

OP-9 SUBCONJUNCTIVAL SILICONE OIL – PRESENTATION, HISTOLOGY AND SURGICAL MANAGEMENT

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Objective To describe the clinical and histological findings in subconjunctival silicone oil leakage, and a surgical technique for its management.

Method A 60-year-old woman with a chronic macula-off detachment underwent two pars plana vitrectomies four months apart. The silicone oil inserted during the first was replaced by heavy silicone (Oxane HD) at the second, with unsutured sclerostomy ports. One month later silicone oil cysts were noted under the conjunctiva.

Results Symptoms were grittiness, dryness and heaviness with occasional severe pain. Multiple oil globules 0.2 – 2mm in diameter were tightly packed beneath the conjunctiva in two quadrants, extending from limbus to peripheral bulbar conjunctiva.

Tenons tissue containing silicone globules was isolated by dissecting planes superficially, immediately beneath the conjunctival basement membrane, and deep, immediately above the sclera. The tissue sheet was mobilised and excised posteriorly at the junction with healthy tissue.

Histology revealed sheets of connective tissue with densely packed tiny lacunae, and intermittent large lacunae with fibrous walls. Inflammatory cells were scattered in between.

Discussion Injectable medical grade silicone oil is only approved for intravitreal use. When injected into breasts, buttocks or face, or following implant rupture, it can migrate causing inflammation, contracture, calcification, embolism and death. It is difficult to remove surgically as it is viscous and adherent, requiring surfactants.

Conclusion Leakage of silicone oil from a sclerostomy is a rare complication of intravitreal use. It densely infiltrates subconjunctival tissues, causing irritation and heaviness. With careful dissection, the tissues can be removed en bloc with resolution of symptoms.

OP-10 GUT MICROBIOTA DYSBIOSIS AS A DRIVER OF INFLAMMATION IN OCULAR MUCOUS MEMBRANE PEMPHIGOID

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Objectives Mucous Membrane Pemphigoid is an orphan multi-system autoimmune scarring disease involving mucosal sites, including the ocular surface (OcMMP) and gut. The gut microbiome plays a critical role in the development of the immune system. This study examines the relationship between gut microbiome diversity and ocular inflammation in patients with OcMMP.

Methods and Analysis Gut microbiome profiles between OcMMP patients (n=49) and healthy controls (n=40) were compared by extracting DNA from faecal samples and amplified for the V4 region of the 16S rRNA gene followed by Illumina Miseq platform sequencing. Sequencing reads were processed using the bioinformatics pipeline available in the mothur v.1.44.1 software.

Results Using multivariable model and adjustment for participant factors, OcMMP cohort was found to be associated with lower number of operational taxonomic units (OTUs) and Shannon Diversity Index when compared to healthy controls. OcMMP OTUs were found to be significantly correlated with both the bulbar conjunctival inflammation score (p=0.03) and the current use of systemic immunotherapy (p=0.02). Linear discriminant analysis effect size scores found Streptococcus and Lachnospirillum enriched in OcMMP. By contrast, healthy controls were enriched with Oxalobacter, Clostridia uncultured genus-level group (UCG) 014, Christensenellaceae R-7 group and butyrate-producing bacteria such as Ruminococcus, Lachnospiraceae, Coprococcus, Roseburia, Oscillospira-ceae UCG 003, 005, NK4A214 group (Log10 LDA score <2, FDR-adjusted p<0.05).

Conclusion In conclusion, OcMMP patients have gut dysbiosis that correlated with bulbar conjunctival inflammation and the use of systemic immunotherapies. This provides a framework for future longitudinal deep phenotyping studies on the role of the gut microbiome in the pathogenesis of OcMMP.

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Poster abstract presentation

P-12 A CASE OF DESCOMET'S MEMBRANE DETACHMENT FOLLOWING PENETRATING KERATOPLASTY FOR KERATOCONUS

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Objective To present an uncommon case of Descemet's (DM) detachment 20 years following PK for keratoconus. The detachment spontaneously resolved with conservative management.

To review the literature and published case reports for the clinical course, prognosis, and managements employed for DM detachment following PK.

Methods and Analysis Case presentation of a patient presenting to our department and review of the literature.

Results Our patient presented with a spontaneous DM detachment 20 years after an uncomplicated PK for keratoconus. Imaging showed recurrence of corneal ectasia inferiorly, which would give this patient a poorer prognosis and higher risk of re-detachment after surgical intervention for the detachment.

We opted for conservative management, after which the DM detachment spontaneously resolved and corneal thickness improved.

DM detachment is an uncommon late complication of PK and pathophysiology is thought to be mechanical due to a retrocorneal membrane, or due to recurrence of corneal ectasia. The majority of published cases underwent surgery with air, SF6, or C3F8 with postoperative supine positioning, or progression to repeat PK or DSAEK if this initial treatment fails. Topical steroids can be given for conservative management.

