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Anterior Segment

SRK-T versus Kane Formula for Refractive Prediction after Phacoemulsification: A South Asian perspective

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Introduction: Phacoemulsification is the most commonly performed ocular procedure. Biometry is an art with generations of formulas having been introduced for better refractive prediction. The Sanders Retzlaff Kraff theoretical (SRK/T) is a third-generation formula combining linear regression and a theoretical eye model. The Kane formula is a fourth-generation formula incorporating theoretical optics, regression and artificial intelligence.

Purpose: Our objective was to compare post-operative refractive outcome with the SRK/T and Kane formulae for intraocular lens (IOL) power calculation in senile cataract patients undergoing phacoemulsification with a hydrophilic acrylic, monofocal IOL.

Methods: 74 eyes of 70 patients, 65 (93.24%) females and 5 (6.76%) males were recruited in this prospective, interventional, institutional study and divided into two groups; Group A receiving IOL power calculation with the SRK/T, and Group B receiving IOL power calculation with the Kane formula. Quantel Medical® A-scan biometer was used. Both formulae were compared in terms of mean absolute error (MAE) and median absolute error (MedAE). SPSS 20 with p-value 0.05 was used.

Results: MAE for the SRK/T and Kane formulae was 0.18 ± 0.82 D and 0.24 ± 0.94 D, respectively, whereas the MedAE was 0.16 D and 0.155 D respectively (p 0.05).

Conclusions: The SRK/T formula has a slightly better refractive outcome in our South Asian cohort.

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Acanthamoeba keratitis: 14 cases treated with polihexanide 0.08% in monotherapy

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Purpose

To report efficacy and safety topical PHMB (polihexanide) 0.08% (0.8 mg/ml) in monotherapy for Acanthamoeba Keratitis (AK) treatment.

Methods

We report 14 cases with AK. Principal inclusion criteria were 12 years of age or older, clinical findings consistent with AK and positive Acanthamoeba PCR. Principal exclusion criteria were concurrent herpes or fungal keratitis and use of antiamebic and antifungal therapy. During 6 months in every case, we treated all the patients with this regimen (daily time only): 1 drop every hour (day 1 to 5), 1 drop every 2 hours (day 6 to 12), 1 drop every 3 hours (day 13 to 20), 1 drop every 4 hours (day 21 to resolution). The medical cure was defined as complete clinical resolution visualized by slit lamp and absence of corneal inflammation. The main outcome measure was clinical findings within 6 months, and secondary outcomes including best corrected visual acuity. Safety outcomes included adverse event rates.

Results

Fourteen eyes of AK with variable severity received PHMB 0.08% at the described regimen (Stage 1=3, Stage 2= 3, Stage 3=1, Stage 4=4, Stage 5=3) . Ten eyes were contact lens wearers. The medical cure rate within 6 months was 100% with complete resolution in 14 cases. The median time of treatment was 122 days. Secondary outcomes were median best-corrected visual acuity of 20/20. 2 of 10 patients required Optic Penetrating Keratoplasty due to the severity of the infectious process and the central leucoma. No drug-related adverse events occurred.

Conclusion

PHMB 0.08% monotherapy may be effective for Acanthamoeba keratitis with medical cure rates of more than 85%.

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Improving Visual Access in Geriatric Inpatients: Addressing Unmet Needs for Corrective Lenses in Hospitalised Elderly Patients

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Vision impairment in elderly patients is a critical issue, contributing to increased risks of falls, worsening cognitive decline, and reduced quality of life. Despite this, many hospitalised geriatric patients do not have access to their glasses, leading to avoidable difficulties during their stay. This quality improvement project aimed to assess the availability of glasses among geriatric inpatients and the potential impact of visual impairment on their hospital experience.

A survey was conducted in a geriatric ward to evaluate whether patients who required glasses had them readily available. The survey also assessed the type of glasses worn, the recency of eye examinations, and patients' subjective perception of their vision. 100% reported wearing glasses, but only 36% had them with them in the hospital. 64% had left their glasses at home, leading to difficulties with reading and navigating their environment.

