EOS 1902

In collaboration with:

MEACO
MIDDLE EAST AFRICA COUNCIL OF OPHTHALMOLOGY

INTERNATIONAL CONGRESS OF THE

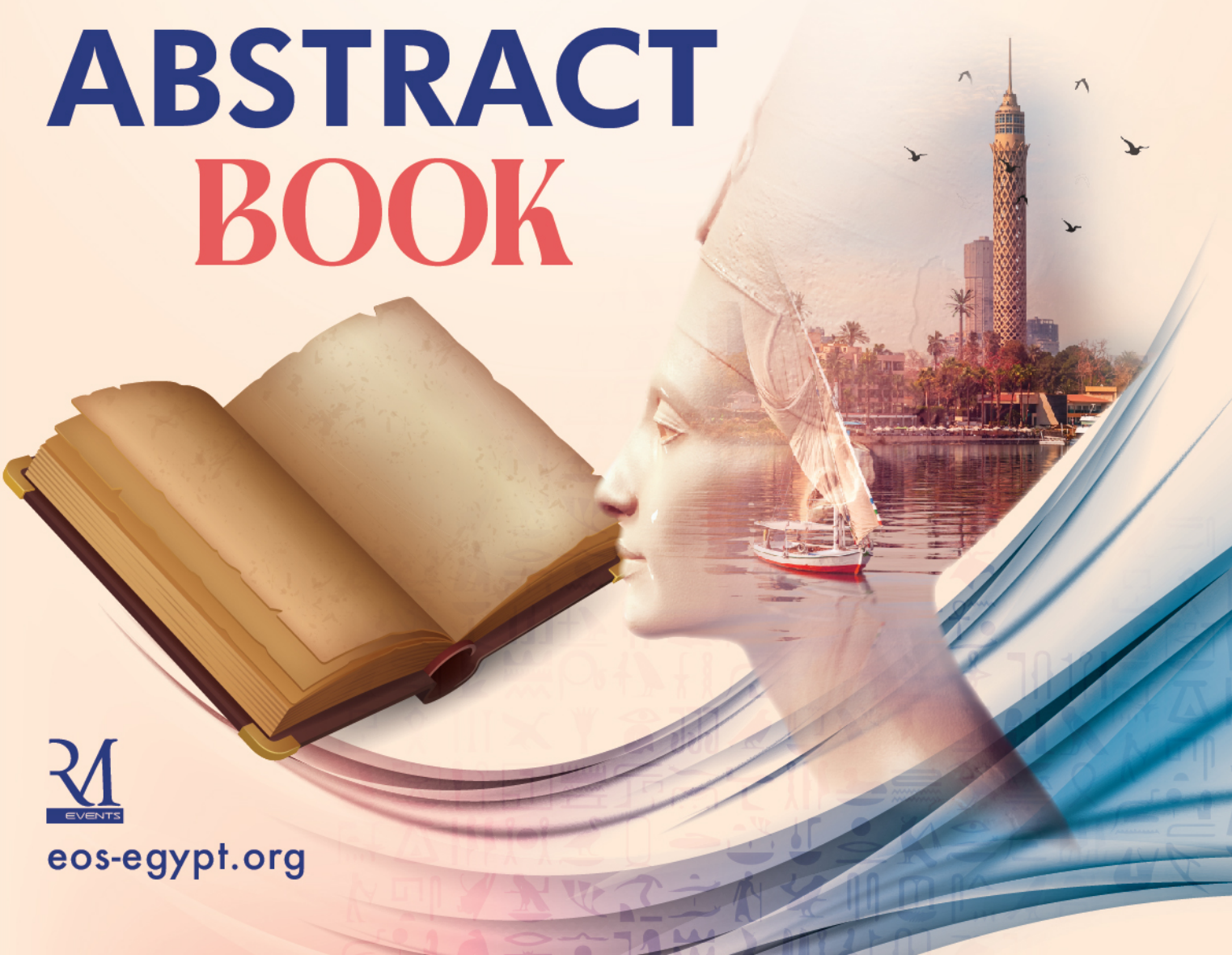
EGYPTIAN OPHTHALMOLOGICAL SOCIETY

EOS 2025

7-9 MAY, 2025

INTERCONTINENTAL CITYSTARS, CAIRO, EGYPT

ABSTRACT BOOK



RM EVENTS

eos-egypt.org

Free Paper: Anterior Segment 1

Abstract Title: Refractive Corneal remodeling with ACXL in early KC cases

Main author: Mohamed Reffat Ahmed

Abstract:

Total WFG PRK and ACXL Early visual rehabilitation and stability for early KC patients A case study

Purpose:
To evaluate the early visual and refractive outcomes after wavefront guided Photorefractive Keratectomy (WFG PRK) with accelerated corneal crosslinking (ACXL) in early keratoconus eyes. Patient and methods This is a group of cases with same approach, but one case will be presented as a case study. Further cases needed to verify a statistical analysis on results.
Introduction:
Clinical management of keratoconus and other ectatic disorders involves many challenges:
1- To meet patient expectations of this group of patients which are almost young patient group with a real need for rapid rehabilitation with rapid lifestyle.
2- To get most of the vision affected, targeting the main issue of visual impairment which is HOA. Oliveira CM, Ferreira A, Franco S. Wavefront analysis and Zernike polynomial decomposition for evaluation of corneal optical quality. J Cataract Refract Surg. 2012;38(2):343–56.
3- To stabilize the cornea and prevent deterioration.
4- To avoid corneal flattening which can occur with standard CXL procedures (Dresden protocol).
Case presentation:
A case of a young lady 26 years with steep cornea and moderate myopia with HOA map showing high vertical, trefoil and coma aberrations Upon presentation, this is preoperative examination:
1- UCVA 0.1 which corrected to BCVA 0.2 with refraction of -5.5 – 3.00 @30
2- HOA map shows 1.55 um of aberrations mostly of vertical coma with disturbed PSF, image
3- Pentacam shows inferior steeping with post elevation point corresponding to it by +38 um with IS disparity by near 3 dioptres image 2.
Total WFG PRK was done with TECHNOLAS® TENEO™ 317 Model 2 Excimer Laser with targeting wide diameter treatment to overcome aberrations burden. With technolas teneo , maps predicting post operative ablation profile, Post operative K readinds and axial maps can be generated on the machine permitting changes before intervention. Here no mitomycin was introduced which can result in corneal haze .. shady,, [J Refract Surg. 2021;37(2):83–90.]

Aim of the procedure is to eliminate HOA not correcting refractive error, with around 50 um ablation The corneal epithelium has been already removed with PTK step.
Riboflavin ophthalmic solution 0.1% with hydroxypropyl methylcellulose was applied at 2-min intervals to complete a total of 10 min of soaking time. Next, the cornea irradiated a power 10 mW/cm2 (illumination time 9 min) .

Post operative examination:

1- UCVA improving throughout 6 month and stable for a year now with a refraction of – 0.50 / 0.75 @60
2- Post operative pentacam.
3- post operative HOA maps.. improving
4- Post op AS OCT revealing so gentle demarcation line
Inclusion Criteria

- For a KC patient which is not so early or so late

- Mix of moderate Myopia and astigmatism

- Suggested TTT option is to offer CXL and wait for follow upwith no useful vision- Could we offer an alternative way for a better vision.

- TWFG PRK– Simultaneous ACXL resulted in significant gains in CDVA without compromising CXL efficacy over a 24-month follow-up.

Gore, Daniel M. MD. Journal of Cataract & Refractive Surgery 44(5):p 571-580, May 2018 Selective transepithelial ablation with Simultaneous accelerated CXL for corneal regularization of keratoconus:

STARE-X protocol

Miguel Rechichi 1, Cosimo Mazzotta, . Journal of Cataract & Refractive Surgery. 2021 Nov 1;47(11):1403- 1410

Conclusion:

Treating HOA with ACXL with wide zone treatment can result in significant gains in UDVA without compromising CXL efficacy and could be a promising technique for rapid visual rehabilitation meeting young patients' expectations.

