**Abridhahi, Majid**

**Accommodative Ability in Diabetic Patients at Pre-Presbyopic Age in Khatam Al Anbia Eye Hospital**

- **Authors:** Majid Abridhahi, Mohammad Etezad Razavi, Mojtaba Zaker Abbasi
- **Affiliation:** Vitreous and Retina Research Center, Khatam Al Anbia Eye Hospital, Medicine Faculty, Mashhad University of Medical Sciences
- **Purpose:** To assess accommodative ability tests in diabetic patients at pre-presbyopic age
- **Methods:** Accommodative ability tests including near point accommodation, accommodative amplitude, accommodative facility, relative accommodation, near point convergence (NPC), and accommodative lag were evaluated in 31 diabetic patients aged between 20 to 40 years with no macular edema, no proliferative retinopathy and any laser or surgical treatment as case group and 38 individual in matched group of normal population without any systemic or ophthalmic disease as control group.
- **Results:** Near point accommodation in case group was greater than control (p-value<0.001). Other tests including accommodative amplitude, accommodative facility and relative accommodation, significantly decreased in case group. Near point convergence (NPC) did not change significantly in diabetic group. (P-value=0.45)
- **Conclusion:** In diabetic patients, compared to normal people, accommodative ability especially accommodative amplitude, near point accommodation and accommodative facility decreased, earlier than normal population. Early evaluation and correction of near vision is suggested in diabetic patients.

**Adib Moghaddam, Soheil**

**Visual and Contrast Sensitivity Outcomes after Transepithelial Phototherapeutic Keratectomy Using Schwind Amaris Excimer Laser**

- **Author:** Soheil Adib Moghaddam
- **Affiliation:** Bina Eye Hospital
- **Purpose:** To evaluate visual and contrast sensitivity (mesopic and photopic) outcomes after transepithelial photorefractive keratectomy (tPRK), using the Schwind Amaris 500 excimer laser.
- **Methods:** Forty seven eyes out of 26 patients with myopia underwent tPRK using Amaris 500 excimer laser platform (Schwind Eye-Tech-Solutions GmbH & Co. KG.) with aberration free mode. Visual outcomes and photopic and mesopic contrast sensitivity outcomes were measured before and 6 months post-operatively. The findings were compared with paired sample T test.
- **Results:** Visual outcomes improved in all eyes. Uncorrected distance visual acuity (UDVA) and Best spectacle-corrected visual acuity (BSCVA) were 10/10 or better in 42 eyes post-operatively. UDVA was 12/10 and 15/10 in 15 and 11 eyes respectively. The mean of UDVA improved significantly from 0.56 to 1.24 (P value=0.001) and BSCVA improved significantly from 1.01 to 1.23 (P value=0.006). The mean of mesopic contrast sensitivity reduced significantly from 0.91 to 0.85 (p value = 0.03) while the mean of photopic contrast sensitivity did not showed any significant change.
- **Conclusion:** This study shows tPRK mode using Schwind Amaris is an effective procedure. This procedure improves visual acuity and quality of vision. Additional studies with more subjects are needed to determine long-term outcomes.
Aghsaie Fard, Masood

Posterior Pole Retinal Thickness for Detection of Structural Damage in Nonarteritic Anterior Ischemic Optic Neuropathy

- **Authors:** Masoud Aghsaei Fard, Alireza Majidi
- **Affiliation:** Farabi Eye Hospital
- **Purpose:** To compare posterior pole retinal thickness (PPRT) and peri-papillary retinal nerve fiber layer thickness (RNFLT) between the affected eyes of patients with previous nonarteritic anterior ischemic optic neuropathy (NAION) and their unaffected eyes and to assess the structure-function relationship.

- **Methods:** 18 NAION eyes and 14 contralateral unaffected eyes were included in this cross-sectional study. Humphrey visual field (VF) sensitivities were obtained. RNFLT (six sectors) and PPRT (four quadrants) were measured with spectral-domain optical coherence tomography. These parameters were compared between both eyes of patients with unilateral NAION. The correlation of RNFLT and PPRT with VF mean sensitivity (MS) values (linear units) was also analyzed.

- **Results:** A significant difference was existed between the NAION affected eyes and the unaffected fellow eyes in the MS values, all sectors of RNFLT, and all quadrants of PPRT values. A significant linear correlation was observed between RNFLT and PPRT and corresponding MS values in global and regional measures. The strongest correlation was between inferior temporal VF and its corresponding superior nasal retinal quadrant thickness. The area under the receiver operator characteristic curves comparing superior nasal PPRT between the normal and NAION eyes was 0.97.

- **Conclusion:** PPRT and RNFLT provide equivalent performance in detection of structural damage in NAION.

Aghsaie Fard, Masood

Follow-Up of Optic Pathway Glioma with Optical Coherence Tomography

- **Author:** Masoud Aghsaei Fard
- **Affiliation:** Farabi Eye Hospital
- **Purpose:** To study the characteristics of optic pathway glioma (OPG) as measured with optical coherence tomography (OCT) at diagnosis and during the second year after the episode.

- **Methods:** Patients diagnosed with OPG underwent at the time of diagnosis and 6 months and 1 and 2 year after presentation a complete ophthalmologic and evaluation, including neuroimaging, determination of Snellen visual acuity, visual fields (as possible), and nerve fiber layer (RNFLT) and posterior pole retinal thickness (PPRT) scanning with Spectralis OCT.

- **Results:** 23 subjects with OPG that are contributed 38 eyes enrolled in this study. Eighteen patients were followed up for 24 months and five for 18 months. There was demonstrable growth of the tumor in neuroimaging in two children with neurofibroma (NF-1) and 3 children with sporadic OPG. Mean average RNFLT and average PPRT changes in nonprogressors and progressors was 1.94±2.85 μ, 8.20±2.25 μ and 2.11±3.2 μ, 15.30±5.14μ respectively. Mean average RNFL thickness was significantly lower in progressors compared with nonprogressors (P< 0.001). The area under the ROC curve for discriminating progressors versus nonprogressors with the average RNFL thickness was 0.92. Statistical significance difference was also found in mean change between progressors and nonprogressors for average PPRT.

- **Conclusion:** OCT might be useful for follow-up of OPG.
Ahmadi, Farzin

Comparison of Recurrence Rate and Complications between Two Surgical Methods for Pterygium Removal

- **Authors:** Mahmoud Joshaghani, Farzin Ahmadi, Rama Pourmatin
- **Affiliation:** Rassoul Akram Hospital, Eye Research Center, Tehran University of Medical Sciences
- **Purpose:** To compare the recurrence rate and complications between two surgical methods for pterygium removal: bare sclera technique followed by MMC drop and pterygium excision with conjunctival free flap with intraoperative MMC
- **Methods:** 64 eyes with confirmed diagnosis of primary pterygium divided in 2 groups randomly: group one consisted of 32 eyes that underwent bare sclera technique followed by MMC 0.02% drop (3 times per day for 3-5 days postoperative) and group two consisted of 32 eyes treated with conjunctival free flap and using intraoperative subconjunctival MMC 0.02% for 2 minutes. Mean range of postoperative follow up was 18 months. We have not any other complications such as scleral melting in each group.
- **Results:** 1 year after pterygium removal we have 4 clinical recurrence: 1 case in group one in sixth month of follow-up (recurrence rate; 3.12%) and 3 cases in group two that occurred in third and sixth month of follow-up (recurrence rate; 9.37%).
- **Conclusion:** Bare sclera pterygium excision followed by MMC 0.02% drops for 3 days is an easy and safe technique and as effective as conjunctival free flap with intraoperative MMC 0.02% for 2 minutes. bare sclera method has less recurrence rate.

Ahour, Mohammad Hosein

Fetuin-A and Matrix γ-Carboxyglutamate Protein, in Wet Type Age Related Macular Degeneration

- **Authors:** Mohammad Hosein Ahour, Alireza Javadzadeh, Rana Sorkhabi
- **Affiliation:** Tabriz University of Medical Sciences
- **Purpose:** To evaluate the fetuin-A and Matrix γ-carboxyglutamate (Gla) protein (MGP) levels as the main factors for vascular calcification and inflammation in serum of patients with wet type ARMD compared to healthy people.
- **Methods:** The subjects were 40 patients with wet type ARMD having a mean age of 70.9±9.1 years and a matched group of 49 apparently healthy control subjects. The AMD was diagnosed using a slit-lamp with super filled lens, fundus photography and fluorescein angiography. Levels of fetuin-A and MGP were determined by standard methods.
- **Results:** Fetuin-A levels (50.27±5.04 vs. 44.99±10.28 ng/ml, P = 0.002) were higher in the studied patients than in the control groups. We could not find significant difference in MGP level between two groups. (p=0.08). There was not a significant correlation between MGP with Fetuin-A and hs-CRP among the patients (p=0.7, p=0.9 respectively).
- **Conclusion:** Although our study showed Fetuin-A increased in wet type ARMD patients, their direct role in pathogenesis of ARMD needs further studies.
Akhgary, Mohsen

The Prevalence of Refractive Error in Low Vision Patients

- **Author:** Mohsen Akhgary
- **Affiliation:** Rehabilitation Faculty of Shahid Beheshti Medical University
- **Purpose:** Refractive error is one of the main causes of low vision. With the correction of refractive error, these patients can be helped to improve their vision. The purpose of this study was to determine the frequency of refractive error in low vision patients. Examinations were performed in low vision clinic of rehabilitation faculty in Shahid Beheshti Medical University.
- **Methods:** In this cross-sectional study, all files of patients that examined in the low vision clinic of rehabilitation faculty in Shahid Beheshti Medical University in 2009/2010 were reviewed. Variables that studied were: age, sexe, type of refractive errors and causes of low vision.
- **Results:** Refractive Error was found in 168(82%) patients. The prevalence of myopia was 3.6%, hypermetropia was 11.9% and astigmatism was 84.5%. In senile macular degeneration (SMD), stargart disease, diabetes, retinitis pigmentosa (RP) and albinism, the most common refractive error was astigmatism.
- **Conclusion:** The results showed that in evaluation of the causes of low vision, refractive error is common and these results are correlated with previous studies. Therefore it is recommended to perform refraction in all low vision patients.

Alijenab Monfared, Zeinab

How Ocular Prosthesis Increase Satisfaction of Patient after Surgery

- **Authors:** Hamid Raees Danayee, Zeinab Alijenab Monfared, Mehdi Reza Raees Ali
- **Affiliation:** Behro Technical Orthopedic Center
- **Purpose:** To evaluate early insertion of ocular prosthesis for aesthetic rehabilitation after enucleation and review the current methods of enucleation surgery.
- **Methods:** Twelve patients with large intraocular malignancies were treated by enucleation with implant. At the end of surgery, a medium-size conformer was inserted into the closed conjunctival wound (just before applying a pressure dressing). The pressure dressing was removed 3 to 5 days after surgery. Immediately after bandage removal, the patients saw themselves in a mirror and were offered placement of a relatively small ocular prosthesis. Patients were asked if they preferred their aesthetic appearance with or without the prosthesis.
- **Results:** Eight patients (67%) tolerated introduction of the prosthesis at the time of removal of their pressure dressing (3 to 5 days after enucleation surgery). Because of discomfort, 4 were able to receive their prosthesis at their second postoperative visit (day 12 or 13). The manipulation at prosthesis insertion and subsequent wearing was found to have no effect on wound closure, final prosthetic fittings or movement of the permanent prosthesis. All patients were pleased with the cosmetic benefit afforded by early introduction of the prosthesis and preferred their appearance to that of their eye with the conformer.
- **Conclusion:** Early replacement of the conformer by an ocular prosthesis allows for cosmetic rehabilitation and improves quality of life.
Alizadeh, Reza

Difference of Nerve Fiber Layer Thickness of Optic Nerve in Eyes with Optic Neuritis and the Normal Eyes

- **Authors:** Nasser Shoeibi, Reza Alizadeh, Mohammad Khalifeh, Neusha Barakati
- **Affiliation:** Khatam Eye Research Center and Hospital
- **Purpose:** To evaluate the nerve fiber layer (NFL) thickness of optic nerve in eyes with history of optic neuritis and the contralateral normal eye
- **Methods:** Observational case series
- **Results:** Nerve fiber layer thickness of the optic nerve was evaluated in 10 cases of optic neuritis by optical coherent tomography (OCT) and was compared with the contra lateral healthy eye. From these patients, 7 were female. Average age was 30 years. Patients were grouped according to the time passed from the last attack of optic neuritis. NFL thickness was significantly lower in eyes with previous attack of optic neuritis and this decrease had a correlation with the time passed: longer time passed, less NFL thickness
- **Conclusion:** Our study shows that NFL is affected by the optic neuritis attack episodes and this is an ongoing process with time.