These findings underscore the need for systemic changes in hospital care to ensure that corrective lenses are made available to patients. We propose incorporating vision-related questions into the comprehensive geriatric assessment and creating a protocol to contact family members or care homes to bring in glasses. Additionally, raising awareness among healthcare teams about the importance of visual access in patient safety is crucial. By addressing these unmet visual needs, we aim to improve the overall well-being and safety of hospitalised elderly patients.

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Ectropion repair- Lateral Tarsal Strip versus Lateral Wedge Excision repair

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Aims

To compare the functional and anatomical outcomes between Lateral Tarsal Strip (LTS) and Lateral Wedge Excision (LWE) ectropion repair of one surgeon over a one-year period (January to December 2023).

Methods

Retrospective notes review of all involutional ectropion repair that took place under one Oculoplastic Surgeon at Royal Shrewsbury Hospital between January to December 2023. A proforma was created which noted patient demographics, ectropion type, type of ectropion repair, anatomical and functional reports at follow-up and other factors which could have affected post-operative outcome. Fishers exact test was used to identify significant differences between the LTS and LWE groups.

Twenty-seven involutional ectropion corrections were performed. In the LTS group 8 patients and 8 eyes were included. In the LWE group, there were 17 patients and 21 eyes (4 bilateral), although 1 patient did not attend any follow-up and therefore excluded from analysis.

Conclusion

Lateral Tarsal Strip and Lateral Wedge Excision provided similar anatomical and functional outcomes, albeit in a small non-randomised sample. Surgeon preference/skill is more likely to affect the operative outcome as opposed to whether LTS or LWE is used in repair of involutional ectropion.

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Controversies in ocular surface: when eyelids and conjunctiva are the key for the treatment of extreme corneal pathology

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Purpose: to describe therapeutical management of corneal pathology which doesn´t respond to ocular surface therapy by interventions on eyelids and conjunctiva

Methods: description of 2 clinical cases of severe neurotrophic and exposition keratopathy which very bad evolution by the management exclusively of ocular surface, with corneal perforation Surgical management of eyelids and conjunctiva was the key for sucess both pathologies

Results: resolution of both severe keratopathies by different techniques of cornea, conjunctiva and eyelid surgeries, shown by video and images

Conclusions: multidisciplinary management is extremely important to get the resolution of severe corneal pathologies, like in these cases of neurotrophic and exposition keratopathy with high risk of corneal perforation. The knowledge of protection by conjunctival and eyelid procedures is esential for a cornea surgeon

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Russian Experience of Epinastine 0,05% Treatment in Patients with Seasonal Allergic Conjunctivitis

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Purpose. Current study objectives is to compare tolerability and efficacy of dual-action topical antihistamines – Epinepta® (epinastine 0,05%), olopatadine 0,2%, olopatadine 0,1%, in patients with hay fever conjunctivitis in standard clinical practice. Materials and methods: 33 patients (66 eyes) with seasonal allergic conjunctivitis were divided into 3 equal groups: group 1 – epinastine 0,05%, group 2 – olopatadine 0,1%, group 3 olopatadine 0,2%. Symptoms severity were assessed using itching scale, Efron hyperaemia scale, eyelid swelling scale, P. Munk lacrimation scale. Dry eye symptoms were assessed with Shirmer test, Norn probe. Duration of therapy was 14 days. *Results.* By the study end tear film break up time increased from baseline 9 to 10 seconds in epinastine 0,05% group, while in olopatadine 0,1% group it decreased from baseline 14 to 12 s, and in olopatadine 0,2% group the decrease was from initial - 11 to 9 seconds. *Conclusion.* Epinastine 0,05% had drying effect in a lesser degree than olopatadine 0,1% and olopatadine 0,2% and was well tolerated.