Many factors needed to be incorporated in analysis (Al could be promising for this huge data analysis)

Recent Aberrometers (Z wave here) can provide a precise data for HOA treatment in spite of abnormal Corneas

Abstract Title: Clinical and Visual Outcomes of Transepithelial Photorefractive Keratectomy after Myopic Correction in A Private Clinic in Benghazi Using Schwind Amaris

Main author: Hamad Elzarrug

Abstract

Purpose:
This study aimed to assess the results of correcting myopia with transepithelial photorefractive
keratectomy (TransPRK) performed using the Schwind Amaris Machine.
Materials and methods:
A total of 44 eyes have been included in this prospective study. The preoperative sphere was between (-1.25 and -8.00 DS), while the preoperative cylinder dioptres varied from (-0.75 to -5.00 DC). Before surgery and three months later, measurements were conducted to evaluate uncorrected (UDVA) and corrected (CDVA) distance visual acuity. The study focused on both clinical and visual outcomes.
Results:
Following Three months after TransPRK, the included eyes had an uncorrected distance visual acuity better than or the same as preoperative CDVA; no patient showed loss of two lines; 31.8% (14 eyes) maintained the same level; 54.5% (24 eyes) improved by one line; 11.3% (five eyes) improved by two lines; and the remaining 2.2% (one eye) had a decrease of one line. The slit lamp exam post-operatively shows complete epithelial healing within five days, but only 4.35% (one candidate) show grade 1 central haze.
Conclusion:
TransPRK is a reliable and effective option for managing myopia safely.
Keywords:
Trans epithelial photorefractive keratectomy, keratorefractive surgery, Myopia, Astigmatism

Abstract Title: Outcomes of Limbal Stem cell Transplantation in Limbal stem cell deficiency

Main author: Mohamed Mostafa Mostafa Rezk

Co-authors: 1. Amr Ibrahim Sharawy

2. Shereef Abdelwahab

3. Ahmed Shereen Bayoumy

4. Mohamed Gamal Masoud

Abstract

Purpose:
To evaluate the surgical outcomes and possible complications of limbal stem cell transplantation procedures including keratolimbal autograft (KLAU) transplantation and keratolimbal allograft (KLAL) transplantation.

Methods:
This prospective interventional clinical trial included “17 eyes” of patients (with mean of age of 56.56 ±7.53 years) with limbal stem cell deficiency (LSCD), at Benha University Hospitals, in between May 2022 & May 2024.

Results:
The obtained results of this study showed a statistically significant difference (improvement of VA) between pre-operative and post-operative (after 3 Months) visual acuity among studied eyes (p-value 1 <0.05). It showed a statistically significant difference between surgical outcomes in Keratolimbal Autograft procedures.

Conclusion:
This study reported that limbal stem cell transplantation procedures includingkeratolimbal autograft (KLAU) transplantation and keratolimbal allograft (KLAL) transplantation in cases of LSCD had favorable surgical outcomes.

Keywords:
Cornea; Limbal stem cells (LSCs); Limbal stem cell deficiency (LSCD); keratolimbal autograft (KLAU); keratolimbal allograft (KLAL).

Abstract Title: Epithelial thickness mapping: mechanical photorefractive keratectomy versus transepithelial photorefractive keratectomy

Main author: Ahmed Fawzi Elshahed

Abstract

Aim:
The aim of this study was to compare mechanical photorefractive keratectomy (PRK) to transepithelial photorefractive keratectomy (tPRK), used to correct mild and moderate myopia, with respect to the epithelial thickness mapping (ETM).
Setting:
The study was carried out at Al-Mashreq Eye Center, Cairo, EGYPT.
Patients and methods:
This is a prospective comparative study that was carried out on 20 myopic patients (40 eyes), with spherical equivalent (SE) ranging from -1.0 to -5.0 diopters (D). The cases were divided into 2 groups; Group-A that included the right eyes (OD) of all patients, and Group-B that included the left eyes (OS).
Group-A underwent mechanical PRK using "Hockey stick" and Excimer Laser, using Mel-90 excimer laser with 250 Hz mode, and 0.7-mm spot scanning. Group-B underwent tPRK using Mel-90 (8-mm lamellar ablation for 55 µm, 250 Hz). Uncorrected visual acuity (UCVA), manifest refraction, and ETM using AngioVue spectral domain optical coherence tomography (SD-OCT) systems were performed. The ETM was measured preoperatively and at 1-week, 1-month, and 3-month postoperatively. In addition, postoperative pain was assessed.
Results:
The median preoperative UCVA was 0.3 (range=0.2-0.4) in both eyes (OU), while the median preoperative best-corrected visual acuity (BCVA) was 1 (range=0.8-1). There was a statistically significant increase in UCVA across the postoperative period in both groups ($p<0.001$). The median UCVA improved to 0.5 (OU) after one week, and to 0.9 (OD) and 1.0 (OS) after one month and remained almost the same at 3-month postoperatively. There was a statistically significant decrease in SE at all points of the follow up period in both groups ($p<0.001$). A slight change in SE was observed between the 1st and 3rd month postoperatively in both groups, which was statistically insignificant. Patients reported postoperative pain on the 1st postoperative day that was more in the tPRK group. There was a statistically significant change in epithelial thickness across the study time in both groups ($p<0.001$). The ETM showed a faster epithelial regeneration in group-B that was statistically significant at 1 week postoperatively ($p=0.004$). The epithelial thickness continued to increase in both groups to reach almost the preoperative value at the 3rd month postoperatively. All cases that showed postoperative haze that was less than grade 1.0 (Hanna's scale).

Conclusion:
Mechanical PRK, and tPRK provided very similar results 3-month postoperatively. Both procedures were predictable, effective, and safe. The patients reported postoperative pain on the 1st postoperative day that was more in the tPRK group. The tPRK group expressed a faster epithelial regeneration than the PRK group at 1 week postoperatively. However, at 3 month post-operatively, the corneal epithelium reached an almost normal thickness in both groups. Visual recovery was noted to be faster in the tPRK group.
Keywords:
Transepithelial photorefractive keratectomy, photorefractive keratectomy, myopia

Abstract Title: Innovative technique for hyperopic treatment

Main author: Karim Gaballah

Co-author: Osama Ibrahim

Abstract

The authors will present an innovative new technique invented by them to do a fast safe and predictable hyperopic PRK for patients with irregular cornea with a follow up period exceeding 7 years.

Abstract Title: Combined wave front guided PRK with corneal collagen crosslinking for irregular cornea- long term study

Main author: Karim Gaballah

Co-author: Osama Ibrahim

Abstract

In this study, the authors will present the results as reguard visual acuity and changes in pentacam and wavefront error for more than 300 patients with keratoconus that were treated with combined wave front guided PRK with corneal collagen crosslinking as well as long term follow up for up to 7 years follow up results in some patients.

Abstract Title: Thyroid gland dysfunction and keratoconus

Main author: Omar Mohamed Said

Co-authors:

1. Mohammed Iqbal

2 Ahmed El-Massry

3 Mervat Elshabrawy Elgharieb

4 Mohamed Mady

5 Ahmed M Sharawy

6 Khaled Abdelaziz

Abstract

Background:
The association between keratoconus and thyroid gland dysfunction (TGD) remains controversial. We aimed to determine the frequency of keratoconus among patients with laboratory-confirmed, treatment-naive TGD compared with that of age- and sex-matched healthy controls. Moreover, we investigated the potential relationship between TGD and corneal topographic and tomographic parameters.

Methods:
This multicenter, cross-sectional study recruited individuals with treatment-naive, laboratory-confirmed TGD and sex- and age-matched healthy controls. Demographic and ophthalmic data of all participants were recorded. All participants underwent comprehensive ocular examinations and corneal tomography. Patterns of symmetric bowtie, asymmetric bowtie, asymmetric bowtie/superior steep, asymmetric bowtie/inferior steep, or asymmetric bowtie pattern with a skewed radial axis were documented if present. Furthermore, the maximum simulated keratometry value (Kmax), corneal thinnest thickness (CTT), and back elevation (BE) values were recorded. We measured the serum concentrations of thyroid-stimulating hormone (TSH) and thyroid hormones (free thyroxine [FT4] and free tri-iodothyronine [FT3]) using an immunoassay method.

Results:
We included 200 eyes of 200 individuals with TGD and 200 eyes of 200 healthy age- and sex-matched controls, with female predominance in both groups. The mean FT4 concentration was significantly higher and the TSH concentration was significantly lower in the TGD group than in the control group (both $P < 0.0001$), whereas the FT3 level was comparable between groups ($P > 0.05$). In the TGD group, the frequencies of hyperthyroidism and hypothyroidism were 190 (95%) and 10 (5%), respectively.

We found significantly lower mean CTT, higher Kmax, and greater BE values with a significantly higher frequency of abnormal topographic patterns among eyes in the TGD group than in controls (all $P < 0.05$).
The frequency of eyes with keratoconus was significantly higher in the TGD (7.5%) group than in the control (0.5%) group ($P < 0.0001$). Except for a statistically significant correlation of Kmax ($r = - 0.23$, $P < 0.05$) and CTT ($r = + 0.15$, $P < 0.05$) with TSH level in the TGD group, no significant correlation was found between corneal characteristics and thyroid profile in either group (all $P > 0.05$).
Conclusions:
We observed a higher frequency of keratoconus, with female predominance, in the TGD group. TGD was associated with significant changes in certain corneal topographic and tomographic parameters. Compared with healthy controls, individuals with TGD demonstrated increased Kmax and BE values with more corneal thinning, highlighting the potential association between keratoconus and TGD.
However, further large-scale longitudinal studies are essential to confirm our findings.