Amanzadeh, Kazem

Corneal Topographic and Refractive Performance of Keraring ICRS Model in Early and Moderate Keratoconus

- **Authors:** Hassan Hashemi, Kazem Amanzadeh
- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** To evaluate visual, Refractive and corneal topographic outcomes after Implantation of Keraring in Eyes with early to moderate Keratoconus.
- **Methods:** This Case Series study is comprised of 30 eyes with grade 1 to 4 Keratoconus that had Keraring ICRS implantation using femtosecond technology (ALCON-fs-200) Visual, refractive and corneal topography outcomes were reported after 3 month follow-up.
- **Results:** The mean preoperative uncorrected visual acuity (UCVA) for all Eyes was 0.28 snellen line, and improved to 0.54 after 3 months (P-value <0.05). The mean preoperative BSCVA for all eyes was 0.48 snellen line, and improved to 0.62 at 3 months (P-value <0.05). There was a significant reduction in spherical Equivalent error from -2.75 to 1.08 D (P-value <0.05) and decrease in preoperative K-Max from 49.1 to 45.88 D postoperatively. (P-value<0.05) The Mean refractive cylinder decreased from 2.41 to 1.38D postoperative (P-Value<0.05). There was no Significant Complication in operative and postoperative 3 month follow up time.
- **Conclusion:** Keraring Implantation using femtosecond Laser is effective for the treatment of Keratoconus and provides safe and acceptable visual outcomes.
Amanzadeh, Kazem

Short Term Results of Femtosecond Laser-Assisted Deep Anterior Lamellar Keratoplasty (Big Bubble Technique)

- **Authors:** Hassan Hashemi, Kazem Amanzadeh, Saeed Shahhoseini, Shahab Heydarian, Mohammad Amin Seyedian
- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** To evaluate visual outcomes and astigmatism in patients who underwent DALK with femtosecond laser (FS 200 ALCON) using 21G-2AG Incision.
- **Methods:** In this prospective, non-randomized clinical study, 21 Eyes underwent ZIG-ZAG FLAK. All eyes had advanced keratoconus, had hard contact lens and they were intolerant but not eligible for ring implantation or they had less than 20/70 vision with hard contact lenses. AFS-200 (ALCON) was used to create ZIG-ZAG incision on both donor and recipient cornea. All patients were evaluated for UCVA, BSCVA, topography, pinhole visual acuity, endothelial cell count, astigmatism and wound geometry.
- **Results:** All except 2 eyes were treated successfully without any intra-operative complications. ZIG-ZAG incisions were completed in all cases with minimal bridge. The follow-up time was 5.5 months. There was significant improvement both UCVA (P-value<0.05) and BSCVA (P-value<0.05) in all patients. The mean BSCVA was 20/50 and the mean manifest astigmatism was 4.5 D. Mean endothelial cell count was 1570±380 cells/mm². Wound diameter was slightly smaller than desirable laser setting and there was excellent conjunction of wound edges.
- **Conclusion:** V incision with FS-200 was effective and safe to perform DALK. Short term visual and refractive results are encouraging compared with conventional PK.

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Amanzadeh, Kazem

Visual and Refractive Results of Femtosecond Laser-Assisted Suture Less Anterior Lamellar Keratoplasty with Fibrin Glue

- **Authors:** Hassan Hashemi, Ahmad Kheirkhah, Reza Ghaffary, Kazem Amanzadeh
- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** To evaluate the visual and refractive results of femtosecond laser-assisted anterior lamellar keratoplasty using fibrin glue for anterior corneal pathologies.
- **Methods:** This case series comprised 15 Eyes with Anterior Corneal Scar, one due to fungal infection, 3 herpetic Corneal Scar, two Post PRK Corneal Late, 8 trachomatous superficial Corneal scar, One chemical burn. All cases underwent suture less FLAK using f5-200(ALCON) and fibrin glue. UCVA, BSCVA, manifest Refraction and Complications were the main outcomes that evaluated.
- **Results:** Follow up time was 6 months. The mean BSCVA was 0.5 snellen line (0.3 - 0.7). The Mean postoperative Spherical Equivalent was -1.5 D (+1.00 to -4.5) and mean postoperative cylinder was 3.00 Diopters (1 to 5) D. All patients gain 3 or more lines of BSCVA. Complications included Residual scar in 3 eyes, interface haze in 2 cases, anisometropia in 3 cases and no Epithelial In growth detected in eye Patient.
- **Conclusion:** Suture less FLAK using fibrin glue in anterior Corneal Pathology maybe a safe alternative to PK providing Rapid Visual Rehabilitation and acceptable Astigmatism and anisometropia that can be corrected with Laser Refractive surgery.
Andalib, Dima

Monocanalicular Silicone Intubation for Nasolacrimal Duct Stenosis in Adults

- **Authors:** Dima Andalib, Reza Nabie, Leila Abbasi
- **Affiliation:** Nikookari Eye Hospital
- **Purpose:** To evaluate the success rate of monocanalicular silicone intubation for nasolacrimal duct (NLD) stenosis in adults.
- **Methods:** In a prospective interventional study, 25 eyes of 20 patients with NLD stenosis underwent monocanalicular silicone intubation (MCI). All procedures were performed by 1 oculoplastic surgeon. Tube removal was planned for 3 months postoperatively. Treatment success was defined as no epiphora or intermittent epiphora with normal dye disappearance test at 3 months after tube removal.
- **Results:** The mean age of patients was 52.7±18.6 years. Complex stenosis was found in 9 eyes. Treatment success was achieved in 19 eyes of 25 patients (76%). The success rate was 68.8% in patients with simple stenosis and 88.9% in patients with complex stenosis, which was not statistically significant (P=0.36). There were no corneal or canalicular complications.
- **Conclusion:** It seems that the MCI is a successful primary treatment for NLD stenosis in adults.

Areesh, Mohammed

Comparison Study of Conventional and Sutureless Scleral Tunnel Trabx in the Management of POAG

- **Authors:** Mohammed Arish, L Hamid
- **Affiliation:** Alzahra Eye Hospital, Zahedan
- **Purpose:** To evaluate the surgical outcome in terms of IOP control and safety of procedure using sutureless sclera tunnel technique in patients will uncontrolled glaucoma who were referred to Alzahra –Eye hospital in Zahedan, from March 2010 to June 2012.
- **Methods:** In this clinical trial, 52 eyes of 51 patients with POAG were studied. 26 eyes underwent suture less trabeculectomy and 26 eyes were treated with conventional trabeculectomy, and the patients were followed for 6 month. Patient’s data such as sex, age, UA (Snellen chart), IOP, anti-glaucoma medications, systemic disease, refractive error, intra operative and post-operative complications and success rate were collected and statistically analyzed.
- **Results:** 27 patients (52.9%) were male and 24 patients (47.1%) were female. Six months after intervention, mean IOP reduction was 11.2 mm Hg (p<0.05) in the sutureless group which was more than conventional group (10.2 mm Hg). The success rate was similar in both groups.
- **Conclusion:** Suture less sclera tunnel technique is a safe and effective drainage procedure for treating uncontrolled POAG.
Asadi, Reza

Intractable Strabismus is not Intractable

- **Authors:** Reza Asadi, Farzad Pakdel
- **Affiliation:** Eye Research Center, Rassoul Akram Hospital, Tehran University of Medical Science
- **Purpose:** To report the efficacy of extra-ocular muscle fixation to orbital wall using titanium plate as an anchoring fixation platform.
- **Methods:** In a prospective, interventional case series, three consecutive patients with large angle strabismus with unsatisfactory previous interventions and recalcitrant to conventional strabismus interventions underwent orbitotomy and implantation and fixation of a titanium "T" plate directed toward orbital apex to the orbital wall. Rectus muscle insertion was fixed to the anchoring plate with approximate simulation of normal rectus muscle direction, after recession of the opposing rectus muscle. All operations were performed jointly by ophthalmic plastic and strabismus surgeons.
- **Results:** Three patients with large angle eye deviation were enrolled. Mean age was 23.3 (range: 17-35) years. Two were male. The etiology was third nerve palsy (2 patients) and one Duane syndrome (a young mono-ocular patient with severe face turn). All had exotropia more than 100 prism diopter. Head posture was corrected in all 3 cases. Mean follow-up was 10.6 months (range: 7-10 months).
- **Conclusions:** Extra-ocular muscle fixation using a stable titanium plate platform could be an efficacious, stable and safe technique in recalcitrant paralytic or restrictive strabismus. Patients were highly satisfied that can indirectly imply a significant raise in the quality of life.

Bagheri Lotfabad, Abbas

Demographic Study of Patients with 3rd N Palsy in a Tertiary Eye Care Center & the Effective Factors in Treatment Results during a 10 Years Period between 1999 and 2009 in Labbafinejad Hospital

- **Authors:** Abbas Baghery, Morteza Borhani, Shahram salehirad
- **Affiliation:** Ophthalmic research center, Labbafinejad Medical Center, Shahid Beheshti University of Medical Sciences, Tehran
- **Purpose:** To evaluate demographic and management outcomes of patients with 3rd N Palsy who had been treated between January 1999 to January2009 in our center.
- **Methods:** In this retrospective study, we evaluated 52 patients with third nerve palsy who referred to this center during a 10 year period.
- **Results:** Of the 52 subjects enrolled in this study, 29 (55.8%) were male. The mean age of subjects was 21 years. Etiologies of 3rd nerve palsy were trauma in 50% and congenital in 30.8%. Medical treatment was done in 48% and surgical treatment in 88.4% subjects. Mean horizontal deviation was 66 prisms before surgery that decreased to 21, 13 and 6 prisms after first, second and third surgery, respectively. Mean vertical deviation was 13 prisms before the surgery that decreased to 7, 4 and 1 prism after first, second and third surgery, respectively. 34.6 % underwent ptosis surgery. Mean palpebral fissure height in patients who underwent ptosis surgery increased from 4 to 7mm.
- **Conclusion:** Great numbers of patients need surgery to achieve acceptable treatment results. We concluded that surgical management of patients with 3rd nerve palsy is difficult and challenging but most of the patients achieve good results with appropriate and stepwise surgical plans.
Banaee, Touka

Correlation of Microaneurysm Count with Stage of Non-Proliferative Diabetic Retinopathy

- **Authors:** Touka Banaee, Hamidreza Pourreza, Mina Baradaran Khalkhali, Meysam Tavakkoli
- **Affiliation:** Mashhad University of Medical Sciences
- **Purpose:** To evaluate if there is any correlation between automatically counted numbers of micro aneurysms (MAs) in fluoresceing angiographic (FA) images with the clinical stage of non-proliferative diabetic retinopathy (NPDR)
- **Methods:** This is a cross sectional study on 100 diabetic patients of Khatam-al-Anbia hospital with NPDR. FA images were analyzed using a previously developed algorithm in MUMS. Results were analyzed using T-test, Pearson and Spearman tests & general linear models.
- **Results:** The number of MAs counted automatically correlated with age (P<0.001), type of diabetes (P=0.01) and the duration of disease (P=0.01). Independent T-test and correlation ratio did not show any relationship between the number of microaneurysms and other variables. The stage of NPDR did not correlate with the MA count either (P>0.05). Omitting patients with history of therapeutic procedures and patients without retinopathy, the analysis gave a P-value of 0.08 with correlation ratio of 0.14 between the number of microaneurysms and the stage of NPDR.
- **Conclusion:** There was no relationship between the number of automatically counted microaneurysms in FA images and the stages of NPDR. As a classification based on MA count is more quantitative than present classification, a study comparing the number of MA count with clinical course of the disease and comparison with current classification is suggested.

Bazvand, Fatemeh

Total Lower Lid Reconstruction with Three Layer Flap and Graft

- **Authors:** Mohammad Taher Rajabi, Fatemeh Bazvand, Ali Makateb, Seyyedeh Simindokht Hosseini, Mohammad Bagher Rajabi, Seyed Ziaeddin Tabatabaie
- **Affiliation:** Tehran University of Medical Sciences
- **Purpose:** To provide a method for obtaining maximize anatomical and aesthetic results in reconstruction of large defects of lower lid.
- **Methods:** We had 17 patients with total lower eyelid defect. In this study a total defect of lower lid was repaired by reconstruction of all three structure of eyelid consisting of anterior, middle and posterior lamella in a one session procedure. A tarso-conjunctival graft from the upper portion of upper lid tarsus and the periosteal flap from orbital lateral wall were used for reconstruction of posterior lamella. To reconstruct the mid-lamella, the remaining part of the orbicularis, was utilized. The skin flap of upper lid was prepared for reconstruction of anterior lamella of the lower eyelid.
- **Results:** The reason of lower eyelid defect in our patients consisted of 15 basal cell carcinomas and 2 traumas. NO acute complication during surgery and in their follow up period (8-15 months) was observed. All of the patients were satisfied with the appearance of reconstructed lower eyelid.
- **Conclusion:** We wanted to introduce a quite safe and effective technique for reconstruction of total lower lid defects with minimal complications.
Bazvand, Fatemeh

The Differential Diagnosis of Ocular Psudomelanoma

- **Authors:** Fatemeh Bazvand, Seyedeh Simindokht Hosseini, Fariba Ghassemi
- **Affiliation:** Tehran University of Medical Sciences
- **Purpose:** To introduce some of lesions that can clinically mimic malignant melanoma of uveal tract this can be benign or malignant.
- **Methods:** In this retrospective study the diagnosis of 68 patients that were referred to our center with the diagnosis of suspected malignant glaucoma for further investigations, were reviewed. The diagnoses of the most patients were established by funduscopic examinations for clinical appearance of lesions, ultrasonographic findings and course of lesion. The little of patients required further evaluations such as Fluorescein angiography and pathological investigations.
- **Results:** In our study 44 (64.7%) of patients were male and 24 (35.3%) were female. The mean age of patients was 32.10±23.12 years with the range of 1-85 years. The different diagnosis of patients with their frequency is shown in table 1. The most common causes of psudomelanoma were belonging to coats (26.5%) and lymphoproliferative disorder (11.8%). Four of patients were suffered from retinitis that their causative etiologies were toxoplasmosis (2), CMV (1) and TORCH (1). One of the patients was suffered from episcleral melanocytoma without extra ocular extention. One of our patients with prethisis eye and hazy media was referred with B scan sonography suspected appearance of melanoma. Bilateral involvement was seen in 13 (19.1%) of patients which was include lymphoproliferative disorder (7), Vasoproliferative tumor (1), coats (1), VKH (2), metastasis (1) and retinitis (1).
- **Conclusion:** Diagnosis of choroidal melanoma lesions should be carried out carefully because of the large range of lesions which can be confused with melanoma. However, they are often distinguishable with the aid of fundoscopy and ultrasonographic findings.

Beiranvand, Asghar

What Happens to Corneal Thickness and Curvature at the Onset Age of Keratoconus?

