

Glaucoma

Chairperson: D Grosvenor

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Intraocular Pressure Reduction after Combined Cataract and iStent Trabecular Bypass Surgery

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Objective: To discuss the safety and efficacy of iStent implantation at the time of cataract surgery in a series of 25 open-angle glaucoma patients previously treated with one or more topical ocular hypotensive agents.

Methods: A series of 25 consecutive patients who underwent iStent implantation with cataract surgery were identified from the surgical records of a high-volume glaucoma practice in the US Virgin Islands. Eleven male and 14 female patients with primary open-angle glaucoma were included, ranging in age from 46–86 years. Baseline intraocular pressure (mmHg, Goldman applanation tonometry), current medical therapy and co-morbid ocular disease were tabulated. Preoperative intraocular pressure, use of topical medication and visual acuity were compared with postoperative characteristics four months after cataract surgery with iStent implantation.

Results: There were no intraoperative or postoperative complications. At the four-month postoperative evaluation, the mean reduction in intraocular pressure among all patients was 4.2 mmHg. The mean number of intraocular medications decreased from 2.2 to 2.1 at four months.

Conclusion: The iStent is a safe and effective treatment option in patients with open-angle glaucoma. Implantation of the iStent at the time of cataract extraction with intraocular lens placement (CE/IOL) can reduce the need for topical hypotensive therapy in open-angle glaucoma patients.

Progressive Retinal Nerve Fibre Layer Atrophy is Associated with Thin Central Corneal Thickness in Glaucoma Suspect and Glaucomatous Eyes

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Objective: To prospectively examine the relationship between central corneal thickness (CCT) and longitudinal changes in retinal nerve fibre layer thickness (RNFL) over time identified using time-domain optical coherence tomography (TD OCT) in glaucoma suspect and preperimetric glaucoma (GSPPG) and perimetric glaucoma (PG) patients.

Methods: This was a multicentre prospective longitudinal clinical trial. Eligible eyes with ≥ 2 years of follow-up underwent TD OCT and standard automated perimetry (SAP) every six months. Central corneal thickness was measured in all eyes at the baseline examination. Retinal nerve fibre layer thickness progression was defined as a significant negative decline ($p < 0.05$) in slope of average RNFL thickness. Standard automated perimetry progression was defined as a significant ($p < 0.05$) negative visual field index (VFI) slope over time. Cox proportional hazard ratios (HR) were calculated using univariate and multivariate models with RNFL loss as a time-dependent covariate for age, race, gender, CCT, baseline intraocular pressure (IOP), visual field index (VFI), mean deviation (MD), pattern standard deviation (PSD) and HRT linear cup to disc ratio (HRTLCDR).

Results: A total of 177 PG eyes and 310 GSPPG eyes were included. The mean age was 60.3 ± 9.5 years. The average number of TD OCT and SAP examinations for each eye was 8.6 ± 2 . Eighty-nine eyes had SAP progression and 101 eyes showed significant progressive RNFL loss. Eyes with

RNFL progression had thinner CCT ($544.9 \pm 38.7 \mu\text{m}$, $p < 0.001$) compared with non-progressive eyes ($551.6 \pm 35.1 \mu\text{m}$). Eyes with VFI progression had thinner CCT ($546.3 \pm 35.7 \mu\text{m}$, $p = 0.04$) compared with non-progressive eyes ($551.1 \pm 35.5 \mu\text{m}$). In multivariate Cox models, eyes with thinner CCT were likely to experience RNFL loss compared with eyes with thicker CCT (HR = 1.40 per 50 μm thinner CCT, $p < 0.001$).

Conclusions: Glaucoma suspect and glaucomatous eyes with thin CCT are at increased risk for progressive RNFL atrophy over time.

The Sensitive Glaucoma Patient

S Sugrim

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On a few occasions you will come across special patients with whom you will have to dedicate extra effort for proper management. In the glaucoma clinic, the needs of these sensitive patients can be multi-faceted and can occur at any point of patient care. Special considerations are needed, ranging from making an initial diagnosis, to counselling, how to approach tonometry, dealing with side effects of topical medications, discussing and making assessments for surgery, intraoperative and postoperative care and management. Considering the long-term process that is involved in glaucoma management, it is pertinent to weigh all the pros and cons involved before deciding on a definite plan in these patients.

Review and Update on Steroid Response Glaucoma

C Bourne

The objectives of this presentation are to:

- * Review the pathophysiology of steroid response ocular hypertension
- * Review the impact of steroids in clinical use on intraocular pressure
- * Discuss the management of steroid response ocular hypertension

Deep Non-penetrating Sclerectomy with a Suprachoroidal Drainage Device, the Esnoper V-2000: The San Andres Experience

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Deep non-penetrating sclerectomy is known to have a less hypotensive effect compared with trabeculectomy, the “gold standard” of glaucoma surgery. However, it has comparable results when modified with the use of implants that improve aqueous outflow.

The Esnoper V-2000 has been proven to improve conventional and unconventional outflow, demonstrated on ultrasound biomicroscopy by the formation of a “scleral lake”. There are various publications on the use of deep non-penetrating sclerectomy with the Esnoper. One such study includes 60 patients of a similar age group with open-angle glaucoma or pseudoexfoliative glaucoma at the Hospital de Torrevieja, in Alicante, Spain. Half the patients underwent deep sclerectomy with the T-Flux implant and a second group of 30 patients with the Esnoper V-2000. In both groups, the surgical technique included 5-FU, the suprachoroidal implant and a non scleral suture. For group 1 (T-Flux), the initial intraocular pressure (IOP) in mmHg was 24.93 ± 10.03 and at one, three, six months and one year were: 11.19 ± 5.21 , 13.19 ± 4.97 , 13.81 ± 3.59 and 15.26 ± 3.97 . In group 2 (V-2000), the initial IOP was 24.24 ± 10.81 and one, three, six months and one year was 10.09 ± 2.82 ; 13.07 ± 3.34 ; 13.40 ± 4.04 and 15.94 ± 2.31 , respectively. There was no statistical difference between the groups.

This video is a demonstration of our experience with the Esnoper V clip, as well as a discussion on the role of laser goniopuncture.