Abstract Title: Report of Descemet-sparing technique for Boston Type I Keratoprosthesis with clinical follow-up

Main author: Mayan Mohamed Khalil Elammary

Co-author:

1. Pratima Vishkawarma

Abstract

Purpose:
To describe the long-term outcome following a modified technique of the Boston Type I keratoprosthesis (KPro) placement over a period of seven years.
Method:
Deep anterior lamellar keratoplasty (DALK) combined with Boston Type I KPro Click-On implantation was performed in a patient with history of uveitic glaucoma, glaucoma drainage device placement and multiple graft failures including four DSAEK (Descemet stripping automated endothelial keratoplasty) for pseudophakic bullous keratopathy followed by PKP (penetrating keratoplasty) .
Result:
Using this modified surgical approach, the patient's right eye vision improved from hand motion pre-operatively to 20/150 on post-operative day one. Six months later, he underwent Nd-YAG laser of an opacified central Descemet's membrane (DM) after which vision improved to 20/80 and was maintained over 7 years. No other post-operative common keratoprosthesis complications occurred. A recent contact lens trial with a correction of -9D , improved vision further to 20/30.
Conclusion:
This modified surgical technique for placement of Type I Boston KPro is less invasive compared to conventional methods and may prevent complications associated with an open-sky surgery making it a safer alternative. Furthermore, when combined with Nd-YAG laser membranectomy of the DM, vision can be further improved.

Free Paper: Anterior Segment 2

Abstract Title: Factors affecting myopic regression after corneal Refractive surgery, A systematic review and meta-analysis

Main author: Mohamed Mahmoud Harras

Co-authors:

1. Mohamed Fawzy
2. Ahmed Zohair
3. Youssef Elgazzar

Abstract

Factors affecting myopic regression after corneal Refractive surgery, A systematic review and meta-analysis

Background:

Rediscovering factors that may impact regression after corneal Refractive surgery that includes environmental factors (near work , out door work, temperature, etc), subjective related factors (Refractive error, topography, AL, ablated depth accomodative functions, etc), type of operation (surface ablation, Smile, Lasik, etc)

This review focused specifically on Which of these factors is more responsible for myopic regression after Corneal Refractive surgery.

Methods:

We included 14 retrospective studies published in pubmed and google scholar between January 2019 to November 2024 about myopia regression after corneal Refractive surgery that were conducted on 13093 eyes, these studies tried to relate regression to specific limited factors (E.g. type of operation or pre operative topography) by comparing non regression groups to regression groups using preoperative and postoperative data.

We gathered these factors, analyze them and compare between these studies results to reach out for the most responsible factors for regression.

Results:

Preoperative high AL and high myopia were responsible in 4 of 4 studies that tested AL (100%), Small optical zone in 5 of 6 studies that tested the optical zone(83%), Postoperative near work and poor accomodative function after operation were responsible in 2 studies of 2 studies that tested neer work (100%), Pre operative Corneal curvature were responsible in 3 of 4 studies that tested curvature (75%), Aspheric ablasion were responsible in 2 sudies, CCT in 2 studies, SMILE and FS-LASIK had a similar postoperative regression rates in 4 of 5 studies (80%).

Conclusion:

Factors that found responsible for myopic regression after corneal Refractive surgery are high AL >26 mm, Small OZ, Post operative excessive neer work, preoperative curvature and CCT, while type of operation has minimal effect on regression

Abstract Title: Transepithelial Photorefractive Keratectomy in Suspect Corneas: A Retrospective Study

Main author: Guesmi Yahia

Co-author: Hammoudi Hakim

Abstract

Introduction:

Transepithelial photorefractive keratectomy (transPRK) is an evolving procedure in refractive surgery, particularly for patients with moderate risk factors identified through topography. This study aims to evaluate the long-term outcomes of transPRK in patients identified as having at least one moderate risk factor.

Methods:

We conducted a retrospective review of medical records from 28 patients who underwent transPRK. Inclusion criteria included the presence of at least one moderate risk factor on preoperative topography. The follow-up period extended to 30 months postoperatively. Parameters assessed included uncorrected visual acuity (UCVA), best corrected visual acuity (BCVA), and any complications related to the procedure.

Results:

Our findings demonstrated significant improvement in UCVA and BCVA across the patient population. The majority of patients achieved satisfactory visual outcomes with minimal complications. Detailed analysis will be provided on the specific risk factors and their correlation with the surgical outcomes.

Discussion:

This study supports the efficacy and safety of transPRK in patients with moderate risk factors identified through topography. The long-term follow-up indicates that with careful patient selection, transPRK can be a viable option. Further research is recommended to optimize patient selection criteria and enhance postoperative management.

Abstract Title: Angle, anterior chamber parameters, and intraocular pressure changes after early phacoemulsification in acute angle-closure glaucoma

Main author: Mohamed Anbar

Co-authors:

1. Hany Mahmoud
2. Marwa Abdellah

Abstract

Purpose:

To evaluate the safety and efficacy of phacoemulsification as a first line treatment of acute angle closure glaucoma (AACG) and to evaluate the preoperative and postoperative anterior chamber angle width and anterior chamber parameters using anterior segment OCT(AS OCT) and Pentacam.

Sittings:

Sohag University Hospital, Sohag city, Egypt.

Design:

Prospective comparative interventional case series study.

Methods:

Patients presented with AACG. After control of high intraocular pressure (IOP), all participants were scheduled for phacoemulsification within a week after the attack. Preoperative and postoperative angle width, anterior chamber volume and anterior chamber depth was measured by AS-OCT and Pentacam to evaluate angle changes.

Results:

Fifty eyes with AACG were enrolled in the study. The mean IOP was lowered significantly from 40.23 ± 10.4 mmHg preoperatively to 11.4 ± 3.3 mmHg 3 months after surgery. The mean preoperative temporal angle widened from 18.13 ± 3.65 degree to 36.16 ± 4.46 3 months after phacoemulsification. Also, the mean preoperative nasal angle widened from 17.80 ± 3.45 preoperatively to 36.18 ± 4.47 3-month
postoperative. The mean preoperative AC volume was 49.4 ± 5.73 µL. After surgery the AC volume increased significantly to 138.2 ± 29.78 µL. The mean preoperative ACD was 1.58 ± 0.12 mm that deepened significantly after surgery to 3.19 ± 0.43 mm.

Conclusion:

Early phacoemulsification is very effective in treatment of AACG cases immediately after medical control of high IOP and resolution of corneal oedema. This was proved by imaging and measuring the angle width, anterior chamber volume and anterior chamber depth using AS- OCT and Pentacam.

Abstract Title: Can you get rid of cataract without surgery

Main author: Hamed Nasr El-Din Taha

Co-author: Ibrahim Elkady

Abstract

Surgery is necessary. once a lens has begun clouding, there is no way to reverse or stop the process. researchers are exploring different ways to treat cataracts, but currently surgery is the only way to actually correct the problem. research explores potential cataract treatment without surgery, including pharmaceutical and therapeutic interventions

scientists in california are investigating a naturally occurring steroid called lanosterol that could be used one day to treat cataracts. it may be possible one day to use lanosterol in the form of a topical eye drop to reduce cataract development. lanosterol eye drops could poten-tially be a safe, non-invasive, and less costly

Patients and methods:

This study was done in al-azhar university ,bab-el-sharia hospital.it included 20 eyes of 16 patients. All patients has early cataract,posterior sub capsular ,nuclearor and or cortical cataract.

Pupillary dilation subthreshould diode laser were applied to the cataractous sits.

each eye received 250 to 500 laser shots in erery sitting. The IOP, v a and eye examation were done every visite to the clinic bbfor laser treatment.

Results:

We found that the cataract densty decrese during and after treatement, visual acuity increased 2 to 3 lins of isnellin charts.we found that the IOP increase after each sitting and controlled by beta blockers. 6 patients had vitreous floaters which were disapeared after one month of treatement.

Conclusion:

this is the first method of non surgecial thratement of cataract. It is safe easy and effective way of cataract treatment large number of patients and longer follow up are needed for more evaluation.

Free Paper: Retina

Abstract Title: Scleral buckle plus Vitrectomy for retinal detachment with PVR

Main author: Mohamed Ahmed El Massry

Abstract:

Proliferative Vitreoretinopathy is the main cause of recurrence of rhegmatogenous retinal detachment.

Placing an encircling Scleral buckle combined with vitrectomy may decrease the incidence of recurrence of retinal detachment. This is a case series demonstrating the effect of Scleral buckle combined with PPV on the retina in primary cases, recurrent cases, and during silicone oil removal.