- **Authors:** Hassan Hashemi, Tahereh Abdollahi Nia, Hossein Hosseini, Asghar Beiranvand
- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** To study corneal topographic indexes in age group of 14-18 years old.
- **Methods:** In this cross-sectional study, 440 people were selected from high school students in Aligudarz, Iran, using stratified cluster sampling. All the participants underwent optometry, biometry, and corneal topography.
- **Results:** The data was obtained from 438 participants (224 girls and 214 boys) with a mean age of 16 ±1.3 years. There was 82.5% of Emmetropia in all participants. Among the participants, 14.7%, 2.8%, and 35.1% suffered myopia, hyperopia, and astigmatism, respectively. Mean K was 43.38±1.48 D. Mean CCT was 533±34 mm and 16% of the participants had CCT less than 500 mm. The topographic map of 7 participants (5 girls and 2 boys) was suspicious of keratoconus (prevalence: (0.04%-3.1%) 1.6%). Mean K and CCT of the above participants were 44.4±1.6 D and 48±44 mm, respectively.
- **Conclusion:** Similar values in people suspected of having keratoconus indicate the higher efficiency of corneal topographic pattern and CCT than Keratometry value in diagnosis of early stages of keratoconus. The 1.6% prevalence of suspected cases of keratoconus in this age group, especially in girls, reveals the necessity for paying more attention to this disorder.
Daei Sorkhabi, Rana

Inflammatory Markers in Pseudoexfoliation Syndrome

- **Authors:** Rana Sorkhabi, Amir Ghorbani, Mohamad Hosein Ahoor
- **Affiliation:** Tabriz University of Medical Sciences
- **Purpose:** To determine the alterations in serum high sensitivity C-reactive protein (hsCRP) and Tumor Necrosis factor alpha (TNF-α) levels in the patients with pseudoexfoliation syndrome (XFS) and to compare the results with the healthy individuals.
- **Methods:** hsCRP and TNF-α levels were determined in 30 patients with XFS and 30 control patients of the same age and sex, by enzyme-linked immunosorbent assay (ELISA).
- **Results:** The serum levels of hsCRP and TNF-α in XFS patients (3.95±0.88 mg/l, 3.32±0.99 pg/ml respectively) were significantly higher than control group (2.51±0.79mg/l, 0.43±0.15 pg/ml respectively) P=0.001, P=0.002.
- **Conclusion:** Our results suggested the increased serum levels of hsCRP and TNF-α in XFS, so these inflammatory markers or cytokines may be a risk factor for systemic and ocular manifestations of this syndrome.

Daftarian, Narsis

Enhanced Integration of Subretinally Transplanted Stem Cells after Intra-vitreal Injection of a Transient Selective Gliotoxin

- **Authors:** Narsis Daftarian, Jonathan Hertz, Jeffrey Goldberg
- **Affiliation:** Ophthalmic Research Center, Shahid Beheshti University of Medical Sciences, Bascom Palmer Eye Institute, McKnight Vision Research Center, University of Miami
- **Purpose:** To evaluate if intra-vitreal versus subretinal injection of aminoadipic acid (AAA) as a transient gliotoxin, via transient disruption in outer limiting membrane, can facilitate intraretinal integration of subretinally transplanted retinal progenitor stem cells, in wild type mice.
- **Methods:** 18 wild type mice, divided into 3 groups. One microliter from 100 microgram per microliter of AAA, was injected intravitreally in group 1, subretinally in group 2, and Phosphate Buffered Saline in group 3. By our enzymatic assisted preparation protocol, dissociated the retinal progenitors from the retina of embryonic day 17 of same C57BL/6 strain mice, proliferated and transfected by Green Flourescent Protein-lentivirus vectors. After 3 days, subretinal injection of one microliter of 50,000 cells/microliter from mentioned cell suspension was done in the same eye. Four weeks later animals were sacrificed and histology and immunohistochemistry were studied.
- **Results:** We found 3% intraretinal integration of GFP- labeled retinal progenitors in group 1, no integration with retinal thinning and large amounts of dead piknotic debries of migrated cells in group 2, and 0.7% intraretinal integration in group 3, of the total number of transplanted cells, after 28 days.
- **Conclusion:** Our study showed intra-vitreal injection of a glutamic analogue, 3 days before subretinal transplantation may enhance stem cell integration by 4 fold.
Daftarian, Narsis

Rescue of Retinal Function by Subretinal Transplantation of Neural Progenitors Derived From Induced Pluripotential Stem Cells in a Model of Retinal Pigment Epithelium Degeneration

- **Authors:** Narsis Daftarian, Hamid Ahmadieh, Ali Rahjooee, Leila Satarian, Azadeh Zahabi, Sahar Kiani, Hossein Baharvand
- **Affiliation:** Ophthalmic Research center, Shahid Beheshti University of Medical Sciences, Royan Institute for Stem Cell Biology and Technology, Tehran
- **Purpose:** To understand if subretinal injection of neural progenitors derived from induced pluripotential stem cells have any protecting effect on retinal function in a model of sodium iodate induced progressive retinal pigment epithelium (RPE) degeneration.
- **Methods:** From Rooyan institute iPSC bank we differentiated then by enzyme assisted protocol made 50000/μl cell suspension for transplantation. 68 pigmented male rats were divided into 4 groups as, 1 treatment group: modeling before subretinal transplantation of 50,000 μl cell suspension in both eyes, 2 sham group: the same but only subretinal injection of medium, 3 control model group but without any eye injection, 4 control pure group. Electoretinogram and optokinetic reflex were obtained at baseline, one, 3 and 6 months after transplantation. Histology was studied after 6 months by sacrificing animals.
- **Results:** After 6 months significant difference in maximum combined b wave were found between treatment(154.05 ± 73.718 microV) and control model group (13.633 ± 7.407 microV) (P<0.001). OKR results showed significant decreased visual response after 6 months in all groups (1=0.3±0.05 c/d, 2=0.17±0.1c/d, 3=0.1±0c/d) except control pure, with significantly better response in group 1 in proportion to groups 2 and 3 (P<0.001).
- **Conclusion:** Our study results show functional protective effects by subretinal transplantation of neural progenitors.

Dehghani, Alireza

The Comparison of Retinal Blood Flow after Scleral Buckling Surgery with or without Encircling Procedure

- **Authors:** Alireza Dehghani, Hassan Razmjou, Akbar Etesampour, Farhad Fazel, Mohamad Reza Akhlaghi, Heshmatollah Ghanbari
- **Affiliation:** Isfahan Eye Research Center, Isfahan University of Medical Sciences, Isfahan
- **Purpose:** To compare PSV.CRA and PSV.OA between patients with retinal detachment who treated with segmental scleral buckling and sclera buckling with encircling procedure.
- **Methods:** This study was a descriptive-analytic cross sectional study that performed in Feiz and Alzahra hospital, Isfahan, Iran. Of the patients who have undergone scleral buckling surgery, 20 patients belonged to two groups were randomly selected to enroll in the study. Study group was patient who has undergone segmental scleral buckling and the other group was patients who have undergone scleral buckling with encircling procedure. Patients were invited to Alzahra hospital to perform color Doppler imaging. PSV-RA and PSV-OA were measured and documented in both operated and no operated eyes. All of the Doppler’s performed at least three months after ophthalmic surgery.
- **Results:** A total number of twenty patients were enrolled in the study. Of these 20, ten patients had undergone segmental scleral buckling and the other ten scleral buckling with encircling procedure. PSV.CRA and PSV.OA were evaluated in both eyes of the patients. We found significant decrease in PSV.CRA among patients in both groups (P=0.03). PSV.OA didn’t change significantly in each method. At last we analyzed the mean PSV.CRA and PSV.OA in operated eye between two study groups that didn’t show any significant changes.
- **Conclusion:** PSV.CRA reduces significantly in both surgery methods; however there was no statistically significant difference between these two methods. PSV.OA didn’t change significantly in each technique.
Derakhshan, Akbar

The Effect of Panretinal Photocoagulation on Corneal Endothelial Cells

- **Authors:** Akbar Derakhshan, Majid Abrishami, Maryam Dourandish Langaroodi
- **Affiliation:** Eye Research Center, Khatam Al Anbia Eye Hospital, Medicine Faculty, Mashhad University of Medical Sciences
- **Purpose:** Panretinal photocoagulation (PRP) is one of the most effective and widespread methods in treating different retinal diseases such as diabetic retinopathy. Corneal endothelial cells have an important role in corneal clarity. Every process or procedure damaging these cells can lead to undesirable and unrecoverable outcomes.
- **Methods:** 120 eyes of diabetic patients (20 – 80 years old) were enrolled. PRP was performed with using three mirrors, in 3-4 sessions, with green laser, in 200 micron spot size, 150-250 watt and duration of 0.1- 0.2 second by only one therapist. Specular microscopy (device: TOMMEY EM 3000) was done before, just after, one week and 3 months after the last session of the procedure by the same therapist.
- **Results:** 55% of eyes belonged to females and 45% to males. Mean age was 89/8±9/53. 53.3% of cases were proliferative diabetic retinopathy and 46.7% were nonproliferative diabetic retinopathy. A statistically significant change was found in endothelial cell count, mean cell size, coefficient of variation and hexagonal cells (p - 0.001).
- **Conclusion:** PRP has a significant impact on number and morphology of corneal endothelial cells.

Einollahi, Bahram

Comparison of 2 New-Generation Single-Optic Accommodating Intraocular Lens with a Monofocal Intraocular Lens

- **Authors:** Bahram Einollahi, Mohamad Zare, Alireza Baradaran, Mohamad Mehdi Sadoughi, Afshin Abazar, Mohamad Sari Mohamadli
- **Affiliation:** Labbafi-nejad Hospital, Ophthalmic Research Center, Shahid Beheshti University of Medical Sciences, Tehran
- **Purpose:** To compare the visual acuity outcomes in patients with a monofocal intraocular lens (IOL) and two new-generation single-optic accommodating IOL.
- **Methods:** 62 eyes of 58 patients with cataract randomly underwent implantation of a monofocal IOL (Alcon SA60) and single-optic accommodating IOL (Crystalen HD or Tek-Clear). Distance, intermediate, and near visual acuities were evaluated preoperatively and six month postoperatively. In addition, postoperative complications, defocus curve, and patient’s satisfaction were evaluated.
- **Results:** Monofocal IOL, Crystalen and Tek-Clear, were implanted in 25, 23 and 14 eyes respectively. UDVA(\(P<0.001\)) and CDVA(\(P<0.001\)) improved in all groups. the accommodating IOL groups had significantly better postoperative uncorrected near visual acuity (UCNVA) and distance corrected near visual acuity (DCNVA) especially in crystalsen groupe.incidence of posterior capsule opacification in Crystalen group was higher than 2 other group lenses with 360 degree square edge.
- **Conclusion:** Distance vision improved in all groups.the best UCNVA and DCNVA values experienced with Crystalen HD. Eyes with the accommodating IOLs would require a less powerful near addition to achieve maximum near visual acuity.
Eslampoor, Alireza

Conjunctival Necrosis and Scleritis Following Subtenon Triamcinolone Acetonide Injection: A Case Report

- **Authors:** Alireza Eslampoor, Mojtaba Abrishami
- **Purpose:** To report a case of conjunctival necrosis and scleritis due to a subtenon injection of triamcinolone acetonate.
- **Methods:** A 15-year-old boy received a subtenon injection of triamcinolone acetonate after a pars plana vitrectomy due to an intraocular foreign body. Seven days later, conjunctival necrosis and scleritis appeared at the site of injection.
- **Results:** No improvement was seen after seven days of conservative treatment, and necrotic tissue debridement was performed. Within one week the conjunctiva cleared.
- **Conclusion:** Conjunctival necrosis and scleritis are rare complications of periocular corticosteroid injections, but an early diagnosis can be very valuable. Improper dosage and injection site of corticosteroids with insufficient prophylactic antibiotics are predisposing factors. If conservative treatment is not sufficient, debridement should be considered as a potential critical treatment option.

Esmaili, Alireza

Combined Phacoemulsification and Viscocanalostomy for Management of Open Angle Glaucoma

- **Authors:** Alireza Esmaeili, Setareh Sagheb
- **Affiliation:** Razavi Hospital Research Center, Mashhad
- **Purpose:** To report the results of combined phacoemulsification and viscocanalostomy in eyes with uncontrollable open angle glaucoma.
- **Methods:** The results of combined phacoemulsification and viscocanalostomy in 28 open angle glaucoma eyes were reviewed retrospectively. Complete success was defined as 30% IOP drop and IOP between 6 and 21 mmHg without medication, and partial success was that criteria with medication.
- **Results:** The mean age of 28 patients was 69 years (range 52-82). Mean follow-up time was 7.21±0.79 months (range 6-9). Mean preoperative and last visit IOPs were 19.54±7.66 mmHg and 14.42±5.62 mmHg, respectively (p=0.009). Mean number of glaucoma medication dropped from 3.14±0.84 to 0.54±0.79 (p=0.002). The complete success was achieved in 64% cases, but partial success was (28%).
- **Conclusion:** Combined phacoemulsification and viscocanalostomy seems to be a safe and effective method for the management of patients with open angle glaucoma.
Esmaili, Alireza

Phacoemulsification and Viscocanalostomy Combined with Goniosynechialysis for the Management of Chronic Angle Closure Glaucoma

- **Authors:** Alireza Esmaeili, Setareh Sagheb
- **Affiliation:** Razavi Hospital Research Center, Mashhad
- **Purpose:** To evaluate the effectiveness of phacoemulsification and viscocanalostomy combined with goniosynechialysis in lowering IOP in eyes with uncontrollable CACG.
- **Methods:** The medical data of patients with CACG were reviewed retrospectively. Success was defined as complete if IOP had a drop of at least 30% and was between 6 and 21 mmHg without medication and partial if IOP was within the range with medication.
- **Results:** A total of 27 patients with a mean age of 62 years (range 38-75) were treated. Mean follow-up time was 7±0.76 months (range 6-9). Mean preoperative and last visit IOPs were 25.33±10.72 mmHg and 15.33±4.2 mmHg, respectively (p=0.035). Mean number of glaucoma medication was changed from 3.56±0.8 to 1.11±0.93. Mean preoperative and last visit BCVA were 0.79±0.83 Snellen chart and 0.42±0.71, respectively (P=0.001). At final visit, complete and partial success was achieved in 29% and 66% of cases, respectively. The intraoperative and postoperative complications were insignificant hyphema and A/C fibrinous reaction, but we didn't have any serious complications.
- **Conclusion:** Phacoemulsification and viscocanalostomy combined with goniosynechialysis seems to be a safe and effective method for the management of patients with CACG. This procedure can be considered as an alternative surgery for these patients with good results and low rate of complications.

