25.3 ±11.3 minutes (p=0.006). No significant difference was found in EPT (p=0.141). Significantly more BSS was used with bimanual (320 ± 90 ml) than coaxial (179 ± 50ml) phacoemulsificaiton (p=0.000).

Conclusions: Initial cases of bimanual phacoemulsification using MMS demonstrated that it is a safe and effective method of cataract surgery.

Evaluation of axial length measurement with the partial coherence interferometry (PCI) and conventional ultrasound biometry in Chinese eyes with high axial myopia

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Purpose: To compare axial length (AL) measurements assessed by ultrasound and PCI in a retrospective study of 44 high axial myopic eyes. Setting: Department of Ophthalmology, Tuen Mun Hospital, Hong Kong, China. Methods: 55 myopic eyes of 52 Chinese patients with AL longer than 25.00mm, who had cataract surgery during the year 2004 were studies. Preoperative AL data obtained with ultrasound and PCI were applied to Holladay IOL power formula. Difference between the 3-months postoperative and the predicted refractive outcomes determined from the two biometries was compared. Wilcoxon test and Spearman’s correlation were used to analyse the statistical significance of the result.

Result: The optical AL was significantly longer (p=0.002) than AL by ultrasound biometry (by a mean of 0.21mm). The correlation coefficient of PCI measurements and ultrasound measurements was 0.973 for AL (p<0.01) and 0.947 for IOL power (p<0.001). In only 5 of the cases (11%), both biometries gave the same recommendation on the choice of IOL power. In 29 cases (66%), a lower “plus-signed” IOL power (mean 1.6D, range 0.5D to 4D) was suggested when employing PCI in contrasted to USG biometry. PCI instead of ultrasound biometry produces a significantly more precise refractive outcome (p<0.01) with a smaller standard deviation and a lower mean absolute error. 80% of the studies eyes were within 1D from the optical predicted refraction, in contrast to 63% by USG biometry. A more hyperopic shift in predicted refraction was indicated in 77% of the cases if PCI instead of USG biometry was employed. The mean hyperopic shift being +0.39D. Conclusion: PCI results in a more precise, but significantly longer AL measurement than ultrasound biometry in high axial myopic eyes. A risk of hyperopic shift may result in post-operative refractive outcome.