Abstract Title: Clinical uses of Subliminal (Micropulse) Laser

Main author: Kariman Gamal Tamam

Abstract:

The subthreshold micropulse yellow laser, also known as Subthreshold or Micropulse laser, uses a wavelength of 577 nm (Iovino et al., 2023).

It produces minimal or no damage to the tissues with no visible signs post-application (Grzybowski et al., 2024) .

It is employed in the treatment of various chorioretinal disorders (Iovino et al., 2023) (Verdina et al., 2020) (Grzybowski et al., 2024) (Değirmenci et al., 2018).

Mechanism of action:

The laser induces a biological response without causing thermal damage to the targeted tissue.

It involves delivering subthreshold energy to stimulate the production of heat-shock proteins, which protect cells against stress by blocking apoptotic and inflammatory pathways. This leads to the resolution of subretinal and intraretinal fluid.

(Iovino et al., 2023).

Indications:

• Central serous chorioretinopathy (Vignesh, 2019)

• Diabetic macular edema (Xu et al., 2013).

• Pseudophakic cystoid macular edema (Verdina et al., 2020).

• Cystoid macular edema secondary to retinitis pigmentosa (Arslan, 2020)

Chronic CSR:

Central Serous Retinopathy (CSR) is characterised by focal leakage from the choriocapillaris through the retinal pigment epithelium (RPE), leading to detachment of the neurosensory retina.

CSR is typically self-limiting but may lead to permanent visual impairment in some cases.

CSR can be challenging to treat[3], as focal lasers may cause scarring and visual loss (Hamoud & Younis, 2018). When it comes to treating CSR, the micropulse laser is a promising method, as it stimulates the RPE to drain excess fluid without harming the inner retina or causing scarring (Vignesh, 2019).

Both continuous laser (CL) and micropulse laser (ML) therapies are effective in managing CSR, although

CL is more effective in reducing subfoveal choroidal thickness (SFCT).

the treatment also leads to a reduction in subretinal fluid height without causing thermal damage to the retina (Amoroso et al., 2021).

ML is also considered more effective and less harmful than CL in treating chronic CSR (Piasecka et al., 2020).

Case:

Male patient, 39 yrs old, had CSR of 2 years duration.

With V/A 6/36 Macular thickness 458 Received micropule (subliminal) pattern yellow laser 3 session every week V/A improved to 6/9 within 1 month of the last session and macular thickness improved to 190

Conclusion:

Subliminal lasers are a promising new method for treating various eye diseases without causing damage to the tissue. They are a good alternative to conventional treatments and have been shown to be safe and effective in multiple clinical studies (Ahmed & Abu-El-Goud, 2022) (Grzybowski et al., 2024)

Abstract Title: Clinical uses of Subliminal (Micropulse) Laser

Main author: Saifeddin Akram Krewi

Co-author: Mawdda Faruk Benhamza

Abstract:

Background:

The accurate identification and characterization of vitreous separation remains an important area of clinical evaluation and can have important consequences for preoperative planning for vitrectomy (1).

Objective:

The study is dealing with proper understanding of vitreoretinal interface and PVD features by using OCT imaging. By using this technic, I will address different stages of PVD on OCT by assessment of Peripapillary Vitreoretinal Interface (PVI) patterns by age using RNFL scan protocol. A simple few second OCT scan, we can accurately stage PVD.

Methods:

The study is a cross-sectional descriptive study. It is conducted at Tripoli Eye Hospital for 5 months duration in 2023. Fifty patients are included in this study by using OCT imaging. The data is obtained from the patient's questionnaire on different parameters such as age, sex, any eye symptoms, any eye diseases, and any eye surgery. Age of patient will be between 15-70 years old. Data is analyzed by SPSS version 16.

Result:

A total of 50 participants were a mean age (56±15.85) year old, were male 21 (42%) and female 29 (58%). A 82% of patients were married and 56% have chronic diseases. The PVD classification based on OCT imaging, the study showed the following. Stage A 22(44%), B 14(28%), C 8(16%), C+ 4(8%), D 2 (4%).

Conclusion:

The study showed most of Posterior Vitreous detachment occurs at stage A. The age distributions of different stages are occurred at age between 40 and 80. OCT imaging has many applications in assessment of vitreoretinal interface.

Abstract Title: Surgical treatment of chronic macular hole by hydraulic mobilization of the central parts of the retina.

Main author: Rusanovskaia Anna

Co-authors:

1. Farkhutdinova Aigul
2. Abbas Zghaib

Abstract:

Objective:

To evaluate the safety and effectiveness of the technique of hydraulic mobilization of the central parts of the retina in the surgical treatment of chronic macular ruptures.

Materials and methods. 11 patients (11 eyes) with chronic macular rupture were under observation.

All patients underwent a standard 3-port seamless 25-gauge vitrectomy with removal of the cortical layers of the vitreous body to the equator. After staining, the inner boundary membrane was removed according to the standard procedure. To mobilize the retina around the rupture, subretinal injections of a balanced saline solution were performed within the maculorexis area using a PolyTip 25/38 subretinal cannula connected to a syringe filled with BSS. Subretinal injections were performed using a four-point method.

The criterion for the end of the injection was the appearance of a wave of liquid from the injection site to the edge of the rupture. All four waves should be connected 360 degrees around the gap. During this procedure, the infusion pressure was temporarily reduced to 15 mmHg. Next, the fluid was replaced with air with drainage of subretinal fluid through a macular rupture. The operations were completed either by tamponade of the vitreal cavity with air, or 16% hexafluoroethane (C2F6) After surgery, the patients were in the "face down" position for 3 days.

Results and discussions:

Complete anatomical closure of the macular rupture was achieved in all cases. The closure of the gap was stable throughout the entire observation period. There were no complications associated with retinal mobilization. The average value of the maximum corrected visual acuity (CMOS) in the affected eye before the intervention was 0.05 ± 0.01. The postoperative mean CMOS was improved to 0.4 ± 0.23. CMOS values after surgery were significantly increased in all cases (P = 0.001).

Abstract Title: Uveomeningeal syndrome

Main author: Eman Said Ahmed El Banna

Abstract:

Oral presentation with power point Uveomeningeal syndrome is considered one of the most challenging diagnoses in ophthalmology, defined as a heterogeneous group of disorders which associate encephpathy and uveitis Including, inflammatory, infectious, neoplastic causes

Case scenario

44 ys male patient was referred from fever hospital, already diagnosed as bacterial meningitis,trial of Antibiotics,no improvement

Acutely the patient experienced

Loss of vision in both eyes

H.M in both eyes

Ex revealed

Bilateral vitritis

Bilateral optic neuritis

Bilateral granulomatous uveitis

FA

OCT

Lab investigations

Ordered

Diagnosed as saroidosis as aon of the causes of uveomeningeal syndrome

Treated with immunosuppressive drugs,intravitreal steroid

Result was marvellous

Free Paper: Glaucoma, Pediatric and Oculoplastic

Abstract Title: The Impact of Phaco-GATT on corneal endothelial integrity

Main author: Majdi Abdala

Co-authors:

1. Amr Samir
2. Nadia Geilani
3. Suliman Nashad

Abstract:

Background and Purpose:

This study aimed to evaluate and compare the impact of phacoemulsification (Phaco) and combined phacoemulsification with gonioscopy-assisted transluminal trabeculotomy (Phaco-GATT) on corneal endothelial morphology. The focus was to assess endothelial cell density (ECD), central corneal thickness (CCT), corneal volume (CV), coefficient of variation (CV) of cell size, and hexagonal cell percentage in patients with similar lens opacity grades and matched baseline characteristics.

Methods:

A prospective study was conducted between April 2024 and October 2024 with strict inclusion

criteria, including patients with similar cataract grades. A total of 100 eyes from 73 patients were included (50 Phaco-GATT, 50 Phaco). All surgeries were performed by the same surgeon using Stellaris® phacoemulsification equipment and the Topcon SP specular microscope for endothelial assessment. The lens opacity was graded similarly in both groups. Measurements were taken preoperatively and at 1 and 6 months postoperatively to assess CCT, ECD, corneal volume, CV, and hexagonal cell percentage.

Results:

Preoperative CCT was 547 ± 38 µm for Phaco-GATT and 551 ± 29 µm for Phaco (p=0.9811). At 6 months, there was no significant difference in CCT between groups (Phaco-GATT: 552 ± 32 µm, Phaco:

559 ± 31 µm; p=0.0741). Preoperative ECD was similar between groups (Phaco-GATT: 2408 ± 362 cells/mm²; Phaco: 2421 ± 304 cells/mm²; p=0.8501), with comparable reductions at 6 months (Phaco- GATT: -15.7%; Phaco: -16.5%; p=0.3071). No significant differences were observed in the coefficient of variation (p=0.6211) or hexagonal cell percentage (p=0.6581) at 6 months.