Conclusion Conservative management of DM detachment can be an option for patients with guarded prognosis, or in small detachments with no tears. Our case provides another data point on the presentation and progression of this complication to the small number of case reports in the literature.

P-13 **TRANS-EPITHELIAL PHOTOTHERAPEUTIC KERATECTOMY (PTK) FOR RECURRENT CORNEAL EROSION SYNDROME (RCES)**

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Objective To evaluate the efficacy and safety of trans-epithelial phototherapeutic keratectomy (PTK) as a treatment for recurrent cornea erosion syndrome (RCES) in patients with symptoms refractory to conventional treatments.

Methods and Analysis All patients who received PTK treatment for RCES had failed more than one conventional treatment, and were first vetted and approved by the British Columbia public health authority. A retrospective chart review and telephone survey were conducted at the Pacific Laser Eye Centre. Exclusion criteria were ocular co-morbidities potentially affecting treatment efficacy.

Results This study included 593 eyes of 555 patients (46.2% male; 50.9±14.2 years old) who underwent PTK. The leading identified causes of RCES were trauma (45.7%) and anterior basement membrane dystrophy (44.2%). The most common pre-PTK interventions were ocular lubricants (90.9%), hypertonic solutions (77.9%), and bandage contact lenses (50.9%). 36 eyes had undergone surgical interventions such as stromal puncture, epithelial debridement, or diamond burr polishing. Post-PTK, 78% of patients did not require any subsequent therapies, 20% required ongoing drops and 6 patients (1.1%) reported no symptom improvement. All 6 eyes were successfully retreated with PTK between 11.3 ±14.9 months from initial PTK. All study patients showed no significant differences in best corrected visual acuity pre vs. postoperatively.

Conclusion When compared to other surgical options, PTK is potentially more costly but frequently more effective and has a high safety profile. The third-party public health vetted nature of this study, the high patient satisfaction, and the low recurrence rate of RCES suggest that PTK should be considered at an earlier stage in the management of RCES.

P-14 **DESCEMET STRIPPING ENDOTHELIAL KERATOPLASTY VERSUS DESCEMET MEMBRANE ENDOTHELIAL KERATOPLASTY: 5-YEAR GRAFT SURVIVAL AND ENDOTHELIAL CELL LOSS IN PATIENTS WITH FUCHS' ENDOTHELIAL DYSTROPHY**

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Objective To compare endothelial cell loss, graft survival, and clinical outcomes in patients with Fuchs' endothelial dystrophy (FED) up to 5 years after Descemet stripping endothelial keratoplasty (DSEK) and Descemet membrane endothelial keratoplasty (DMEK).

Methods 318 consecutive DSEK (n=189) and DMEK (n=129) grafts of 223 patients performed by 8 surgeons with standardised protocols between January 2006 and October 2021 were analysed. Group differences were compared with parametric and non-parametric tests. Kaplan-Meier analysis and Cox regression were conducted for graft survival and identify graft failure and rejection risk factors.

Results At 5 years, graft survival was 97% and 98% (p=0.370) in DSEK and DMEK eyes. Mean percentage endothelial cell loss was 56.6±17.6 in DSEK and 55.6±15.2 in DMEK eyes (p=0.865). Mean BSCVA was 0.12±0.13 LogMAR in DSEK and 0.00±0.17 in DMEK grafts (p<0.00001) at 5 years postop. Within 5 years, 12% of DSEK and 9% of DMEK eyes developed allograft rejection (p=0.412). Rebubbling was performed in 9.0% of DSEK and 2.3% of DMEK grafts (p=0.211). Cox regression identified rejection episode (HR 1.36; 95% CI: 2.31–80.22 (p=0.004)) as a significant contributing factor for graft failure.

Conclusions At 5 years there was no significant difference in graft survival or endothelial cell loss between DMEK and DSEK eyes with FED. We propose that our standardised technique reduces the need for rebubbling. DMEK had superior visual acuity outcomes compared with DSEK in these patients up to 5 years after surgery.

P-15 **UTILISING ENDOTHELIAL MIGRATION TO PERFORM DEEP ANTERIOR LAMELLAR KERATOPLASTY IN EYES WITH DEEP POSTERIOR CORNEAL SCARRING TYPICALLY TREATED WITH PENETRATING KERATOPLASTY**

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Purpose To describe a novel technique for deep anterior lamellar keratoplasty (DALK) in patients central corneal perforation and deep scarring making conventional DALK (Melles or Big Bubble) unviable. A posterior Descemet's membrane (DM) skirt has provided an adequate scaffold for the migration of the host endothelial cells.