Anterior Segment

Optimising Toric Intraocular Lens Selection in Cataract Surgery: A Real-World UK Audit Identifying Challenges in Hyperopic Outcomes

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Background
Toric intraocular lenses (IOLs) correct corneal astigmatism in cataract surgery, improving postoperative spherical equivalent (SE). While widely studied in myopic patients, real-world data on hyperopic eyes remain limited. This audit examines SE outcomes in astigmatic patients receiving toric IOLs, revealing unexpected SE worsening in hyperopic patients.

Methods
A retrospective audit was conducted at East Lancashire Hospitals NHS Trust on 17 patients undergoing cataract surgery with toric IOLs. SE was calculated pre- and postoperatively using SE = Sphere + (Cylinder/2). Patients were stratified by pre-op SE severity, with primary outcomes assessing mean SE change and subgroup differences.

Results
Mean SE improved from -1.59 ± 4.39D pre-op to -0.33 ± 0.78D post-op (p 0.001).
High myopes (-6D) showed the greatest benefit (+8.00D SE shift).
Moderate myopes (-6D to -3D) improved by +3.50D.
Hyperopic patients (+3D) worsened (-3.00D shift post-op), suggesting issues in lens power selection.
58.82% improved, while 41.18% worsened, predominantly affecting hyperopes.
Conclusion
Toric IOLs effectively improve SE in myopic astigmatic patients, but hyperopic patients exhibited unexpected worsening. While our hyperopic sample was small (n=2), this raises concerns about biometric calculations and toric IOL selection in hyperopes. Larger prospective studies are needed to assess whether current formulas require refinement.

Clinical Impact
This real-world NHS audit highlights potential challenges in hyperopic toric IOL selection, suggesting a need for improved preoperative planning to optimize outcomes. Future research should explore toric IOL alignment precision, biometric formula adjustments, and posterior corneal astigmatism to prevent residual refractive errors.

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DMEK after TASS for methylene blue

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Purpose

A clinical case of TASS (toxic anterior segment syndrome) is presented to highlight the importance of this rare but sometimes preventable syndrome.

Methods

A 67-year-old woman with no medical history underwent cataract surgery on the right eye. During the operation, as the capsule was not correctly visualised for capsulorhexis, trypan blue stain was requested and a syringe filled with 1% methylene blue was mistakenly inserted. After instillation, the anterior chamber was washed intensively, and the surgery was completed. Outpatient corticosteroid treatment was intensified.

Biomicroscopy revealed diffuse stromal oedema with descemet 3+ folds and fluorescein-negative bullous keratopathy. Subtenon triamcinolone was administered, and treatment with anti-oedema eye drops.

After three months of check-ups and treatment, the visual acuity is 1 metre finger count. OCT SA was performed on the right eye: stromal oedema without fibrosis with pachymetry 994 µm.

Results

It was therefore decided to perform Descemet`s membrane endothelial keratoplasty (DMEK). DMEK was performed with great technical difficulty due to the lack of visibility, but with a great result. Five months after the procedure, the cornea was still clear with DMEK adhered and a visual acuity of 0.7 was achieved.

Conclusions

TASS is a rare and potentially predictable complication of anterior segment surgery. It is a non-infectious form of inflammation that can be related to agents or instruments that can access the anterior chamber. It usually responds to intensive therapy with topical corticosteroids but in other circumstances, as in our case, it requires more specific techniques to recover.

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Interphase epithelial growth after myopic FemtoLASIK

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Purpose

Given the rise of refractive surgery, it is essential to be aware of and treat the possible complications associated that occur in our routine clinical practice.

Methods

A 45-year-old man with no general history underwent refractive surgery for myopia using femtoLASIK. It was decided to operate on the OD and the patient was subjectively well after the operation. The post-procedural AVsc was 1 with refraction 0, -0.25 X 7º.

Six months after the procedure, she consulted for starting to experience loss of vision accompanied by the perception of a ‘spot’ in the visual field of the OD.

Biomicroscopy of the OD shows the appearance of an area of epithelial growth (EC) in the upper nasal region directed towards the visual axis. The corneal topography shows the irregular astigmatism and OCT SA confirms this CE.