Conclusion:

Both Phaco and Phaco-GATT led to comparable endothelial morphological changes, with no significant differences in corneal thickness, volume, or endothelial cell integrity. These findings suggest that adding GATT to phacoemulsification does not significantly impact corneal endothelial health, supporting its safety in combined cataract and glaucoma surgery

Abstract Title: Ahmed ClearPath implantation in refractory glaucoma: Is it really worth?

Main author: Yasser Aly Hamed

Abstract:

Clear path device is a new shunt for glaucoma management, which patient is suitable for this device with surgical tricks during implantation, postoperative follow up and complication management.

Abstract Title: Bilateral lateral rectus recession versus bilateral lateral rectus recession and one medial rectus resection in correction of exotropia

Main author: Shireen Mostafa

Co-authors:

1. Reham Fawzy Elsherbiny
2. Lobna Mohamed Khazbk
3. Sameh Galal Taher

Abstract:

Purpose:

The aim of this study was to compare the results of bilateral lateral rectus (BLR) recession to combined BLR recession and one medial rectus (MR) resection in concomitant exotropia (XT) of 40–55 prism diopters (PD).

Patients and methods

This is a prospective randomized clinical trial that was conducted on 69 XT patients, divided into two groups; group A: BLR recession (n=39 patients) and group B: BLR recession+MR resection (n=30 patients). All study patients were subjected to routine preoperative evaluation, operative procedure in standardized numbers and technique and postoperative follow up to 6 months for alignment in the primary position, ocular motility, and palpebral fissure height (PFH) measurement.

Results:

At the 6-month follow up visit, the success rate (patients with postoperative results ≤8 PD of orthophoria) was 66.7% in group A compared to 73.3% in group B, with no statistically significant difference (P=0.551). The postoperative PFH wasmsignificantly different from the preoperative PFH at all follow-up visits in both groups. In group A, the preoperative PFH was 10.59±1.23mm and increased to 11.40±1.26mmat 6 months (P<0.001), while in group B, the preoperative PFH was 10.45±1.36mm and decreased to 10.03±1.33mm at 6 months postoperatively (P<0.001), with a noted higher mean of postoperative PFH in group A by 7.6% and a lower mean of postoperative PFH in group B by 4%. In group B, the eye with single LR recession showed a 2.15±5.26% increase in PFH while the eye with combined recession and resection showed a 9.39±2.99% decrease in PFH. Lateral gaze deficit was related to XT more than or equal to 50 PD as a significant difference was found on comparing the patients with and without lateral gaze deficit for angle of 50 PD (P=0.028) and for angle of 55 PD (P=0.050).

Conclusion:

The three-muscle procedure was as effective as the two-muscle procedure in correction of comitant XT regarding the postoperative alignment. Adding MR resection led to PFH narrowing. Lateral gaze deficit can occur with large lateral rectus recession for XT of 50 PD and more.

Abstract Title: Predictive factors for surgical success of intermittent exotropia

Main author: Ibrahim Elhusseny Eldosoky

Co-authors:

1. Fatma Elrefaai
2. Sahar Eltarshouby

Abstract:

Introduction:

Intermittent exotropia is the most common form of exotropia. It is a major primary comitant form of strabismus in the childhood period. It is defined as an outward ocular misalignment intermittently controlled by fusional mechanism and estimated to be present in 1%–2% of the pediatric population.

Treatment forms can be nonsurgical to restore binocular vision, and normal ocular alignment and build fusional reserves to aid control of exodeviation, such as patching, orthopticm therapy, and over-minus lenses, Astigmatic lenses, part time occlusion and convergence exercises.

Surgery is mainly used to treat intermittent exotropia with a satisfactory outcome.

The commonly used surgical methods for Intermittent exotropia include bilateral lateral rectus recession (BLR), bilateral lateral rectus recession and medial rectus resection in large angel exotropia or unilateral lateral rectus recession (ULR) which is often used to treat small to moderate angle exotropia.

The success was considered when rate in terms of ocular motor alignment of within 10 prism diopters (PD) of orthotropia.

The usual goal of surgery for intermittent exotropia is a small angle of initial postoperative esodeviation because small esodeviation typically recovers to orthophoria within 2 weeks without any manipulations.

There are multiple factors that may affect prognosis of surgery for intermittent exotropia: Preoperative factors include age at onset of (XT), age at time of surgery, family history, and preoperative degree of exodeviation, stereoacuity, degree of control, phase of intermittent exotropia, refractive errors, amblyopia, inferior oblique muscle overaction, DVD, lateral incomitance and type of exotropia.

Operative factors include surgical procedure, the limbal insertion distance (LID) of the LR muscle and tendon width of lateral rectus.

Postoperative factor is the degree of postoperative ocular alignment.

AIM OF THE STUDY:

To evaluate predictive factors affecting surgical outcome of intermittent exotropia.

PATIENTS AND METHODS:

Study design:

This is prospective interventional comparative study.

Study population:

The study will held on 60 out patients attending Mansoura Ophthalmic Center with intermittent exotropia who underwent to bilateral lateral rectus recession or bilateral lateral rectus recession and medial rectus resection or unilateral lateral rectus recession.

Patient selection:

Inclusion criteria

- Patients diagnosed with intermittent exotropia who will undergo to surgery if there is increase in tropic phase of intermittent exotropia , or angle of deviation measures at least 15 PD.
- All patients have New Castle Control Score 3 or more.

Exclusion criteria:

Patients were excluded from the study if they have paralytic strabismus, restrictive strabismus, history of prior ocular surgeries, or systemic disease (such as developmental delay, cerebral palsy, or brain tumor/pathology). Presence of moderate amblyopia in one eye, presence of Nystagmus and diplopia.

Methods:

The following data will be obtained for each participant in the study and from the parents in young children.

A) Detailed history taking

1. Gender.
2. Patient's age at surgery, age of onset and age of diagnosis.

Patients were divided according to age into two groups. Group (1) patients ranging in age from 4 to 10 years. Group (2) patients over 10 years of age, all of whom were diagnosed with Intermittent exotropia and in need of surgical treatment.

3. History of systemic diseases.
4. Family history of strabismus.
5. History of prior strabismus or other ocular surgeries.

B) Through ophthalmic examination including; Preoperative ophthalmologic examination

All patients underwent a complete preoperative ophthalmologic examination including:

1- Preoperative eye examination parameters (visual acuity, spherical equivalent (SE) and refractive error).

Cycloplegic refraction was performed using 1% cyclopentolate eye drops 3 times at 5-minute intervals.

Patients were divided into three groups according to preoperative refractive error: those with spherical equivalent in both eyes ≥+1 D were classified as group I (hyperopic XT group), patients with spherical equivalent of both eyes between −1 D and +1 D were classified as group II (emmetropic XT group), and patients with spherical equivalent of both eyes ≤−1D were classified as group III (myopic XT group) refractive or axial myopia.

2- Ocular motility assessment with duction and version.

3- Sensory function was evaluated using the Titmus or lang test for stereoacuty and the Worth 4-dot test.

4- Measurements of the angle of deviation with and without glasses were obtained in all patients at distance (6 m) and near (33 cm) with accommodative target by alternate prism cover test and modified krimsky test for un cooperative children.
5- Presence or absence of DVD or inferior oblique overaction .
6- Level of control of the intermittent exotropia. The control of exodeviation is assessed using New Castle Scoring and divided into Home control and Office control. Scoring is done for each patient from 0 to 9, with 0 corresponding to the best control and 9 to the worst control.
Score component Home Control – Exodeviation noticed
• Never – 0
• <50% of the time when the child is awake, appears for distance only - 1
• >50% of the time when the child is awake, appears for distance only - 2
• Squinting observed for distance as well as for near fixation – 3
Office Control – while fixating at distance
• Manifests only after cover test, and re-fixates without need for blink (good) –0
• Blinks or re-fixates after the cover test (fair) - 1
• Exotropia remains manifested after cover test, and no recovery happens even with blinking
• Manifests exotropia spontaneously (poor) - 3
Office Control – while fixating at near
• Manifests only after cover test and re-fixates without need for blink (Good) –0
• Blinks or re-fixates after the cover test (Fair) - 1
• Exotropia remains manifested after cover test, and no recovery happens even with blinking
• Manifests exotropia spontaneously (Poor) - 3
Total score = Home control+ Office control (distance) + Office control (near)
7 - Type of exotropia: divided into four groups according to Burian‘s classification.
Basic: distance and near measurements are equal.
Pseudo-divergence excess: distance measurement initially exceeds near measurement, but the near measurement approaches distance after 30-60 min of monocular occlusion (patch test).
True divergence excess: distance measurement exceeds near measurement by >10 prism diopters even after 30-60 min of monocular occlusion
Convergence insufficiency: near measurement exceeds distance measurement by >10 prism diopters.
• Surgical technique
- Surgeries were performed under general anesthesia using the limbal or forniceal approach at Mansoura Ophthalmic Center, Mansoura University.
- Intraoperative parameters (amount of lateral rectus recession, which muscle was operated, type of surgery and tendon width of LR.
- The amount of LR recession is based on Parks Surgical Dose Table.
- The tendon width of the lateral rectus muscle was measured in all patients using a caliber before muscle disinsertion.

