

Iris Replacement A Scleral-fixated HumanOptics artificial iris (CustomFlex[®]) was inserted in September 2023. As the pre-existing sutured IOL was sutured approximately 2.8 mm posterior from the limbus, the iris implant was fixated at 1.8 mm posterior to the limbus. The surgery achieved excellent anatomical results and improved symptoms. However, there was a persistently high intraocular pressure (IOP) (maximal IOP = 50 mmHg) despite maximal medical management necessitating Ahmed valve implantation in November 2023. Visual acuity improved from 6/30 pre-op to 6/19 postoperatively and at last review IOP was 8 on no medications.

Conclusion Artificial iris implants can be safely inserted in eyes with pre-existing scleral-fixated IOLs, provided close monitoring is undertaken to ensure issues with raised IOP are managed promptly.

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CHANGING INDICATIONS FOR PENETRATING KERATOPLASTY AND 5-YEARS SURVIVAL OUTCOMES – A SINGLE TERTIARY CENTRE EXPERIENCE

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Purpose To investigate long-term graft survival rates of penetrating keratoplasties, patient characteristics and co-morbidities in a single tertiary care centre on the South Coast.

Methods Retrospective, non-comparative case series review of 5-year follow-up for patients who underwent penetrating keratoplasty between 2008 and 2018. The primary outcome measures were 5-year corneal graft survival, graft surgery indications, and co-morbidities identification.

Results 198 penetrating keratoplasties were performed, of which 32 were excluded from further investigation because of insufficient follow-up data. 60 (36%) grafts in 45 patients did not survive a 5-year follow-up. In this group, the mean age of transplant recipients was 64 years (range 18–90, median 67), with a male-to-female ratio of 5:4. 27 (45%) were re-graft surgeries, and 10 (17%) had more than three penetrating keratoplasties. The failure group often included more than one indication for surgery. Of these, the most prevalent were infective/therapeutic grounds (52%), bullous keratopathy (20%), herpes simplex keratitis (10%), corneal ectasia (8%) and trauma-related (5%). The most common co-morbidities in the graft failure group were glaucoma (47%), infectious keratitis (42%), glaucoma surgery (20%), anterior chamber intraocular lens (13%) and retinal detachment surgery (13%). Most patients in the failure group (78%) were of advanced age of more than 65 years old.

Conclusions It was found that most penetrating keratoplasties failed due to infective keratitis. Patients in our graft failure group had high rates of ocular and medical co-morbidities, requiring multiple procedures and multidisciplinary care from various ophthalmic and medical subspecialties.

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HOW TO ASSESS THE EFFECTIVENESS OF CORNEAL CROSS-LINKING FOR KERATOCONUS: NEED OF A SHARED PROTOCOL

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Objective Comparing definitions of progression in keratoconus (KC) patients after corneal cross-linking (CXL).

Methods Retrospective case series of KC eyes underwent CXL. Keratoconus progression after CXL treatment was defined based on either the widely accepted standard criteria (i.e., maximum keratometry (Kmax), increase >1 Diopter (D) or thinnest corneal thickness (ThCT) reduction >20 mm) or the ABCD progression criteria.

Results Thirty-seven KC eyes underwent CXL. Kmax showed a significant reduction from baseline values after CXL ($p < 0.01$), while no difference in ThCT ($p = 0.12$) and in CDVA ($p = 0.1$) was found. Applying standard criteria for progression 18.9% (7/37) of eyes were classified as progressed and 43.2% (16/37) according to the ABCD method.

Conclusions Different definition of progression leads to increased misclassification, there is a need of a shared protocol to assess the effectiveness of CXL.

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TRI-LAMELLAR MINI-DSEK FOR REPAIR OF INTRACTABLE CORNEAL PERFORATIONS

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Introduction Recurrent corneal perforations can be challenging to treat, especially in cases of chronic ocular inflammation. We highlight a novel technique for the definitive treatment of corneal perforations not amenable to therapy with cyanoacrylate glue.

Methods We report two cases of large corneal perforations secondary to active rheumatoid arthritis. The cases had perforations that failed to seal after several attempts of cyanoacrylate glue and bandage contact lenses. A novel technique- Tri-lamellar tectonic Mini-Descemet Stripping Endothelial Keratoplasty (Mini-DSEK) along with amniotic membrane transplant (AMT) was used to restore anatomical integrity with success in both cases. In addition to the mini-DSEK patch, an overlay stromal cap was harvested from the same donor tissue and used as a patch graft, 'sandwiched' in between the DSEK tissue and the AMT. The AMT and patch were secured in position with fibrin glue, sutures and a BCL that provided additional strength. The sutures were removed at one month.