Faramarzi, Amir

Subconjunctival Injection of Bevacizumab for Ocular Surface Squamous Neoplasia

- **Author:** Faramarzi Amir
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- **Purpose:** To determine the efficacy and safety of subconjunctival/perilesional injection of bevacizumab for the treatment of ocular surface squamous neoplasia (OSSN).
- **Methods:** Eight eyes from 8 patients with OSSN proven with impression cytology were included. Perilesional/subconjunctival bevacizumab was injected 2 times with two weeks interval. Follow up examination including digital photography was performed up to 3 months. After 3 months excisional biopsy of the remaining tumor and cryotherapy of the conjunctival borders was performed.
- **Results:** Mean age of the patients was 65±4 years. Six cases were men. In all cases the feeding vessels of the tumor regressed significantly. Also, the size of the tumor decreased at least half of the primary size. Most of the decrement was seen 2 weeks after last injection. Complete cure of the tumor occurred in 2 cases in them lesions were clinically confined to the conjunctiva. Corneal extension of the tumor was not affected significantly by injections in 6 cases with combined conjunctival and corneal involvement. No any systemic or serious ocular complication due to bevacizumab injection was detected during follow up period.
- **Conclusion:** Perilesional bevacizumab decreases the size of the conjunctival OSSN and shrinks its feeding vessels and can be curative in cases limited to conjunctiva, however, this modality has a little or no effect on corneal extension of the OSSN.
Feizi, Sepehr

Effect of Human Amniotic Fluid on In-Vitro Culture of Human Corneal Endothelial Cells

- **Authors:** Sepehr Feizi, Zahra Soheila Soheili, Abuzar Baqery, Mojhgan Rezaei Kanavai, Mohammad Ali Javadi
- **Affiliation:** Ophthalmic Research Center, Labbafinejad Medical Center, Shahid Beheshti University of Medical Sciences
- **Purpose:** To establish an in-vitro method for expansion of human corneal endothelial cells (HCECs) using human amniotic fluid (HAF).
- **Methods:** HCECs were obtained from eye-banked corneas and cultured in DMEM-F12 supplemented with 20% fetal bovine serum. Confluent monolayer cultures were trypsinized and passaged using FBS- or HAF-containing media. HAF were received from pregnant women in the first trimester of gestation. Cell proliferation and death assays were performed to assess the effect of HAF on cell growth and viability. The identity of cultured cells was studied using immunocytochemistry and real time PCR techniques for specific markers of HCECS.
- **Results:** Primary cultures of HCECs were successfully established in HAF-containing media which led to rapid cell growth and proliferation. At day 14, the HCECs were grown to confluence on the 20% HAF medium with a mean cell density of 3452±241 per square millimeter. Real Time PCR revealed an HAF dependent expression of Ki-67, Vimentin, Na+/K+-ATPase, ZO-1 and Nestin, and significant promoting effect of HAF on HCECs generation.
- **Conclusion:** 20% HAF containing medium exhibited invaluable stimulatory effect on HCECS growth. It can be regarded as an enriched supplement in HCECs regeneration studies.

Feizi, Sepehr

Graft Biomechanical Properties Following Three Corneal Transplantation Techniques

- **Authors:** Sepehr Feizi, Talieh Montahai, Hamidreza Moein
- **Affiliation:** Ophthalmic Research Center, Labbafinejad Medical Center, Shahid Beheshti University of Medical Sciences
- **Purpose:** To investigate the biomechanical features of transplanted corneas after penetrating keratoplasty (PK), deep anterior lamellar keratoplasty (DALK), and Descemet stripping automated endothelial keratoplasty (DSAEK).
- **Methods:** Forty-five eyes of 36 patients underwent PK, 23 eyes of 21 patients received DALK using Anwar’s big bubble technique, and 17 eyes of 17 patients had DSAEK. Thirty-three right eyes of 33 normal subjects served as controls. Corneal hysteresis (CH) and corneal resistance factor (CRF) were measured at least 3 months after complete suture removal using the Ocular Response Analyzer. These parameters were compared between the study groups using the one-way ANOVA test.
- **Results:** Central corneal thickness was 539.0±24.8, 567.5±38.8, 547.0±42.6, and 631.1±84.8 μm, respectively (P<0.001). CH and CRF were significantly lower in the DSAEK group (7.79±2.0 and 7.88±1.74 mmHg, respectively) than in the PK (10.23±2.07 and 10.13±2.22 mmHg, respectively) and DALK (9.64±2.07 and 9.36±2.09 mmHg, respectively) groups. The two latter groups demonstrated results comparable to the normal subjects (9.84±1.59 and 9.89±1.73 mmHg, respectively).
- **Conclusion:** The graft biomechanics after DSAEK are lower than those after PK and DALK. Both PK and DALK can increase these metrics in keratoconic eyes to normal values. These differences should be considered when interpreting intraocular pressure or planning grafts refractive surgery after keratoplasty.
Ghaderpanah, Mahboubeh

To Compare Complication and Motility of Hydroxyapatite versus Medpor Ocular Implant after Enucleation

- **Author:** Mahboubeh Ghaderpanah
- **Purpose:** To compare complications and motility of hydroxyapatite versus medpor ocular implant after enucleation
- **Methods:** In a clinical trial study 50 patients that had indication for enucleation divided in two groups. Group 1 underwent enucleation + hydroxyapatite and group 2 underwent enucleation + medpor implant. Patients visited in 10, 30, 90 and 180th day after surgery for complications and motility.
- **Results:** Patient's ages were 8 to 68 years old with mean of 36.30 years, 52% of patients were male and 48% were female. The most common used implant size was 18. The most common cause of loss of vision was trauma and most common cause of surgery was cosmetic reason in both groups. Most common complication was mucopurulent discharge which in first month was 36% that reduced to 8% in the end of study. Mean of ocular motility in abduction was more than other side 4.72 mm and 4.58 mm in HA and medpor groups respectively and it was lesser in up gaze 3.18 in HA and 3.14 in medpor group. Complications and motility was similar in two groups and there was no significant difference between two groups statistically (p-value: 1.000)
- **Conclusion:** According to our study, rate of complications and motility are similar in HA and Medpor ocular implant after enucleation.

Ghadimi Hamzekolaii, Mahdi

Expression of ADAMTSLs Family in Human Eye Trabecular Meshwork

- **Authors:** Mahdi Ghadimi Hamzekolaii, Abdollah Beig Inaloo, Mozhgan Rezaei Kanavi, Seyed Hassan Paylakhi
- **Affiliation:** School of Biology, Damghan University, Damghan, Iran
- **Purpose:** Trabecular meshwork (TM) is a main structure in anterior chamber which is important for regulating intraocular pressure. ECM includes different protein and nonprotein parts which one of the most important of them is ADAMTS family. ADAMTS (a disintegrin and metalloproteinase with Thrombospondin motifs) designates a family of 19 secreted enzymes. More recently, the ADAMTSL family has been described which don't have any enzyme activity. In glaucoma, fibrilline fibers increase at TM in TGFβ signaling pathway, and cause to decrease the anterior outflow. ADAMTS10 mutation can cause of primary glaucoma with open angle (POAG) in dogs. We hope that more recognition of expression of these genes can help us to discover more proper and better treatments for diseases of this tissue.
- **Methods:** We used 9 human eye TM, in 3 class of ages, <3, 20-40 and >60. Total RNA from the tissues was isolated. First strand cDNA synthesis was performed. Real time PCR was performed by using the QuantiFast SYBR Green PCR Kit. Analysis was performed by comparing normalized cycle threshold (CT) values of different samples.
- **Results:** The results will be presented in Congress.
- **Conclusion:** The results will be presented in Congress.
Ghasemi, Fariba

Evaluation of Foveal Structure in Macula-Off Rhegmatogenous Retinal Detachment After Scleral Buckling or Vitrectomy Using Spectral Domain Optical Coherence Tomography

- **Authors:** Fariba Ghassemi, Naseh Mohammadi, Ramak Roohipoor, Reza Karkhaneh, Mansour Rezaei, Mehdi Nili Ahmadabadi, Nazanin Ebrahimiadib

- **Affiliation:** Farabi Eye Hospital, Vitreoretina Department, Tehran University of Medical Sciences, Kermanshah University of Medical Sciences

- **Purpose:** To evaluate the foveal microstructural changes and subretinal fluid (SRF) after successful reattachment of rhegmatogenous retinal detachments (RRDs) and their influence on visual outcome.

- **Methods:** Using spectral domain optical coherence tomography (SD-OCT), the foveal structure of eyes with macula-off RRD after pars plana vitrectomy (PPV) or scleral buckling (SB) were evaluated.

- **Results:** 42 eyes included in final analysis. In PPV group (9 eyes) at one month after surgery, 66.7% had disrupted IS/OS junction (6 eyes); 62.5% disrupted ELM (5 eyes) and 12.5% normal ONL thickness (1 eye), and at final visit (8.3 month), these were 22%, 22%, and 55.6% respectively. In SB group at one month after surgery disrupted IS/OS junction was seen in 5 eyes (16.7%); disrupted ELM in 6 eyes (21.4%); normal ONL in 23 eyes (69.7%) and at final visit (9.8 month) IS/OS junction was restored in all of patients, ELM was disrupted in 4 eyes (12%) and ONL was normal in 31 eyes (93.9%). SRF was seen in 2 eyes (22%) in PPV group and in 15 eyes (47%) in SB group. In PPV group there was no significant differences in final visual acuity between subgroups (P=0.98 and 0.97). In SB group final visual acuity in patients with intact IS/OS junction was better than those with disrupted IS/OS junction (P=0.013). Final visual acuity of those with SRF and those without SRF was not different.

- **Conclusion:** After SB, patients with intact IS/OS junction had better final visual acuity than those with disrupted IS/OS junction at 8 month. Also presence of SRF does not influence visual acuity.

Ghasemi Falavarjani, Khalil

Incidence of Acute Endophthalmitis after Intravitreal Bevacizumab Injection in a Single Clinical Center

- **Authors:** Khalil Ghasemi Falavarjani, Mehdi Modarreszadeh, Masih Hashemi, Mohammad Mehdi Parvaresh, Masood Naseripour, Abbas Zare Moghaddam, Shahbaz Nekoozadeh

- **Affiliation:** Eye Research Center, Rassoul Akram Hospital, TUMS

- **Purpose:** To assess the rate of infectious endophthalmitis in a single clinical center in Iran and to compare the rate of endophthalmitis in patients receiving post-injection antibiotics with those who did not.

- **Methods:** A retrospective chart review of patients who received intravitreal injections of bevacizumab was undertaken. Cases of clinical diagnosis of endophthalmitis were reviewed. The bevacizumab was obtained at the time of injection from a commercially available vial after aseptic cleansing the rubber cover.

- **Results:** Five patients (six eyes) developed clinical endophthalmitis after the intravitreal bevacizumab injection. The risk per injection was 0.10% (6/5901). One culture-positive case was found overall. Post-injection antibiotic drops were prescribed for 68% of eyes. All endophthalmitis cases were among those who received postoperative antibiotic eye drops. The difference in the rates of endophthalmitis between those receiving post-injection antibiotics and those who did not was not significant (P=0.18).

- **Conclusion:** A low risk of endophthalmitis consistent with the range of the previous studies was observed not withstanding the utilizing a multiple use single vial. Post-injection antibiotic drops may not be necessary.
Ghasemi Falavarjani, Khalil

Globe Survival in Patients with Retinoblastoma

- **Authors:** Masood Naseripour, Khalil Ghasemi Falavarjani, Ahad Sedaghat, Reza Soudi, Hossein Nazari, AliReza Irani
- **Affiliation:** Eye Research Center, Rassoul Akram Hospital, TUMS.
- **Purpose:** To report the outcome of eyes with retinoblastoma in terms of globe salvage.
- **Methods:** During an 11 years period, the globe survival rate of all eyes with retinoblastoma treated at an ophthalmic oncology unit was recorded.
- **Results:** 216 eyes from 146 patients including 78 unilateral and 68 bilateral cases were studied. The tumor stage based on international classification was A in 16 eyes (7.4%), B in 46 eyes (21.3%), C in 22 eyes (10.2%), D in 78 eyes (36.1%), and E in 52 eyes (24.2%). The treatment modalities consisted of systemic chemotherapy and local treatments including transpupillary thermotherapy, cryotherapy, subtenon carboplatin injection, bracky therapy and intravitreal melphalan injection. The globe survived in 92 eyes (42.6%). The rate was 16.7% in unilateral and 58.2% in bilateral cases. Primary enucleation was performed in 107 eyes (49.5%) with advanced stages. 15 eyes (6.9%) needed enucleation secondary to the treatment failure.
- **Conclusion:** The survival rate was 42.6% and is comparable with the rate reported from other developed countries.