- According to intraoperative measurement of tendon width, patients were divided into three groups: Group A (8 mm), group B (8.5-9 mm), group c (9.5mm) .
- Type of surgery:
(Unilateral or bilateral rectus muscle recession or bilateral lateral rectus recession and unilateral LR resection) is done according to the preoperative angle of deviation.
Weakening procedure in case of primary IOOA or SOOA.
Bilateral SR recession in case of DVD.
Bilateral IO anterior transposition If there is DVD associated with primary IOOA
Postoperative measurements
- Postoperative assessments were made at 1st day, 1st week, 1st month and 3rd month after the operation.
- Postoperative examinations were taken in the same manner as the preoperative examinations.
- The preoperative and postoperative size of the exodeviation was assessed at 6 m and 33cm by alternative prism cover test after the refractive error was corrected.
- Surgical success was defined as distance ocular alignment at the primary position between 5 prism diopters esodeviation and 10 prism diopters exodeviation after the operation.
- The effect/dose ratio was calculated by dividing the effect of surgery (difference in the preoperative and postoperative deviation) by the total amount of surgery done.

Abstract Title: IgG4-related dacryoadenitis in Egyptian patients: A retrospective study

Main author: Omar Hassan Salama

Co-authors:

1. Ezzat Nabil Abbas Ibrahim
2. Mostafa Osman Hussein
3. Ahmed Mohammed Madinah Alkady
4. Mohammed Eid Abd El-Salam
5. Saad Ghanem

Abstract:

Purpose:

To report clinical, serological, and histopathological findings in Egyptian patients with dacryoadenitis associated with ImmunoglobulinG4-related disease (IgG4-RD).

Methods:

We retrospectively revised medical records of patients presented to Al-Azhar University Hospitals with lacrimal gland (LG) swelling between June 2016 and February 2022. We included patients with definite IgG4-related disease (IgG4-RD) diagnosis and excluded those with possible, probable, or unlikely IgG4-RD based on The Japanese Ministry of Health, Labour, and Welfare's 2011 guidelines.

Results:

Sixteen cases were included in the study (Fourteen females and two males, mean age 39.2±12.2
years); Seven cases met the criteria of Mikulicz disease, and nine cases met full clinical, serological, and histopathological criteria. Mean reported serum IgG was 1792.5 ± 313.7 (range 1063–2134) mg/dl, mean serum IgG4 was 576.25±215.3 (range 112–841) mg/dl, and mean Serum IgG4/IgG ratio was 31.9 ± 12.4%.

The mean number of IgG4+ plasma cells/HPF was 74 ± 21.2, and the mean IgG4+ plasma cell percentage was 55 ± 9.7%. Serum IgG4 level showed a positive correlation to tissue IgG4+plasma cell percentage, while serum IgG4/IgG ratio positively correlated to both percentage and number of IgG4+plasma cells.

Steroids had a good initial response, but recurrences were common.

Conclusion:

A considerable proportion of patients with lacrimal gland swelling fall within the range of IgG4-RD. Proper diagnosis requires clinical, serological, and histopathologic correlation. Patients require long follow-up periods

Abstract Title: New OCT biomarker for diagnosis of acute optic neuritis in multiple sclerosis

Main author: Hend Mohammed Safwat Ahmed

Abstract:

Objectives:

Is imaging of retrolaminar optic nerve, during attack of acute optic neuritis in multiple sclerosis valuable?

Methods:

This is a prospective observational Case series study. Twenty-two patients recruited from Al-Azhar University Hospitals and Charity Eye Centre (El-Mustafa Eye Centre, Cairo); from October 2022 to February 2024. The patients were referred; as, they had developed episode of acute optic neuritis. Full ophthalmic and neurological examinations were done for all patients within 2 weeks of acute optic neuritis. Imaging of peripapillary retinal nerve fiber layer by conventional spectral domain optical coherence tomography (OCT), and retrolaminar part of optic nerve by enhanced depth imaging OCT were done for both acute optic neuritis eyes and the fellow eyes.

Results:

A total of 44 eyes of 22 MS patients (18 females, 4 males) with the mean age of 30.54 ± 9.65 years were included in this study. The best corrected visual acuity (BCVA) was significantly less in the optic neuritis eyes (median = 0.30) than in the fellow eyes (median = 0.70), p= 0.007. Homogeneity of retrolaminar optic nerve tissue was altered in the optic neuritis eyes. OCT showed myelin aggregates as round or oval hyper-reflective foci in the optic neuritis eyes (95% confidence interval: 2.90 [2.19 - 3.61]), that were not presented in the fellow eyes, p= 0.000.

Conclusion:

Using enhanced depth imaging OCT during acute attack of optic neuritis revealed retrolaminar hyper reflective foci as a new biomarker.

Abstract Title: Combined trabeculotomy-trabeculectomy in primary congenital glaucoma

Main author: Khaled Mohamed Fawzi

Co-authors:

1. Marwa A Khairy
2. Said Kenawy
3. Haitham Y Al-Nashar

Abstract:

Background:

The study aims to evaluate the efficacy and safety of using Mitomycin-C (MMC) or Ologen implant as an adjunct to combined trabeculotomy-trabeculectomy (CTT) surgery relative to non-augmented CTT surgery in achieving higher success rates in patients with primary congenital glaucoma (PCG).

Method:

The study included 75 eyes; only 70 fulfilled the inclusion criteria and were randomly assigned to one of the three study groups. Eyes were treated by either CTT without augmentation, CTT augmented with MMC, or CTT augmented with Ologen implant. Only 63 eyes completed one year of follow-up and were evenly distributed among the three study groups; with 21 eyes in each group were statistically analyzed.

Results:

Complete success (IOP < 21 mmHg without the use of antiglaucoma medications or additional glaucoma surgery) was achieved in 17 eyes (81.0%) in CTT group, 18 eyes (85.7%) in MMC group, and 17 eyes (81.0%) in Ologen group. Qualified success (IOP < 21 with or without antiglaucoma medications) was achieved in 18 eyes (85.7%) in both the CTT and the Ologen groups, with 19 eyes (90.5%) in the MMC group. Failure was observed in three eyes (14.3%) in both CTT and Ologen groups and two eyes (9.5%) in the MMC group. Based on survival analysis, CTT group had a cumulative success probability of 85.7% at 6th, 9th and 12th months of follow-up. With respect to the MMC group, the cumulative success probability was 90.5% at 6th, 9th and 12th months of follow-up. While in the Ologen group, the cumulative success probability at 3rd,6th, 9th, and 12th months of follow-up was 85.7%, with p value = 0.862 using the log rank test.

Conclusion:

CTT is a safe and effective primary surgical intervention in patients with PCG without the need for augmentation while preserving the augmented procedure's use for recurrent cases.

Young Ophthalmogists 1: Free Paper Anterior Segment

Abstract Title: Abstract Title Proportion, Severity, and Risk Factors of Dry Eye Disease Among Medical Students

Main author: Ola Mohamed Abdallah Ali

Co-authors:

1. Abdelgadir Ali Bashir
2. Tagreed Murtada Ali

Abstract:

Background:

Dry eye disease (DED) is a multifactorial disease of the ocular surface characterized by a loss of homeostasis of the tear film and accompanied by ocular symptoms. Tear film instability, hyperosmolarity, ocular surface inflammation, and neurosensory abnormalities play etiological roles. This study evaluates the proportion, severity, and risk factors of DED among medical students.

Methods:

This observational descriptive cross-sectional institutional-based study included 375 participants selected through multistage probability sampling, using stratified and systematic random methods. Data were collected via a structured self-administered online questionnaire. The standardized ocular surface disease index (OSDI) questionnaire assessed prevalence, and a pretested questionnaire obtained socio- demographic and risk factor data. A pilot study reassessed the questionnaire. The statistical tests used were: the Shapiro-Wilk test for normality, the Independent-Samples Kruskal-Wallis test, the Chi-square test of independence, the Spearman correlation, and the binary logistic regression model used to perform multivariate analysis.