Results

Given the loss of visual acuity and associated symptoms, the LASIK flap is lifted, the interface epithelial cells on both sides are mechanically scraped and irrigated with double distilled water to promote adhesion of the repositioned flap. At six months, visual acuity is almost 1.0.

Conclusions

CE is characterised by the infiltration of corneal epithelial cells at the interface between the flap and the stroma after LASIK. The incidence varies between 0.5-10%. Most cases are asymptomatic, although 1% to 3% require surgical treatment due to clinically significant CE such as the case presented. Visual prognosis will vary depending on the location and severity.

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The challenge of ligneous conjunctivitis: use of sinthetic duramater and topical enhanced heparin and fresh plasm

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Purpose

To describe a case of ligneous conjunctivitis secondary to a scleral graft surgery, in which plasminogen deficiency was diagnosed.

Methods

A 46-year-old female patient was admitted with bilateral retraction of lower eyelids in the context of inactive thyroid orbitopathy. After surgical treatment with scleral graft, the patient presented a huge inflammatory reaction with hyperaemia and membranous lesions on tarsal conjunctiva.

Along 3 months, inflammatory disease persisted, and membranes progressed to thick masses with a woody-like consistency that replace the normal mucosa.

Facing the possibility of a ligneous conjunctivitis, plasminogen levels test wass conducted, and the result was 25% (normal 75-150%).

At this moment, medical treatment was reinforced with:

- Enhanced Heparin: 2.600 UI/mL hourly
- Fresh plasma: 4 times/ day
- Ciclosporyn 2% 3 times a day topical
- Autologous blood serum 6 times a day topical
- Azathioprine 50 mg/ 8h
- Prednisone 50 mg / 24h

Surgical treatment was also carried out, by the resection of membranes and scleral patches and repairing ocular surface with amniotic membrane, dura patch and triamcinolone under membranes.

Results

Actually, right eye is completely inactive, with a perfect superior tarsus and an inactive membrane on inferior lid. Left eye remains active with membranes in both tarsus.

Conclusions

- When Ligneous conjunctivitis is suspected, it is necessary to check levels of plasminogen
- Treatment is based on immunossupressants, Heparin, Plasmin and Plasminogen
- Caution when take the membranes off because it is possible to reactivate the inflammatory process

Financial disclosure: No

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How to treat epithelial ingrowth into the corneal flap after LASIK

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Presenting clinical cases of epithelial ingrowth into the corneal flap after LASIK surgery and the management of them to solve the problem and don´t progress. Images and video surgery are shown

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Innovative Multimodal Approach to Recurrent Ligneous Conjunctivitis: Surgical and Systemic Management Strategies

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Purpose: To evaluate a novel, multimodal approach incorporating perioperative plasma therapy, amniotic membrane grafting, and immunomodulatory treatment in a paediatric patient with recurrent ligneous conjunctivitis and a reduced plasminogen level. This case highlights the effectiveness of an evolving treatment paradigm in improving disease control and visual prognosis.

Setting/Venue: Tertiary Paediatric Ophthalmology Unit, Alder Hey Children`s NHS Foundation Trust, Liverpool, UK.

Methods: A retrospective case review of a paediatric patient with recurrent ligneous conjunctivitis unresponsive to conventional treatments. The patient underwent multiple surgical excisions of tarsal conjunctival membranes, supplemented with adjunctive therapies including autologous serum eye drops, topical steroids, antibiotics, and cyclosporine (Verkazia). Systemic intervention with perioperative fresh frozen plasma was introduced during the third surgery to address the patient`s reduced plasminogen level. Amniotic membrane grafting was subsequently incorporated to enhance epithelial healing. Outcome measures included membrane recurrence rate, visual acuity, and intraocular pressure (IOP) stability.