Gordiz, Arjang

Anterior Lamellar Recession and Resection Surgery with Supratarsal Fixation for Trachomatous Entropion

- **Authors:** Gholam Hosseyn Aghai, Arjang Gordiz, Khalil Ghasemi Falavarjani
- **Affiliation:** Eye Research Center and Department of Ophthalmology, Rassoul Akram Hospital, Tehran University of Medical Sciences
- **Purpose:** To evaluate the results of anterior lamellar recession and resection in combination with supratarsal fixation in the upper lid trachomatous entropion.
- **Methods:** This is a Prospective interventional clinical case series. Participants were Thirty-two cases (52 eyes) with trachomatous entropion who were referred to Rassoul Akram Hospital during a two years period of time. Anterior Lamellar recession and resection (R&R) with supratarsal fixation surgery was done for all included patients. The main Outcome Measure was Eyelash-corneal touch among operated patients.
- **Results:** The mean age of the patients was 69.7±6.9 years. Successful outcome was achieved in 39 eyes (75%). 8 eyes (15.4%) had partial success and the surgery failed in 5 eyes (9.6%). All eyes with partial success were treated successfully with additional radiofrequency electrolysis, so the overall success rate was 90.4%. There was no significant association between result of surgery and gender (P=0.33), involved side (P=0.10) and extension of entropion (P=0.62), but the association between the surgical failure and age was significant (P=0.008). No major complications including lagophthalmos, ectropion and tissue necrosis were observed.
- **Conclusion:** Anterior lamellar recession and resection with supratarsal fixation surgery is an effective and safe technique for the treatment of the upper eyelid trachomatous entropion.
**Visual Improvement in 6 Month after Myoring Implantation for Keratoconus**

- **Authors:** Hassan Hashemi, Masoumeh Mohebbi, Asghar Beiranvand, Mansour Taherzadeh, Kazem Amanzadeh, Mohammad Reza Taheri
- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** To evaluate visual improvement six months after myoring intra-corneal implant in keratoconic patients.
- **Methods:** Forty-five keratoconic patients (46 eyes) with mean age of 26.2±6.2 years old entered the study. Femto second laser was used to make corneal pocket with a diameter of 7.7 μ and a depth of 300 mm. Then myoring intra-corneal implant was placed in the pocket.
- **Results:** Mean keratometry reduced from 51.6 D before surgery to 45.5 D six months after surgery (P<0.001). UCVA improved 4.5 lines on average, and changed from 0.95 to 0.49 logmar (P<0.001). BCVA improved almost 2 lines and changed from 0.41 to 0.24 logmar (P<0.001). The amounts of BCVA reduced in 4 cases, and UCVA reduced in 5 cases, but none lost more than 2 lines of vision. The average safety was measured 1.66±0.75 and its efficacy was 1.13±0.71.
- **Conclusion:** Myoring implantation is a safe and efficient method for treatment of keratoconus. The amount of UCVA after surgery is the most important indicator in evaluating the efficacy of this method.

**Corneal Collagen Cross-Linking with Riboflavin and Ultraviolet alrradiation for Keratoconus: Long-Term Results**

- **Authors:** Hassan Hashemi, Mohammad Miraftab, Mohammad Amin Seyedian, Akbar Fotouhi, Soheila Asgari
- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** To evaluate the long term results of collagen cross linking (CXL) in patients with progressive keratoconus.
- **Methods:** This Case series was conducted prospectively on 40 eyes of 32 patients with progressive keratoconus between 2006 and 2012. Patients underwent CXL no later than 1 month after preoperative examinations. For CXL, ultraviolet irradiation was continued for 30 minutes, during which, riboflavin instillation was repeated every 3 minutes.
- **Results:** Mean UCVA was 0.67±0.52 LogMAR preoperatively and 0.65±0.51LogMAR at 5 years after surgery. For mean BCVA, these values were 0.31±0.28 and 0.19±0.20 LogMAR, respectively (P=0.016). Mean of MRSE changed from -3.18±2.23 diopter (D) to -2.77±2.18 D and mean refractive cylinder changed from -3.14±2.22 D to -2.49±1.71 D (P=0.089). Mean max-K and average of mean-K decreased 0.16±2.20 and 0.10±1.69 D, respectively. CCT increased from 483.87±29.07 to 485.95±28.43 microns. Mean anterior elevation in apex changed from 13.92±8.28 to 11.45±8.18 microns (P=0.030) and posterior elevation at this point changed from 29.54±18.39 to 26.34±19.59 microns. Mean K, maxK, UCVA and astigmatism showed no significant change during these 5 years.
- **Conclusion:** According to 5 year results, CXL is a safe procedure for the treatment of progressive keratoconus which can eliminate disease progression and the need for keratoplasty.
Hashemi, Hassan

Results of Performing DMEK in Patients with Pseudophakic Bullous Keratopathy and Fuchs Endothelial Dystrophy

Author: Hassan Hashemi

Affiliation: Noor Ophthalmology Research Center, Noor Eye Hospital

Purpose: To evaluate the results of performing Descemet’s Membrane Endothelial Keratoplasty (DMEK) in patients in demand of corneal transplantation.

Methods: In this interventional case series, 19 patients who needed corneal transplantation underwent DMEK procedure. Of those patients, 12 had Pseudophakic Bullous Keratopathy, 5 had Fuchs endothelial dystrophy and one had both. The donor tissue was excised utilizing the SCUBA techniques. In recipient eyes, a 3.5 mm tunnel incision was made as a mark and then a 9.0 mm diameter descemetorhexis was created. After insertion of the donor DM, anterior chamber was filled with air for 30 minutes. Follow up time was one year.

Results: In this study, 11 males and 7 females with the mean age of 66.4±5.3 were assessed. The mean safety amount with and without considering cases with preoperative finger count vision were 9.83±1.73 and 3.00±0.92, respectively. Maximum and minimum improvement in BCVA was 6 and two lines, respectively. In addition, no graft rejection occurred in any of cases. In 5 cases rebubbling was done post-operatively and in one case DSEK was performed.

Conclusion: DMEK could be a safe alternative with predictable and acceptable results in patients who need corneal transplantation instead of penetrating keratoplasty.

Hashemian, Seyed Javad

Ocular Higher-Order Aberrations (HOAs) Changes after Implantable Collamer Lens Implantation for High Myopic Astigmatism

Authors: Seyed Javad Hashemian, Mohammad Ebrahim Jafari

Affiliation: Eye Research Center, Rassoul Akram Hospital, Tehran University of Medical Sciences, Negah Eye Hospital, Tehran

Purpose: To investigate the changes in higher-order aberrations (HOAs) induced by implantation of Implantable Collamer Lenses in eyes with high myopia and high myopic astigmatism.

Methods: We investigated thirty-three eyes of 18 consecutive patients, with spherical equivalent errors of -6.00 to -21.09 diopters (D) and cylindrical errors of -0.5 to -4.75 D, who underwent ICL and toric ICL implantation. Before and 5 days, 2 and 6 months after surgery, the uncorrected visual acuity (UCVA), best spectacle-corrected visual acuity (BSCVA), defocus and adverse events of the surgery were assessed. Ocular HOAs also were evaluated by Hartmann-Shack aberrometry before and 6 months after surgery.

Results: The UCVA and BCVA were ≥20/20 in 40% and 66.7% of eyes 6 month after surgery, respectively. Mean defocus refraction and astigmatism reduced to -0.66 and 0.65 D 6.0 month postoperation, from -12.79 and 2.18 at baseline respectively. For a 6-mm pupil, HOAs were not significantly changed, merely from 0.417±0.162μ before surgery to 0.393±0.119μ after surgery (P0.45). No vision-threatening complications occurred during the observation period.

Conclusion: The ICL and toric ICL performed well in correcting high myopic astigmatism without significant changes in HOAs during a 6.0 month observation period.
Hashemian, Seyed Javad

Combined Cataract Extraction and Trabeculotomy by the Internal Approach for Coexisting Cataract and Open-Angle Glaucoma

- **Authors:** Seyed Javad Hashemian, Arezoo Miraftabi, Mohammad Ebrahim Jafari
- **Affiliation:** Eye Research Center, Rassoul Akram Hospital, Tehran University of Medical Sciences, Negah Eye Hospital, Tehran, Iran
- **Purpose:** To provide the results of combined phacoemulsification and trabeculotomy by the internal approach with a follow-up to 24 months.
- **Methods:** This prospective interventional case series comprised 21 consecutive eyes with open angle glaucoma and cataract having combined phacoemulsification and trabeculotomy with a Trabectome (NeoMedix Inc.). The Trabectome is designed to open a direct pathway for aqueous to flow from the anterior chamber into Schlemm canal collector channels. The main outcome measures were intraocular pressure (IOP), glaucoma medication use, and complications.
- **Results:** The mean IOP was 18.25 mm Hg±3.28 preoperatively, 14.48 mm Hg±2.37 at 6 months, and 13.50 mm Hg ± 2.53 at 1 year, 13.33 mm Hg ± 1.50 at 2 year. There was a corresponding drop in glaucoma medications from 2.52 ± .0.60 at baseline to 0.95 ± .38 at 6 months and 1.4 ± 0.53 and 1.00 ± 0.00 at 1 and 2 years respectively. No subsequent secondary glaucoma procedures were needed in all of patients. The only frequent complication, blood reflux in 19 patients (90.4%), resolved within a few days.
- **Conclusion:** Combined phacoemulsification and trabeculotomy by the internal approach using the Trabectome lowered IOP and medication use in the majority of patients.

Hashemian, Hesam

Continuous Corneal Intrastromal Ring Implantation for Moderate to Severe Keratoconus

- **Authors:** Mahmoud Jabbarvand, Ahmad Salamat Rad, Hesam Hashemian, Mehdi Khodaparast, Hamidreza Riazi Esfehani, Elias Khalilipour
- **Affiliation:** Ophthalmology Research Center, Farabi Eye Hospital, Tehran University of Medical Sciences
- **Purpose:** To evaluate the efficacy and safety of continuous intrastromal ring implantation in keratoconus
- **Methods:** The study was a prospective, interventional, case series. 95 eyes of 95 patients with moderate and advanced keratoconus were enrolled. MyoRing (DIOPTEX GmbH) was implanted after creation of an intrastromal pocket. Visual acuity, keratometry, aberrometry, and refraction were the main outcome measures.
- **Results:** A significant improvement in uncorrected and corrected distance visual acuity was observed 1 month after surgery, which was consistent with the significant reduction in sphere (5.74 diopters [D]) and cylinder (3.02 D). Furthermore, a significant corneal flattening of a mean value of 9.78 D was found. Both spherical myopia and astigmatism underwent reduction, but reduction in myopia was greater than astigmatism. Higher order aberrations and coma-like aberrations decreased significantly, but spherical aberrations increased after surgery. There were no significant differences between two keratometry groups (higher or lower than 53D) in visual gain after procedure. There were no major complications during or after surgery. MyoRing explantation was performed in 4 eyes (4%). The refraction, visual acuity, and corneal topography returned to the preoperative status 1 month later in all of these 4 eyes.
- **Conclusion:** Myoring implantation is a safe and effective treatment for moderate and advanced keratoconus.
Helmi, Toktam

PRP Effects on the Retinal Nerve Fiber Layer, According to OCT Findings in Diabetic Patients

- **Authors:** Touka Banaee, Toktam Helmi, A Tabrizi
- **Affiliation:** Mashhad Medical University
- **Purpose:** To compare retinal nerve fiber layer thickness in diabetic patients before and after PRP

- **Methods:** This is an interventional study of twenty patients with type 2 diabetes. Peripapillary Retinal nerve fiber layer thickness measurements were performed prospectively in diabetic patients who were candidates for PRP before and 4-6 months after application of PRP and 8 diabetic patients as controlled group without PRP at baseline and 4-6 month later by using OCT. The relationships between changes in RNFL thickness and the number and spotsize of laser burns, duration of diabetes and hypertension, and vision change were analyzed. Patients with glaucoma and other retinal diseases were excluded from study.

- **Results:** Forty eyes of 20 patients with the mean age of 54.6 years (35-70) were evaluated. 8 patients had HTN and the mean duration of DM was 12.6 years. Age, duration of HTN and DM, number and spotsize of laser burns didn’t have significant effect of NFL thickness (p>0.05). NFL thickness was 91.5±21.1 before and 90.4±16.1 4-6 months after completion of PRP (p=0.45) that there is no difference with controlled group.

- **Conclusion:** These results suggest that DM did not seem to have any effects on the retinal nerve fiber layer thickness. If done properly, PRP is safe for retinal NFL and doesn’t damage it significantly. Laser parameters don’t have effect on NFL thickness.

Jalili Fazel, Ali

Oral Azithromycin versus Doxycycline in Posterior Blepharitis: A Randomized Uncontrolled Trial

- **Authors:** Mohsen Bahmani Kashkouli, Khalil Ghasemi Falavarjani, Ali Jalili Fazel, Victoria Kiavash, Farzad Pakdel, Gholam Hossein Aghaei
- **Affiliation:** Eye Plastic Unit, Eye Research Center, Rassoul Akram Hospital, Tehran University of Medical Sciences
- **Purpose:** To compare the efficacy of oral azithromycin and oral doxycycline in treatment of posterior blepharitis.

- **Methods:** Considering exclusion criteria, 100 patients with posterior blepharitis randomly received oral azithromycin or doxycycline alongside warm compresses and eyelid scrubbing. Treatment responses (Subjective and objective) and side effects were recorded before and 7, 31, 37 and 61 days after treatment.

- **Results:** Both systemic azithromycin and doxycycline were effective in reducing symptoms and signs of patients with posterior blepharitis. There was no significant difference in ocular symptoms mean score in two treatment groups (4.3 vs 5, P=0.15), however azithromycin was superior to doxycycline in decreasing patients clinical signs including conjunctival redness (P=0.004), tear breakup time (P=0.04) and ocular surface staining (P=0.049). There was not a significant difference in side effects between two treatment groups at the follow up time (P=0.11).