Results:

The overall proportion of DED was 58.6% (95% CI: 53.3 - 63.7). The prevalence of mild, moderate, and severe DED was 21.3% (95% CI: 17.2 - 25.9) and 9.7% (95% CI: 6.8 - 13.2), respectively. Significant associations were found between DED and mouth dryness, refractive error, corrective glasses use, and artificial tear use (P-value < 0.05). Artificial tear use was significantly associated with symptomatic DED with an odds ratio of 4.682 (95% CI: 1.031 - 21.271).

Conclusions:

DED is characterized by tear film instability and loss of homeostasis of the ocular surface. The prevalence varies widely based on definitions and diagnostic measures. Artificial tears were found to increase the risk of DED by four and a half times.

Abstract Title: The role of Corneal diameter in Refractive Surgery

Main author: Mohamed Mahmoud Harras

Abstract:

Background:

Corneal diameter has important roles in Refractive surgery such as new generations calculation formulas calculation, CTR haptic size, ICL size, it also affect the corneal tomography which in turn have critical role in KC exclusion and corneal Refractive surgery decisions.

Study Design

Interventional, retrospective, non-controlled, non-comparative study.

Methodology: we collected the preoperative Pentacam images of 126 patients (252 eyes) underwent Laser Vision Correction. Correlations were performed between WTW and Pentacam findings (anterior, posterior K readings, anterior, posterior Astigmatism, Thinnest location (TL), and BAD indices: Db, Db, Dt, Da, Dp, D).

Results

WTW shows a negative correlation with KM (P = < 0.001; r = -0.43), posterior KM (P = < 0.001; r = -0.51), Kmax (P = < 0.001; r = -0.43), posterior corneal astigmatism (P = 0.002; r = -0.218) and TL (P = 0.012; r 34 = -0.17), and a positive correlation with anterior corneal astigmatism (P = 0.038; r = 0.148), There was a negative correlation between the corneal diameter and Db (r = - 0.35 ; P = <0.001), Dp (r = - 0.09 ; P = 0.02) and with final (D) (r = -0.16; P = <0.095) and a positive correlation with Dt (r=+0.25. P =0.003).

Conclusion

Corneal diameter influences corneal curvature and pachymetry. It also influences BAD display; small diameter is associated with steep cornea and can give a false impression of corneal ectasia in BAD display.

Abstract Title: Evaluation of tear film before and after corneal collagen crosslinking in patients with keratoconus

Main author: Abdelrahman Mohamed Hefnawy

Co-authors:

1. Sami Ali Abou El-Khair
2. Aya Mohamed Hashish
3. Walid Gaafar

Abstract:

Purpose:

The study aimed to evaluate tear film changes before and after corneal collagen cross-linking in patients with keratoconus.

Methods:

The study included 60 eyes of 30 keratoconus patients who underwent corneal collagen cross-linking surgery at the outpatient clinic of the Mansoura Ophthalmic Center. Patients were evaluated using various methods, including personal history, refraction, slit-lamp examination, fundoscopy, and IOP measurement of ocular tension. Pentacam HR (Oculus, Inc., Wetzlar, Germany) was used to diagnose and assess the progression of keratoconus. The Media Works Dry Eye Diagnostic System (D130) was used to evaluate eight tear film parameters before and after surgery. The outcome measures were noninvasive break-up time (NIBUT), Hybrid break-up time (H-BUT), tear meniscus height, lipid layer, eyelid edge, meibomian gland, ocular surface staining, and eye redness analysis.

Results:

The mean age was 22.03 years. There was a slight improvement in UCVA from the preoperative to 6th month follow-up, but the difference was not statistically significant. The BCVA remained the same from the preoperative to 6th month follow-up. Preoperatively, 52 eyes (86.7%) were refracted, increasing to 56 eyes (93.3%) at 6th month follow-up. The cylinder amount decreased from the preoperative to 6^{th} month, but the difference was not statistically significant. Keratometry revealed a reduction in the mean values of K1, K2, and Kmax. Corneal thickness decreased slightly at the thinnest location, but the difference was not significant. There was a statistically significant improvement in the NIBUT and H-BUT 1st rupture time and average rupture time, and a significant improvement in their grades by the end of follow-up.

Conclusion:

This study demonstrated that epi-off CXL treatment can control keratoconus progression and improve tear film parameters, reducing dry eye symptoms within six months in patients with keratoconus.

Young Ophthalmogists 2: Free Papers

Abstract Title: Evaluating Intraocular Microvascular Changes in Vascular Paralytic Strabismus: An Optical Coherence Tomography Angiography Perspective

Main author: Umay Güvenç

Co-authors:

1. Yasemin Topalak
2. Fatma Gül Yılmaz Çınar
3. Evin Şingar

Abstract:

Background:

Vascular paralytic strabismus, caused by ischemic cranial nerve palsy, may involve intraocular vascular changes. This study investigates these changes using optical coherence tomography Angiography (OCTA) during both paralysis and recovery phases.

Methods:

This retrospective study included 31 patients with vascular paralytic strabismus, confirmed via clinical evaluation and magnetic resonance imaging. OCTA assessed retinal and choroidal vascular densities (VD) during acute paralysis and after recovery. Choroidal vascularity index(CVI) was analyzed using Enhanced Depth Imaging(EDI)-OCT images in ImageJ software. Comparisons were made between paralytic and non-paralytic eyes, as well as within the paralytic eye at different time points. Correlations between vascular parameters and clinical severity were evaluated.

Results:

The mean recovery time was 3.1±1.5 months, with sixth nerve palsy being the most common presentation (58%). During paralysis, macular superficial VD and CVI were significantly reduced in the paralytic eye compared to the non-paralytic eye, with significant improvements observed post- recovery($p<0.001$). Deep VD reductions were localized to the fovea during paralysis($p=0.003$), while significantly increased post-recovery in the paralytic eye($p=0.001$), remained lower than the non-paralytic eye. FAZ enlargement in the paralytic eye ($p=0.042$) resolved to levels comparable to the non-paralytic eye post-recovery. Superior peripapillary VD was significantly reduced in the paralytic eye during paralysis ($p=0.034$). Intradisc VD, retinal and choroidal flow areas showed significant increases in the paralytic eye after recovery($p=0.043$;$p<0.001$). Structural parameters, including retinal thickness and optic disc parameters, exhibited no significant differences. Regression analysis revealed that prolonged paralysis duration significantly reduced parafoveal VD($p=0.034$), while gaze limitation was associated with increased FAZ and reduced CVI($p=0.038$).

Conclusions:

Vascular paralytic strabismus induces transient ischemic changes in the affected eye, including reduced macular VD, FAZ enlargement, and lower CVI. While recovery significantly improves these vascular parameters, incomplete restoration of peripapillary VD may suggest

lingering vascular compromise. This study underscores OCTA's value in investigating ischemic mechanisms affecting intraocular blood flow in vascular paralytic strabismus.

Abstract Title: Analyzing possible prognostic predictors to treatment in patients diagnosed with submacular hemorrhage

Main author: Rachid Bouchikh El Jarroudi

Abstract:

Introduction:

Submacular hemorrhage (SH) refers to the accumulation of blood between the photoreceptors (PhR) and the retinal pigment epithelium (RPE) in the macular region. The damage caused can be irreversible, leading to a poor prognosis if left untreated. Therefore, prompt removal or evacuation of the submacular hemorrhage has been recommended.

Material and methods:

A retrospective case series that includes 26 eyes of 25 patients treated surgically for SH by 23G pars plana vitrectomy (PPV), subretinal r-TPA and PnD with gas.

Primary outcome was the best visual acuity (BVA) and the visual gain (VG) at 3, 6 and 12 months after surgery. Secondary outcomes include VG according to ethology, degree of displacement, gas used, central subfield foveal thickness, time lapse between first symptom and PPV and the number of anti-VGEF injections 1 year after surgery.

Results:

At the diagnosis, mean BVA was 21.0±20.0 letters, improving to 30.8±23.9 2 months after the PnD, to 41.8±25.1 6 months after the surgery and finally remaining stable 1 year after surgery with 37.1 ± 19.5 BVA ($p < 0.05$). The visual gain 1 year after surgery according to the SH displacement, was higher in patients with total SH displacement with 25.0 ±27.8 of VG, being the gain inferior in partial displacement (-10.0 ± 13.2) and in cases without displacement (4.4 ± 16.6) ($p < 0.05$). There is a negative correlation between foveal thickness at the diagnosis and the visual gain ($p<0.05$). No differences of VG were observed depending on aetiology, gas used or time lapse between first symptom and the surgery.