Results: The patient underwent three surgical excisions over a 24-month period. Histopathological analysis consistently confirmed ligneous conjunctivitis. Following conventional surgical excision, recurrence occurred within six weeks, despite intensive topical immunosuppressive therapy. The introduction of perioperative fresh frozen plasma infusion extended recurrence-free duration to six months. Amniotic membrane grafting further enhanced conjunctival healing, reducing postoperative inflammation. Visual acuity improved from 0.36 pre-operatively to 0.16 post-operatively, with IOP remaining stable at 14–16 mmHg. No corneal involvement was observed.

Conclusions: This case demonstrates the evolving role of systemic plasminogen therapy and adjuvant surgical techniques in managing recurrent ligneous conjunctivitis. The integration of perioperative plasma therapy, amniotic membrane grafting, and topical immunomodulation resulted in a significantly longer disease-free interval than conventional therapy alone. This suggests a promising strategy for long-term disease control and visual preservation. Further research into plasminogen supplementation and targeted immunotherapy is warranted to establish standardized treatment protocols for this rare and challenging condition.

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Atypical Iridocorneal Angle Metastasis in a Patient with Choroidal and Systemic Metastases from Breast Cancer

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Purpose:
To describe an unusual case of iridocorneal angle metastasis in a patient with stage IV breast cancer and concurrent choroidal and systemic metastases, highlighting its clinical presentation, progression, and survival outcome.

Methods:
A 37-year-old female with metastatic ductal breast carcinoma undergoing capecitabine treatment was referred for suspected choroidal metastasis in the right eye. Initial ophthalmologic examination revealed an exudative choroidal detachment with a choroidal lesion (2.14 × 2.98 mm) and mild vitritis. The anterior segment was unremarkable except for a C2 cataract. Given the systemic disease status, observation was chosen.

One month later, round, white-creamy lesions infiltrating the nasal iridocorneal angle (from 1h to 6h) were detected, extending concentrically and contacting the lens at 4h, with ciliary body involvement confirmed by ultrasound biomicroscopy. Anterior chamber Tyndall was 2+, intraocular pressure remained within normal limits (10/11 mmHg), and the patient remained asymptomatic. A PET-CT scan showed no ocular uptake. Due to systemic disease progression, invasive procedures were deferred.

Results:
After two months, clinical and ophthalmological findings remained stable. The patient voluntarily discontinued ophthalmologic follow-ups but continued chemotherapy (taxol). Her survival from ocular metastasis onset was 15 months, exceeding the reported 7–9 months for similar cases. We present exceptional high-resolution anterior segment photography documenting this rare presentation.

Conclusion:
This case highlights the rare presentation of iridocorneal angle metastasis coexisting with choroidal and systemic metastases while maintaining normal intraocular pressure. Despite extensive disease, the patient demonstrated an unexpectedly prolonged survival.

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Scleral patch graft for atraumatic corneal perforation: a case report

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PURPOSE:
The aim of this case report is to raise awareness of the utility of scleral patch graft as a tool for corneal perforations, as well as to remind clinicians the key points for its management.

METHODS:
We present the case of a 64-year-old man with painless decrease in visual acuity of his left eye for seven days, with no history of trauma, infection or autoimmune disease. As personal background, he presented entropion surgery two years before and pterygium surgery with conjunctival autograft the year before, both on left eye and with satisfactory result. The slit-lamp examination showed a 4-mm irregular perforation in the lower peripheral cornea, with iris herniation and athalamia. The initial approach was a multilayer amniotic membrane transplantation, with therapeutic failure in the immediate postoperative period. Consequently, an urgent lamellar scleral patch allograft was indicated.

RESULTS:
The scleral patch graft was carried out, with single stitches and inferior conjunctival advancement in order to cover as much graft as possible. The following day, anterior chamber depth had recovered and Seidel sign was negative. One month later, the graft and conjunctiva remained settled and visual acuity was 0.1 (decimal notation) despite 6 diopters of irregular astigmatism.

CONCLUSIONS:
Scleral patch graft represents an underestimated tool for corneal perforations, especially in peripheral ones for its lack of transparency, and must be taken into account by clinicians, both as a temporary and definitive solution.