- **Conclusion:** Although both medications equally improved the symptoms of posterior blepharitis, azithromycin is recommended for its more effect on decreasing the signs and lower duration of treatment and cost.
Joshaghani, Mahmood

1 year Outcomes of INTRACOR Femtosecond Laser Treatment for Presbyopia

- **Author:** Mahmood Joshaghani
- **Purpose:** To assess the results of 1 year follow up of INTRACOR femtosecond laser surgery in markazi clinic.
- **Methods:** INTRACOR was done on 22 eyes of 13 patients from 1389 11 20 with Technolas unit machine with internal nomogram in patients having mild hyperopia with minimal astigmatism above the age of 43 years.
- **Results:** UCVA for near 88.5% ≥ 7/10 Mean Central KR increase +2.25 D SE decreased from 1.1 to 0.03 D Far BCVA 10/10 (100%) NO LOSS of BCVA No change in IOP Streoipsis from 127.5 to 135 Post op RFN= ± 0.5 (100%) Refraction change from 1 to 12 month 0.07 D Mesopic Contrast sensitivity decreased significantly in order of C and D lines.
- **Conclusion:** 1 year results of INTRACOR femtosecond laser surgery is acceptable in regard of near and far visual acuity.

Karamat Panah, Fereidoon

Comparison of Visual, Refractive and Keratometric Outcomes of Conventional and SK Type INTACS for the Correction of Inferior Type Keratoconus

- **Authors:** Fereidoon Karamat Panah, Mohammad Nasser Hashemian
- **Purpose:** To compare visual, refractive and keratometric outcomes of conventional and SK type INTACS for the correction of inferior type Keratoconus with single-segment INTACS insertion.
- **Methods:** A total of 41 eyes were implanted with intacs.8 eyes were excluded because of loss of f/u (4 eyes), corneal tunnel vascularization (1 eye), tunnel infection (1eyes) and superficial perforation of intacs (2 eyes). Mean follow up was 13.33±1.94 month.
- **Results:** In conventional group, mean preoperative UCDVA was 2.82±0.257 improved to better than 4.94±0.246 (6mo postoperative) representing a gain of 2 lines, and in SK group mean preoperative UCDVA was 2.56±0.227 that improved to 2.46±0.309 that means two line improvement 6 month postoperatively (p=0.48). BSCVA in conventional group improved from 5.29±0.259 to 7.29±0.205 (2 lines improvement) and in SK group improved from 5.18±0.200 to 5.68±0.282 (.50 line improvement) (P=0.29). SE FROM -4.86±2.26 decreased to -3.57±2.21 (conventional group) and from -4.20±1.82 to -3.60±1.89 (P=0.34), AST from -5.20±2.07 and -4.50±2.26 to -4.02±2.57 and -3.18±2.14 in conventional and SK group respectively (P=0.68). Finally Kmin decreased from 47.11±2.51 to 45.40±3.30 in conventional group and 45.05±2.59 to 44±3.88 in SK group (P=0.63) and Kmax from52.82±3.23 to 50.52±3.57 and 49.72±3.17 to48.55±4.50 respectively (P=0.48).
- **Conclusion:** Single-segment intacs improved UCDVA and BSCVA, decreased AST, MRSE and Keratometry in both groups and provide similar outcomes. A better but not clinically significant BSCVA correction was achieved in conventional group.
Kashfi, Seyed Abolfazl

Femtosecond Laser Assisted LASIK Surgery in Hyperopia & Astigmatism

- **Authors:** Seyed Abolfazl Kashfi, Mohammad Ghoreishi, Mohadesheh Mohammadinia, Maryam Bahadoran
- **Purpose:** To evaluate efficacy and safety of Femtosecond laser assisted LASIK surgery in Hyperopia & Astigmatism
- **Methods:** We present a prospective clinical study of laser in situ keratomileusis in 20 eyes of 10 patients with compound hyperopic astigmatism with a mean spherical equivalent of +3.60 D and mean astigmatism of 1.25 D (group I) and in 12 eyes of 6 patients with mixed astigmatism with a mean spherical equivalent refraction of +0.06 D and mean astigmatism of 3.9 D (group II). Ablations performed using the Technolas 100 flying-spot excimer laser system; LASIK flaps were created using a LDV femtosecond laser (Ziemer Group) in all cases. In both groups a 6-month follow-up study was performed.
- **Results:** 6 months after surgery, mean spherical equivalent (SE) refraction was -0.14 ± 0.70 and 0.85 ± 0.48 in the compound and the mixed-astigmatism groups, respectively. The efficacy index was 0.66 ± 0.33 and 1.10 ± 0.19 in the two groups, respectively. The safety index was 0.93 ± 0.24 and 1.28 ± 0.16 in the two groups, respectively. Comparison of preoperative and postoperative aberrations showed that HOAs increased in the two groups but increases were relatively greater in the compound hyperopia group.
- **Conclusion:** Hyperopic LASIK using the femtosecond laser appears to be safe and effective in correction of hyperopia and astigmatism.

Kasiri, Ali

Efficacy of Intravitreal Bevacizumab Injection as a Primary Therapy for Stage 3+ Retinopathy of Prematurity

- **Authors:** Ali Kasiri, Foad Haghi, Fereydoun Farrahi, Mostafa Feghhi, Maryam Eskani Kazazi
- **Affiliation:** Ahvaz Jundishapur University of Medical Sciences
- **Purpose:** To evaluate therapeutic effects of Bevacizumab for stage 3 plus zone II retinopathy of prematurity (ROP).
- **Methods:** All patients with threshold ROP (stage 3 plus zone II) were treated with intravitreal injection of 0.625 mg Bevacizumab.
- **Results:** 26 eyes of 13 patients (7 female and 6 male) with stage 3 plus zone II ROP were enrolled. In all eyes 3 days after injection, retinal vessels dilation and tortuosity was decreased. Also one week after injection, retinal neovascularization were completely regressed. No recurrence and complication was found during 3months follow up.
- **Conclusion:** Intravitreal injection of bevacizumab is an easy, safe and effective modality of therapy for severe ROP.
Khabazkhoob, Mehdi

Contrast Sensitivity Evaluation in A Cross Sectional Study in Shahroud, Iran

- **Authors:** Hassan Hashemi, Mehdi Khabazkhoob, Ebrahim Jafarzadehpur, Mohammad Hassan Emamian, Mohammad Shariati, Akbar Fotouhi
- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** To determine the normal range of contrast sensitivity and its determinants through a population-based study in Shahroud, north of Iran.
- **Methods:** Using random cluster sampling from the 40-64 year old age in Shahroud, of 6311 sampled population, 5190 individuals (82.24%) participated in this population-based cross-sectional study. Participants had complete eye examinations including visual acuity and refraction tests, fundoscopy, and a slit lamp examination. Contrast sensitivity was tested using the CVS1000 (VectorVision, Inc).
- **Results:** Contrast sensitivity was tested in 965 people who remained after applying the exclusion criteria. Overall, mean contrast sensitivity in spatial frequencies of 3, 6, 12, and 18 cycles per degree (CPD) was 1.62 ±0.19, 1.87 ±0.22, 1.53 ±0.28, and 0.30 ±1.09 log units, respectively. Contrast sensitivity worsened significantly with age and decreased uncorrected visual acuity (P<0.001). Contrast sensitivity was significantly worse with myopia greater than 5.0 diopters (P<0.001). There was an inverse correlation between the amount of astigmatism and contrast sensitivity in all spatial frequencies (P<0.001).
- **Conclusion:** Contrast sensitivity declines with age, high myopia and astigmatism. The wide range of the variable, even in the presence of normal visual acuity, should be considered when contrast sensitivity is tested.

Khabazkhoob, Mehdi

Topographic Keratoconous Is Not Rare in Iranian Population: The Tehran Eye Study

- **Authors:** Hassan Hashemi, Mehdi Khabazkhoob, Akbar Fotouhi
- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** To determine the prevalence of topographic keratoconus in an Iranian population.
- **Methods:** In a cross-section study, samples were selected from from 4 districts of Tehran through stratified cluster sampling. Participants had ophthalmic and optometry examinations and Orbscan topography maps were acquired from 442 people. After the initial interview, Orbscan was done as the first test, between 9 am and 7 pm, according to the manufacturer’s instructions.
- **Results:** In the study sample, 263 people (61.7%) were female, and the participants' mean age was 40.8 ±17.1 years. The age and gender standardized prevalence of keratoconus was 3.3% with confidence interval from 0.1% to 5.5%. The standardized prevalence of bilateral keratoconus was 1.8% (95% CI: 0.2-3.5). The age-standardized prevalence of keratoconus was 3.9% and 2.6% in men and women, respectively (p=0.341). The prevalence of keratoconus was 0.8% in the 14-29 year old age group and 7.5% in≥60 year olds; the prevalence of keratoconus significantly increased with age (OR=1.05; 95% CI: 1.01-1.08). The prevalence of keratoconus was 2.5% (95% CI: 0.5-4.6) in the Persian ethnic group and 7.9% (95% CI: 1.6-15.7) among non-Persians (P=0.063 and OR=3.33).
- **Conclusion:** The prevalence of topographic keratoconus was significantly high among the citizens of Tehran.
Khakshour, Hamid

Effect of Corneal Cross linking with Riboflavin UV-A for Treatment of Post-LASIK Keratectasia

- **Authors:** Hamid Khakshoor, Alireza Eslampoor, Amir Hossin Vejdani
- **Affiliation:** Khatam Al Anbia Hospital, MUMS
- **Purpose:** To evaluate the effect of corneal crosslinking with riboflavin UV-A for the treatment of post-laser in situ keratomileusis (LASIK) keratectasia.
- **Methods:** A Prospective, observational, cross-sectional study in Navid didegan Eye Clinic. A total of 23 eyes of 12 patients were selected for corneal crosslinking. Standard examinations, including uncorrected visual acuity, best corrected visual acuity, slit lamp, and topographic examinations, were performed preoperatively. Patients were followed up at 1, 3, 6, 12, and 18 months after the procedure. Visual acuity outcomes and keratometry in the cases with ectasia were measured.
- **Results:** The mean uncorrected visual acuity values before and at 6, 12, and 18 months after the procedure were 0.54 ± 0.37, 0.41 ± 0.33, 0.42 ± 0.33, and 0.5 ± 0.36 logMAR, respectively (P = 0.011). The mean simulated keratometry values before and at 6, 12, and 18 months after the procedure were 43.49 ± 3.72, 42.68 ± 3.75, 42.62 ± 3.8, and 42.78 ± 3.84, respectively.
- **Conclusion:** Cross linking appears to be a safe procedure for stabilizing the progression of ectasia and improving uncorrected visual acuity and keratometry readings.

Koucheki, Behrooz

Early Versus Late Surgical Intervention for Hypotony Maculopathy after Trabeculectomy

- **Authors:** Behrooz Koucheki, Z Vahediamoli, Hassan Hashemi
- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** To compare the results of early versus late surgical intervention for treatment of hypotony maculopathy after trabeculectomy.
- **Methods:** Patients with decreased VA due to hypotony maculopathy after trabeculectomy, for whom surgical intervention to increase IOP had been performed, were included, and divided into two groups: early (within 6 weeks) or late surgical intervention (more than six weeks). The main outcome measures were: IOP and VA before and after trabeculectomy, and after surgical intervention to treat hypotony.
- **Results:** Nineteen patients were included. The mean follow up was 18.5±5.1 months and, the mean age was 42.8± 17.2 years. Mean IOP (±SD) before trabeculectomy, during hypotony period and after surgical intervention was 25.6±3.1, 2.1±1.8, and 15.5±5 mmHg respectively. Final VA of patients in early surgical intervention group was much better (0.2 log Mar, p<0.001). Younger age and higher degrees of myopia were also associated with lower final VA (p<0.05 for both).
- **Conclusion:** Early surgical intervention (less than 6 weeks) after decreased VA due to hypotony maculopathy was associated with much better final visual acuity. Younger myopic patients seemed to need early surgical intervention to prevent permanent decrease in visual acuity.
Makateb, Ali

Determinative Factors in Surgical Planning of Cosmetic and Reconstructive Eyebrow Surgery

- **Authors:** Mohammad Taher Rajabi, Ali Makateb, Fatemeh Bazvand, Seyyedeh Simindokht Hosseini, Seyyed Ziaeddin Tabatabaie, Mohammad Bagher Rajabi
- **Affiliation:** Eye Research Center, Farabi Eye Hospital, Tehran University of Medical Sciences
- **Purpose:** To identify the different factors that an oculoplastic surgeon should consider while practicing cosmetic or reconstructive eyebrow surgery in order to have the patient's final satisfaction.
- **Methods:** In an observational case series study five photographs were taken from 60 females while demonstrating their preferred eyebrow positioning with fingers. One photograph was chosen at last by each subject as the ideal brow position. Eyebrow landmarks including tarsal plate show and eyebrow height was measured in ideal eyebrow position of each subject. Brow apex position and brow apex angle was evaluated in desired position either.
- **Results:** The mean desired apex angle of eyebrow were measured 135.25 ± 8.89 mm. 49% of our subjects preferred a wider brow angle, 28% a narrower one and 23% a brow angle without any change. The location of brow peak was transferred to the lateral canthus in desired position. Ideal brow peak in the lateral canthus and between lateral canthus and lateral limbus assigned 33% and 67% of cases, respectively. The desired eyebrow apex angle in two age groups of >40 years and ≤40 years old subjects was not statistically different.
- **Conclusion:** Landmarks of the eyebrow and its desired position are somehow different between different studies which may be explained by variation in race, gender, culture and age. As there is not any uniform rule in planning of cosmetic surgeries of eyebrow, oculoplastic surgeons should consider the difference of culture, race, age, and desire of the patients to have their surgical plans for every individual patient distinctively.