Results Both had deep anterior chambers with no leak post operatively. The stromal cap is thin, transparent and adds tissue in the area of thinning. This tri-lamellar technique provides structural integrity, transparency, has anti-inflammatory properties, promotes re-epithelialization and ocular surface healing.

Discussion Tectonic mini-DSEK with an overlay stromal cap is a novel procedure for corneal perforations which may be used as an alternative to anterior surgical approaches like penetrating or lamellar keratoplasty- reducing astigmatism and the risk of immunological rejection. The tri-lamellar technique adds tissue in areas of thinning and provides early visual rehabilitation.

P-18 DMEK IN ICE SYNDROME AND KERATOCONUS

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Case A 60-year-old male presented with gradual, painless deterioration of vision in his left eye over four years. His past ophthalmic history was clear with no record of trauma, surgery, infection or inflammation. His left eye's best corrected visual acuity (BCVA) was 1.1 LogMar, and the cornea showed stromal oedema and a central thickness of 765 microns. There was no evidence of ocular inflammation or corneal scar in the affected eye, and the fellow eye looked pristine. Hypertonic saline and empiric systemic aciclovir were started, which made no significant improvement. However, an area of raised, mildly pigmented iris with iridocorneal contact was noticed in the far-periphery of the inferotemporal cornea. Oncology consultation excluded uveal malignancies. With the probable diagnosis of ICE syndrome, combined cataract surgery and 7.5 mm endothelial keratoplasty (DMEK) was performed with an aqueous tap to exclude HSV/VZV/CMV endotheliitis. The aqueous tap result was negative for any viral infection, and the Descemet membrane histology confirmed the diagnosis of ICE syndrome. Two months post-op, the patient was happy with the BCVA of 0.54 LogMar. The cornea looked clear with no scar or residual oedema, the IOP was within normal limits, the disc OCT was normal, and the macular OCT showed minimal epiretinal membrane with no traction, which did not justify his vision. Corneal Pentacam showed the rare association of keratoconus with ICE syndrome in his left eye. 10 months post-op, the graft looks clear, and he is happy with his vision and not keen on a rigid contact lens trial.

P-19 CORNEAL ASTIGMATIC OUTCOMES AFTER FEMTOSECOND LASER-ASSISTED CATARACT SURGERY COMBINED WITH SURFACE PENETRATING ARCUATE KERATOTOMIES

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Objective To evaluate corneal astigmatic outcomes of femtosecond laser-assisted arcuate keratotomies (FAKs) combined with femtosecond laser-assisted cataract surgery (FLACS) over 12-month follow-up.

Methods One hundred forty-five patients with bilateral cataracts and no ocular co-morbidities were recruited to a single-centre, single-masked, prospective randomised controlled trial (RCT) comparing two monofocal hydrophobic acrylic intraocular lenses. Eyes with corneal astigmatism (CA) of >0.8 dioptres (D) received unpaired, unopened, surface penetrating FAKs at the time of FLACS. Visual acuity, subjective refraction and Scheimpflug tomography were recorded at 1, 6, and 12 months. Alpins vectorial analyses were performed.

Results Fifty-one patients (61 eyes), mean age 68.2±9.6 years [standard deviation (SD)], received FAKs. Sixty eyes were available for analysis, except at 12 months when 59 attended. There were no complications due to FAKs. Mean pre-operative CA was 1.13±0.20 D. There was a reduction of astigmatism at all post-operative visits (residual CA 1 month: 0.85±0.42 D, p<0.001; 6 months: 0.86±0.35 D, p<0.001; and 12 months: 0.90±0.39, p<0.001). Alpins indices remained stable over 12 months. Overall, the cohort was under-corrected at all time points. At 12 months, 61% of eyes were within ±15 degrees of pre-operative astigmatic meridian.

Conclusion Unpaired unopened penetrating FAKs combined with on-axis phacoemulsification are safe but minimally effective. CA is largely under-corrected in this cohort using an existing unmodified nomogram. The effect of arcuate keratotomies on CA remained stable over 12 months.