Conclusions:

23G PPV, subretinal r-tPA injection and PnD using gas is an effective procedure to manage SH, being greater VG in patients that achieved a complete displacement of SH during the first week after surgery and patients with smaller SH thickness baseline

Abstract Title: Examination of cases with persistent subretinal fluid in choroidal neovascular membrane treatment

Main author: Ibrahım Emir

Co-authors:

1. Guner Uney
2. Ozlem Candan
3. Nurten Unlu
4. Gozde Orman

Abstract:

Purpose:

To examine characteristics of cases with persistent subretinal fluid in the treatment of choroidal neovascular membrane (CNVM).

Material-Method:

Patients who underwent intravitreal anti-vascular endothelial growth factor (anti-VEGF) therapy for CNVM with persistent subretinal fluid after 12 months of treatment were examined.

Demographic characteristics, baseline subfoveal choroidal thickness (SFCT), membrane type, presence of pachychoroid; baseline, 3, 6, 12th month central foveal thickness (CFT) and best corrected visual acuity (BCVA) were investigated. Correlation analysis was performed between the findings.

Results:

A total of 6.1±1.7 anti-VEGF injections were applied to 32 patients with a mean age of 71.5±9.5 years. The baseline, 3, 6, 12th month BCVA was 0.53±0.5, 0.44±0.5, 0.48±0.5 and 0.48±0.5 logMar, respectively (p=0.06). The baseline, 3, 6, 12th month CFT was 386±82 ,361±82 ,382±106 ,361±99 µm respectively (p=0.4). There was a significant positive correlation between baseline and 12th month BCVA (p=0,0001, r=0,6). Type 1 CNVM was present in 53.1% of the cases and type 2 CNVM was present in 46.9%. Statistically significant difference between these two groups at all follow-up visits was detected (p>0.05) regarding BCVA. Pachychoroid was present in 43.8% of the cases. There was no difference between the cases with and without pachychoroid in terms of BCVA and number of injections (p<0.05).

Discussion:

The presence of persistent subretinal fluid does not negatively affect visual acuity at 12 months. The presence of type 2 membrane has a negative functional impact. Initial visual acuity affects the final visual acuity. The presence of pachychoroid has no significant effect on BCVA.

Abstract Title: Evaluation of Serum Inflammatory Biomarkers in Patients with Multiple Sclerosis-Related Optic Neuritis

Main author: Izel Cazimoglu

Co-authors:

1. Gozde Orman
2. Kubra Kucukiba
3. Ozlem Candan
4. Nurten Unlu
5. Ayse Burcu

Abstract:

Background:

Optic neuritis (ON) is an inflammatory disorder of the optic nerve, often associated with multiple sclerosis (MS). Although hemograms are routinely used to assess health, their potential role in diagnosing or monitoring ON remains unclear. This study aims to examine the association between hemogram parameters and optic neuritis in MS patients, compared to healthy controls.

Methods:

This retrospective study included two groups: 32 patients diagnosed with optic neuritis secondary to multiple sclerosis and 33 healthy controls. Hemogram data, including white blood cell count (WBC), neutrophil count, lymphocyte count, Neutrophil-to-Lymphocyte Ratio (NLR), Platelet-to-Lymphocyte Ratio (PIV), and Systemic Immune-Inflammation Index (SII), were retrospectively collected and analyzed for both groups. Statistical comparisons were made between the groups to assess the differences in these parameters.

Results:

The patient group consisted of 32 individuals (10 males, 22 females) with a mean age of 29 years, while the control group comprised 33 healthy participants (12 males, 21 females) with a mean age of 28 years. Demographic data between the two groups did not show statistically significant differences.

Hemogram analysis revealed statistically significant differences between the groups in the NLR (p=0,007), white blood cell count WBC (p=0,025) and neutrophil count (p=0,003), suggesting that these parameters may reflect the immune-inflammatory response in MS patients with optic neuritis. In contrast, although there was a large difference in PIV and SII between the two groups, these differences did not reach statistical significance.

Conclusion:

These findings suggest that specific hemogram markers, particularly NLR, WBC, and neutrophils, may serve as valuable adjuncts to clinical evaluation and monitoring of optic neuritis in the context of multiple sclerosis. However, further studies are needed to confirm the clinical utility and prognostic value of these markers in optic neuritis and its association with multiple sclerosis.

Abstract Title: Blepharospasm management in Schwartz-Jampel syndrome: A systematic review

Main author: Rachid Bouchikg El Jarroudi

Co-authors:

1. Kolbe Roche Fernandez
2. Sebas Videla
3. Ester Casas Gimeno
4. Hugo Gonzále Valdivia
5. Joan Prat Bartomeu
6. Carlos Ignacio Ortez Gonzalez

Abstract:

Objective:

To review the actual evidence for the appropriate management strategies of blepharospasm in Schwartz-Jampel-syndrome and to propose the first management algorithm.

Evidence Review:

A literature search of PubMed®, Web of Science™, SCOPUS® and Cochrane Library databases was conducted from any time to July 1st, 2024. Data on therapeutic options, efficacy/effectiveness (responders) and safety were collected. Responder: patient diagnosed with Schwartz-Jampel-syndrome with blepharospasm who received some treatment and improved blepharospasm and/or increased the interpalpebral fissure after treatment (PROSPERO ID: CRD42024569495).

Findings:

No clinical trials nor observational studies were found. Only 15 articles, all of them case reports or case series (level of evidence 4), involving 21 patients, could be analyzed. Therapeutic options were: i) Oral drugs (sodium blocker channels) in 12 patients [10/21 (47.6%) as first option and 2 as second option]: carbamazepine [7/9 (77.8%) as first option and 2/9 (22.2%) as second option], phenytoin alone or associated with quinine [2 patients as first option], and procainamide [1 patient as first option]; ii) Botulinum-toxin-A in 10 patients [6/21 (28.6%) as first option and 4 as second option]; and iii) Eyelid surgery (orbicularis myectomy) in 11 patients [5/21 (23.8%) as first option and 6 as second option]. Responders (treatment effectiveness): i) Oral drugs: 6/12 (50%, 95%CI: 25.5-74.6%) patients [carbamazepine: 5/9 (55.6%), procainamide: 1/1 (100%)]; ii) Botulinum-toxin-A: 3/10 (30.0%, 95%CI:10.8- 60.3%) patients; iii) Eyelid surgery: 11/11 (100%, 95%CI:74.1-100%) patients. Management algorithm proposal: oral sodium blocker channels as first option, and Eyelid surgery as second option treatment. Botulinum-toxin-A might be considered as a therapeutic step prior to surgery.

Conclusions and Relevance:

Published evidence on management strategies for blepharospasm in Schwartz-Jampel-syndrome is scarce and of low quality. Since this nosology is an orphan disease, efforts should be promoted to conduct clinical research and a consensus document for the management of blepharospasm

Abstract Title: Efficacy and Safety of Stem Cell-Based Therapies in Treating Limbal Stem Cell Deficiency: A Systematic Review and Meta-Analysis

Main author: Qusai Abdulrahman Aloweiny

Co-authors:

1. Anwar Almallahi
2. Rodeen Alsamani
3. Rafif Almatrafy
4. Aljawharah Bin Essa
5. Amjad Alharthe
6. Maydaa Dabi

Abstract:

Introduction:

Corneal blindness (CB), often resulting from limbal stem cell deficiency (LSCD), presents a significant challenge in ophthalmology. Traditional treatments like corneal transplantation face limitations, including donor shortages and reduced success over time. Stem cell-based therapies offer a promising alternative for treating LSCD and restoring vision.

Methods:

A systematic review and meta-analysis were conducted, following PRISMA guidelines, to assess the effectiveness and safety of stem cell-based therapies for LSCD. A comprehensive search of MEDLINE, CENTRAL, EMBASE, Web of Science, and Science Direct databases up to July 2024 was performed.

Eligible studies included randomized controlled trials and prospective studies comparing stem cell therapies with conventional treatments. The primary outcomes assessed were improvements in visual acuity, corneal healing, and ocular surface restoration.

Results:

Four studies, involving 133 eyes, were included. Mesenchymal stem cell transplantation (MSCT), cultivated limbal epithelial transplantation (CLET), and allogeneic limbal stem cell transplantation (LSCT) significantly improved visual acuity and ocular surface restoration, with no major differences between interventions. Success rates for MSCT and CLET ranged from 76-85%, while amniotic membrane transplantation (AMT) was effective in partial LSCD. Best-corrected visual acuity (BCVA) improved in 65- 85% of patients across all therapies. Minimal adverse events were reported.

Conclusion:

Stem cell-based therapies offer an effective and safe alternative to conventional treatments for LSCD, with significant improvements in visual acuity and ocular surface health. AMT remains a viable option for partial LSCD. Further research with standardized protocols is needed to refine these therapies and optimize patient outcomes