Malekahmadi, Mohammad

Comparison of IOPen Rebound Tonometry with Goldmann Applanation Tonometry at Different IOP Levels

- **Authors:** Fereydoun Farrahi, Farideh Sharifpour, Mohammad Malekahmadi
- **Affiliation:** Department of Ophthalmology, Ahvaz Jundishapur University of Medical Sciences, Ahvaz
- **Purpose:** To compare the accuracy of IOPen rebound tonometry with Goldmann applanation tonometry (GAT) in individuals with low, normal and high intraocular pressure (IOP) and to evaluate the effect of central corneal thickness (CCT) on IOP measurements.
- **Methods:** This cross-sectional study consisted of 159 patients recruited from glaucoma clinic. IOP of one eye of each subject was measured consecutively with IOPen and GAT. Then CCTs of all individuals were measured using an ultrasonic pachymeter. Based on GAT IOP readings, participants were divided into three groups: low, normal and high IOP groups, including 53 members in each group. Agreement between the instruments was evaluated using the Bland-Altman method and limits of agreement (LOA) were calculated as bias ± SD×1.96. Any relationship between RT readings and CCT was checked by means of a linear correlation.
- **Results:** There was a good correlation between GAT and IOPen readings in all 3 groups. Non-significant underestimation of IOP by IOPen was observed in low (0.20 mmHg; P=0.454) and normal IOP groups (0.56 mmHg; P=0.065). Bland-Altman analysis shows agreement of IOP reading between IOPen and GAT is good in all three groups. It seems disagreement is higher with higher IOPs. IOP measurements taken by IOPen were not influenced by CCT (P=0.099) while some correlation between CCT and GAT was found. (P=0.032)
- **Conclusion:** Accuracy of IOPen rebound tonometer is comparable to GAT in patients with low or normal IOP but rebound tonometry slightly overestimates IOP in patients with high IOP. CCT does not affect IOP readings with IOPen.
Masoomian, Babak

Prevalence of Intraocular Injuries in Patients with Orbital Blowout Fractures

- **Authors:** Bahram Eshraghi, Babak Masoomian
- **Affiliation:** Tehran University of Medical Sciences, Farabi Eye Hospital
- **Purpose:** To determine the prevalence of intraocular injuries in patients with blowout fracture and also to evaluate the etiologic mechanism of orbital blowout fractures.
- **Methods:** Prospective analysis of 116 patients with orbital blowout fractures. The patients were visited by an ophthalmologist within 24 hours of trauma.
- **Results:** Ninety one men and twenty-five women with mean age of 29.1±13.9 years were included for this study. Fist trauma and assault (54%) was the most common cause of orbital blowout fractures. Inferior wall was involved more commonly (49%) than medial wall and combined form. Orbital reconstruction surgery was performed in 30% of cases. Intraocular injuries were detected in 23% of patients. Hyphema (65%) and commotio retina (39%) were the most frequent detectable intraocular injuries. Intraocular damages were significantly less common in patients with large fractures (synchronous medial and inferior wall fractures or fractures size equal or more than ½ wall area) in contrast to small size fractures (P=0.02).
- **Conclusion:** Low incidence of intraocular injuries in more severe fractures, can indicate that, during the blunt trauma to the periorbital and orbital tissue, direct contacts usually do not happen between the globe and orbital bony wall. We believe that, after blunt trauma, severe fractures can be resulted from buckling of the orbital wall.

Masoomian, Babak

Slanted Medial Rectus Resection for Exotropia of the Convergence Insufficiency Type

- **Authors:** Alireza Keshtkar Jafari, Ahmad Ameri, Mohammad Reza Akbari, Babak Masoomian
- **Affiliation:** Tehran University of Medical Sciences, Farabi Eye Hospital
- **Purpose:** To evaluate the surgical success rate of slanted medial rectus (MR) resection for intermittent exotropia (X(T)) of the convergence insufficiency type.
- **Methods:** In this prospective study we included 15 adults patients with X(T) greater at near than distance by 10 prism diopters (PD) or more. All patients had astenopia in near vision and undergone periods of unsuccessful nonsurgical orthoptic therapy. Patients received unilateral or bilateral slanted MR resection. The upper edge of the MR was resected more than the lower edge. Minimum follow-up was 9 months. We evaluated mean distance and near angle of deviation preoperatively and postoperatively; and mean near-distance exodeviation difference preoperatively and postoperatively.
- **Results:** After surgery, mean exodeviation at distance reduced from 11.40±7.13PD to 4.53±4.99PD (P<0.0001); mean exodeviation at near from 23.93±8.69PD to 10.73±5.91 PD (P<0.0001); and mean near-distance difference from 12.53±2.09 to 6.20±1.82PD (P<0.0001). At the final follow-up examination, 11 patients (73.3%) showed surgical success rate and recurrent exotropia occurred in 4 cases. Eight patients had esodeviation and diplopia at distance, but all resolved within 6 weeks.
- **Conclusion:** Slanted medial rectus resection, was found to successfully reduce both distance and near deviation and to collapse near-distance differences with a low risk of long-term esotropia.
**Mazouchi, Marjan**

Comparison of Propranolol and Indomethacin in the Treatment of Acute Central Serous Choriotretinopathy: A Placebo Controlled Randomized Clinical Trial

- **Authors:** Marjan Mazouchi, Toka Banaee, Nasser Shoeibi, Reza Alizadeh
- **Affiliation:** Khatam Eye Research Center and Hospital
- **Purpose:** To compare the effectiveness of oral Propranolol and Indomethacin on clinical course and visual outcome in acute central serous chorioretinopathy (CSC).
- **Methods:** 79 patients with acute CSC (disease duration < 6 weeks) were randomly assigned into 4 treatment groups: 3 groups receiving Propranolol, Indomethacin, and placebo and one group with no medication. Best corrected visual acuity (BCVA), funduscopy and optical coherence tomography were done at first visit and then every 2 weeks for 6 weeks. Patient satisfaction was questioned and reported as satisfied or not.
- **Results:** 54 patients (68.4%) were male. There was no significant difference in mean central retinal thickness (\( P=0.314 \)) and in mean BCVA (\( P=0.609 \)) between various groups at the initial and 2, 4 and 6 weeks visits. Time to resorption of subretinal fluid was not different in various groups. Patients were more satisfied with propranolol use. There were 7 cases of discontinuation of indomethacin due to GI upset.
- **Conclusion:** Oral Propranolol and Indomethacin had no therapeutic effect on central macular thickness and visual acuity in acute CSC.

**Medghalchi, Abdorreza**

Evaluation of the Surgical Results of Superior Oblique Palsy

- **Author:** Abdorreza Medghalchi
- **Affiliation:** Eye Research Center, Amiralmomenin Hospital, Guilan University of Medical Sciences, Rasht
- **Purpose:** To evaluate the surgical results of superior oblique palsy according the primary deviation, grade of inferior oblique overaction (IOOA), superior oblique under action (SOUA) and head tilt.
- **Methods:** This retrospective study was done in 80 cases. According to primary deviation, patients categorized into 4 groups such as less 10, 10-20, 20-30 and over 30 prism diopter. Inferior oblique myectomy, inferior oblique recess and anteriorization, inferior oblique myectomy & contralateral inferior rectus and 3 muscles surgery in groups 1,2,3,4 respectively. Patient’s data such as pre & post op primary deviation, grade of IOOA, SOUA and amount of head tilt extracted & compared with SPSS 16. The success rate was defined primary deviation less than 5 prism, disappearance of head tilt, IOOA, SOUA, less than 1 +
- **Results:** Total subjects were 80 cases the distribution of groups(I,II,III,IV ) were 20%,50% ,20% , 10% respectively. The mean age of patient was 8.5(2-38) The mean pre op primary deviation was 18 prism diopter (8-35) that decrease to 5 prism diopter in 80% of cases. The mean pre op IOOA is 2.5 + that decrease to 0.6+ in 75% of cases. Head tilt decreased in 100% of cases, but disappeared in 80% of cases. Success rate in group I & III was 100%, but in group 2, 4 was 80%.
- **Conclusion:** This study showed that in group 2 with primary deviation 10-20 prism diopter, surgery is inadequate in some cases and need further surgery.
Medghalchi, Abdorreza

Evaluation of the Treatment of Different Types of Amblyopia in Patients Over 10 Years Old

- **Author:** Abdorreza Medghalchi
- **Affiliation:** Eye Research Center, Amiralmomenin Hospital, Guilan University of Medical Sciences, Rasht
- **Purpose:** To evaluate the results of treatment of different types of amblyopia in patients over 10 years during 5 years.
- **Methods:** This retrospective study was done in 100 patients with age between 10 to 20 years with refractive, strabismic and deprivation amblyopia under combined treatment of atropine penalization and patch therapy. Patients data such as initial & final visual acuities, type of amblyopia and strabismus, cycloplegic refraction and duration of follow-up (at least 6 months). success rate was defined as at least 2 line improvement in visual acuity during 3 months of treatment. The results compared with SPSS 16.
- **Results:** Total subjects were 100 cases with mean aged 14 years (10-19). About 50% of cases belong to refractive, 30% to strabismic amblyopia and remainder was deprivation amblyopia. Success rates were 50% in refractive amblyopia and 4 line improvement in visual acuity in 30%. the success rate was 10% in strabismic amblyopia. There is no any improvement of visual acuity in deprivation amblyopia.
- **Conclusion:** This study showed that treatment of amblyopia in patient over 10 years was successful in refractive amblyopia with small effect in strabismic amblyopia and no effect in deprivation amblyopia.

Miraftab, Seyed Mohammad

Modified Randleman Scoring System for Risk Assessment of Post-LASIK Ectasia

- **Authors:** Seyed Mohammad Miraftab, Akbar Fotouhi, Hassan Hashemi, Fatemeh Jafari, Ashkan Shahnazi, Soheila Asgari
- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** To evaluate and modify the Randleman ectasia risk score system enabling better prediction of post LASIK ectasia in Iranian patients.
- **Methods:** In this retrospective study Randleman System parameters and other data were collected from patients' files. A modified model to predict risk of post-LASIK corneal ectasia better was designed and the sensitivity and specificity of this modified model ectasia risk score system determined.
- **Results:** The sensitivity and specificity of the Randleman system in our sample was 70.1% and 50.5%, respectively. The modified model included the following parameters: central corneal thickness, manifest refraction spherical equivalent, months after surgery and maximum keratometry with a sensitivity and specificity of 80.6% and 73.3%, respectively. Our model showed the best sensitivity and specificity at a cumulative score cutoff score of 3.5. Therefore, patients with a computed risk score ≤3.5 were considered of low risk for ectasia, whereas those >3.5 were considered high risk. The difference between the receiver operating characteristic curve in Randleman and modified systems was marginally statistically significant (P=0.052).
- **Conclusion:** The modified ectasia risk score system can predict post LASIK ectasia risk with an acceptable sensitivity and specificity. However there are still unidentified ectasia risk factors that have not been identified nor measured.
Miraftab, Seyed Mohammad

Comparing Manual and Femtosecond Methods of Implanting Intacs in Keratoconic Patients

- **Authors**: Hassan Hashem, Seyed Mohammad Miraftab, Soheila Asgari
- **Affiliation**: Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose**: To study the visual and corneal topography results of placing intacs using manual and femtosecond methods in contact lens intolerant keratoconic patients.
- **Methods**: In this retrospective study, UCVA, BCVA, corneal cylinder including max-k, min-k, mean-k and MRSE were studied in 92 patients using manual method and 62 people using femtosecond laser 6 months after implanting intacs.
- **Results**: UCVA in the manual group increased from 1.08±0.07 before surgery to 0.64±0.05 logmar after surgery. These figures were 0.88±0.09 and 0.49±0.05 logmar for the femtosecond group, respectively. BCVA in the manual group increased from 0.36±0.02 before surgery to 0.28±0.02 logmar after surgery. These figures were 0.28±0.02 and 0.21±0.3 logmar in the femtosecond group, respectively. Max-k, min-k, mean-k reduced 2.82±10.68, 2.40±9.65 and 2.61±10.60 D in the manual group and 2.08±1.84, 1.67±1.40 and 1.87±1.30 D in the femtosecond group, respectively. Therefore, no significant difference was observed between the two groups in terms of visual improvement, BCVA and cylinder. But, extraction and extrusion of the ring was higher in manual group (8 eyes) compared to the femtosecond group (5 eyes).
- **Conclusion**: While cylinder changes and visual improvement were not different between manual and femtosecond laser methods for implantation of intacs, the former shoed higher chance of extraction and extrusion.

Mirzajani, Hoora

Flourscein Dye Disappearance Test: Prediction of Success after DCR

- **Authors**: Mohsen Bahmani Kashkouli, Hoora Mirzajani, Farzad Pakdel, Mansooreh Jamshidian
- **Affiliation**: Eye Research Center, Rassoul Akram Hospital, Tehran University of Medical Sciences
- **Purpose**: To evaluate the role of Flourscein dye disappearance test (FDDT) after DCR for PANDO.
- **Methods**: In a prospective study between 2008 to 2010, 58 eyes of 58 patients underwent DCR and FDDT was checked in different times postoperatively at 1week, pre tube removal, just after tube removal (Irrigation passage of > 80%: final anatomical success) and 1 week after tube removal (Munk grade of ≤ 1: final subjective success). Negative results of FDDT in 5 minutes (FDDT Success) were compared with the anatomical (AS) and subjective success (SS) of DCR.
- **Results**: There was not statistically significant correlation (SSC) between SS at 1 week post op. (84.4 %) and final SS (91.4 %)(Pearson=0.03, P=0.77). There was also not SSC between one week post op (63.79 %) and final (93.1 %) FDDT success (Pearson=0.02, p=0.88). However, there was SSC between final AS (96.5 %) and FDDT Success (89.65 %)(Pearson=0.55, P=0.00). There was also SSC between final SS (91.4 %) and final FDDT success (87.93 %) (Pearson= 0.70, P=0.00).
- **Conclusion**: This study showed that FDDT had a SSC with the final success of DCR procedure (anatomical and subjective). Such a correlation was not evident while tube was present.
Mohammadpour, Mehrdad

Measurement of Cyclotorsional Displacement Using Iris Registration among Iranian Patients with Significant Astigmatism

- **Authors:** Mehrdad Mohammadpour, Hassan Hashemi, Mahmood Jabbarvand, Firoozeh Rahimi, Amirhooshang Beheshtnejad, Mohammad Nasser Hashemian, Mohammad Reza Fallah Tafti, Mohammad Ali Zare Mehrjerdi
- **Affiliation:** Eye Research Center, Farabi Eye Hospital, Tehran University of Medical Sciences
- **Purpose:** To determine cyclotorsional eye movement between the upright position and the supine position, in Iranian patients with high preoperative astigmatism.
- **Methods:** This prospective cross sectional study contains 102 eyes of 59 Iranian patients who were candidates for refractive surgery with Technolas 217z100 excimer laser system for correction of high astigmatism. Wavefront measurements using Zywave II, Hartmann Shack aberrometer were performed in seated position. For all patients the amount of cyclotorsion before surgical procedure in supine position was measured by iris registration and the comparison between preoperative examinations in seated position with the supine position resulting in the amount of cyclotorsion was conducted by iris registration.
- **Results:** The mean cyclotorsion was found 3.18±2.37(SD) degrees significantly greater than zero degrees specifically 3.28±2.28(SD) degrees in excyclotorsion and 3.01±2.54(SD) degrees in incyclotorsion. Excyclotorsion was predominant trend of rotation in comparison with incyclotorsion in both right and left eyes. The amount of rotation greater than 2, 5 and 7 degrees occurred in 59.8%, 21.6% and 5.9% of the eyes, respectively.
- **Conclusion:** This study confirms significant rotational movement between the upright position and the supine position. Proper registration for appropriate correction of astigmatism and higher order aberrations for achieving optimal visual outcomes is recommended.

Mosavi, Seyed Aliasghar

The Impact of Meteorological Condition on Acute Presentation of Angle Closure in East Coast of Malaysia

- **Authors:** Seyed Aliasghar Mosavi, AT Liza-Sharmini
- **Affiliation:** HUSM
- **Purpose:** To determine the association between acute presentation of primary angle closure (APAC) and meteorological factors.
- **Methods:** Hospital admission data of 73 patients with APAC presented at Hospital University Sains Malaysia and Hospital Raja Perempuan Zainab II Kota Bharu in period of 2001-2011 was retrospectively analyzed. First data determined from history recorded from patient’s medical record. Meteorological data were obtained from Malaysian meteorological department. Spearman correlation was performed to evaluate the effects of climate indices and angle closure attack.
- **Results:** Mean intraocular pressure was 55±11.6 mmHg. Mean age was 61.6±9.01 predominantly higher in females (76.6%). A moderate to strong correlation was found between time of angle closure attack and meteorological factors including relative humidity (r= 0.508) number of raindays (r= 0.718) rainfall amount (r= 0.587) and mean cloud cover (r= 0.632) but inverse relationship with the mean daily global radiation (r= -0.596).
- **Conclusion:** APAC is strongly induced by the environmental factors in a susceptible eye. During monsoon season with high cloud cover and high amount of rain, pupil block induced that is responsible of APAC.
Motallebi, Mahmoud

Changes of Intraocular Pressure after Endoscopic Cyclophotocoagulation in Patients with Diabetic Neovascular Glaucoma

- **Authors:** Mohsen Farvardin, Mehrdad Afarid, Mahmoud Motallebi, M Mosallaei, N Taheri
- **Affiliation:** Poostchi Eye Research Center, Department of Ophthalmology, Medical School, Shiraz University of Medical Sciences
- **Purpose:** To evaluate the efficacy of endoscopic cyclo-photocoagulation of the ciliary processes and Phacoemulsification-deep Vitrectomy on the intraocular pressure of patients with diabetic neovascular glaucoma.
- **Methods:** Nine Phakic eyes of 8 patients with advanced diabetic retinopathy and neovascular glaucoma (NGV) and uncontrolled IOP with four topical anti-glaucoma medications were entered in this study. Best corrected visual acuity (BCVA), IOP and the number of anti-glaucoma medications for control of IOP was the main outcome measurements. IOPs were uncontrolled (≥21mmHg) with 4 topical anti-glaucoma agents. Twenty gauge parsplana deep vitrectomy with phacoemulsification and intraocular lens with 180-270 degree(as match as technicall possible) inferior endoscopic cyclophotocoagulation(ECP) was done for all the patients. If IOP was more than 21mmHg one, two or more topical anti-glaucoma medications would be used. The main outcome parameters were evaluated one and three months after the procedure, respectively.
- **Results:** Mean of IOP before operation was 45.9±11.3 mmHg and changed to 19.2± 8.9 mmHg one month and 16.9±1.6 mmHg three months after the operation (P< 0.001). Mean of logarithm of the minimum angle of resolution (logMAR) BCVA before operation was 1.47±0.27 which changed to 1.13±0.12 one month (p=0.03) and 1.15±0.13 (p=0.008) three months after operation. The mean medication for control of IOP in one month was 1.8±0.97 (p<0.0001) and in three months was 1.5±0.5 (p<0.0001).
- **Conclusion:** Phaco and deep vitrectomy with ECP may improve the visual acuity and may control IOP in patients with Phakic diabetic NVG.

Motallebi, Mahmoud

Safety and Efficacy of Topical Tranexamic Acid 5% in the Management of Traumatic Hyphema

- **Authors:** Hamid Reza Jahadi Hosseini, Mohammad Reza Khalili, Mahmoud Motallebi
- **Affiliation:** Poostchi Eye Research Center, Department of Ophthalmology, Medical School, Shiraz University of Medical Sciences
- **Purpose:** To determine the safety and efficacy of topical tranexamic acid 5% in the management of traumatic hyphema.
- **Methods:** Thirty patients with gross traumatic hyphema were entered in this study. Complete ophthalmic examination was performed. Patients were treated with Tranexamic acid 5% eye drop every 6 hour for 5 days. The main outcome measures were BCVA, IOP, day of clot absorption, and rate of rebleeding. BCVA and IOP values were compared with these parameters before the treatment.
- **Results:** Twenty two patients (73.3%) had grade 1 layer hyphem, five patients (16.7%) had grade 2, and three patients (10%) had grade 3 layer hyphema. Mean logarithm of the minimum angle of resolution (logMAR) BCVA before treatment was 0.59±0.62, which changed to 0.08±0.14 at day 14 (P<0.001). The mean of IOP before treatment was 13.7±3.9 mmHg which changed to 11.4±1.8 mmHg at day 14 (P=0.004). The mean day of clot absorption was 4.1±1.7 days. Rebleeding occurred in one patient (3.3%) on day of 4. When our patients compared with an historic control group of patients with hyphema who had been treated with systemic tranexamic acid at our department, there was no statistically significant difference in rate of re-bleeding (P=0.2) the topically applied tranexamic acid well tolerated locally without evidence of systemic toxicity.
- **Conclusion:** This study provides evidence that topical tranexamic acid is safe and may be an effective alternative to systemic treatment to reduce the incidence of secondary hemorrhage in traumatic hyphema.
Nabie, Reza

The Effect of Bicanalicular Intubation on Success Rate of Primary Acquired Nasolacrimal Duct Obstruction

- **Authors:** R Nabie, D Andalib, R Sabouri Hamed, N Molazadeh
- **Affiliation:** Nikookari Eye Centre
- **Purpose:** To compare success rate of external dacryocystorhinostomy (DCR) with and without bicanalicular silicone intubation in patients with primary acquired nasolacrimal duct obstruction (PANDO).
- **Methods:** In a randomized clinical trial study, patients with PANDO randomly entered into two groups. In group 1 DCR performed without silicone intubation and in group 2 with bicanalicular intubation. Patients were evaluated for age, gender, history, and presenting symptoms. Tube removal was planned for 6 weeks postoperatively and 3 months after operation success was assessed objectively (probing and irrigation) and subjectively (Munk score). Munk score of 0-1 and patency in probing and irrigation considered as success.
- **Results:** 51 patients (26 patients in group 1 and 25 patients in group 2) enrolled the study. The mean age was 48.3±21.2 and 46±15.7 years in groups 1 and 2 respectively (P=0.66). Mean follow up time was 7.2±2.5 and 6.1±1.6 weeks in group 1 and 2 respectively. Subjective and objective success in group 1 were 92.3% and 96.2% and in group 2 92% and 100% respectively.
- **Conclusion:** Both techniques have high success rate. We believe that the success rate depends mainly on the surgeon’s experience.

Nabie, Reza

Anchored Versus Conventional Hang-Back Technique for Bilateral lateral Rectus Muscle Recession in Patients with Exotropia

- **Authors:** R Nabie, D Andalib, R Sabouri Hamed, N Molazadeh
- **Affiliation:** Nikookari Eye Centre, Tabriz University of Medical Sciences
- **Purpose:** To compare the results of conventional hang-back and anchored hang-back technique for bilateral lateral rectus muscle recessions in patients with exotropia.
- **Methods:** In a prospective, randomized clinical study, 60 patients underwent lateral rectus muscle recession by either conventional hang-back or anchored hang-back technique. Patients were then followed for 6 months; postoperative deviation and complications were compared. Surgery was considered successful if the postoperative deviation was within 10D of orthophoria.
- **Results:** The mean age of patients was 14.2±10.3 years (median, 12 years) in the conventional hang-back group and 11.5±9.3 years (median, 8 years) in anchored group (P =0.85). The mean preoperative deviation at distance and near between the 2 groups was not statistically significant. The mean postoperative deviation was 8D 9D at distance and 7D 9D at near in the conventional group and 9D 8D at distance and 8D 8D at near in the anchored group. (P = 0.48 for distance, P =0.98 for near). After 6 months, 63% of the conventional group and 60% of the anchored group were within 10D of orthophoria. Complications such as globe perforation, A and V patterns, and vertical deviations did not occur in either group. There were no statistically significant differences in the success rates (P=0.79) or complications between the 2 groups.
- **Conclusion:** The placement of additional posterior scleral sutures to “anchor” the insertion did not improve outcomes in lateral rectus muscle recession surgery.
Naseripour, Masood

Genotype – Phenotype Correlation in Iranian Patients with Retinoblastoma

- **Authors:** Masood Naseripour, Kourosh Shahraki, Babak Behnam, Ahad Sedaghat, Ali Ahani
- **Affiliation:** Eye Research Center, Department of Ophthalmology, Rassoul Akram Hospital, Tehran University of Medical Sciences (TUMS)
- **Purpose:** To find the correlation between the mutations types and the clinical findings in patients with retinoblastoma.
- **Methods:** This was a case series study. Patients who had been screened for mutations in the RB1 gene were included in the study. Patient characteristics including demographic data; age and sex, laterality, international classification of intraocular retinoblastoma (ICRB) grouping, management modalities and final situation of eye were assessed.
- **Results:** 34 patients were studied. 18 patients had bilateral and 16 patients had unilateral disease. Mutations identified in 16 patients (6 female and 10 male, 14 bilateral and 2 unilateral). Multifocal and unifocal involvement was evident in 11 and 5 patients respectively. Of those patients with identified mutations, 6/16 of cases had large deletions, 2/16 had small deletions or insertions and 8/16 (50%) found to have nonsense mutations. The family history in all patients with mutations was negative. Group D eyes at presentation were noted in 6/16 of patients, (50 % in large RB1 deletions). In 5/16 of patients one eye was enucleated, that 80 % of them had nonsense mutation.
- **Conclusion:** Current laboratory testing of RB1 mutations may be feasible in determining the severity of the disease and patient counseling. The study provides a starting point for looking at correlations.

Nassiri, Nader

Erythropoietin Levels in Aqueous Humor of Patients with Glaucoma

- **Authors:** N Nassiri, M Majid, H ZMehrjardi, Y Shakiba, M Haghnegahdar, AB Heidari, AR Djalllian, M Mirahmadian
- **Purpose:** To compare the aqueous concentration of erythropoietin (EPO) in eyes with primary open-angle (POAG), psedoexfoliative (PXFG), and neovascular (NVG) glaucoma with age-matched eyes with cataracts.
- **Methods:** A total of 26 eyes with cataracts (control group) and 92 glaucomatous eyes (POAG, 40 eyes; PXFG. 26 eyes; NVG 26 eyes) were enrolled. Aqueous samples were obtained during phacoemulsification, trabeculectomy, phacotrabeculectomy, or Ahmed valve glaucoma implants.
- **Results:** The mean aqueous level of EPO was statistically significantly higher in eyes with glaucoma (56.7±9.3 MIU/ml) compared to the control group (0.8±0.51MIU/ml; p 0.001). Eyes with NVG had the highest aqueous level of EPO. Aqueous EPO concentrations remained considerably elevated even in eyes with controlled IOP in all three types of glaucoma. Eyes with PXFG displayed the greatest change in aqueous EPO concentration proportionate to the IOP level. In simple regression analysis, IOP, mean deviation, and the type of glaucoma were the factors that had a statistically significantly positive correction with the aqueous level of EPO (P=0.011 and <0.01, respectively).
- **Conclusion:** Compared to the control group, the aqueous humor EPO concentration is increased in eyes with POAG, PXFG, and NVG, both with and without controlled IOP. The aqueous level of EPO was more.
Nazari, Hossein

Complement Regulatory Genes in Correlation with AMD Risk in Iran

- **Authors:** Hossein Nazari, Khalil Ghasemi Falavarjani, Mohammad Hassan Sanati, Alireza Irani, Massih Hashemi, Mehdi Modarreszadeh, Mehdi Parvareh, Aminollah Nikeghbali
- **Affiliation:** Eye Research Center, Rassoul Akram Hospital, Tehran University of Medical Sciences; Doheny Eye Institute, University of Southern California
- **Purpose:** Local inflammation is a key contributor in the development of age related macular degeneration (AMD). Several mutations in complement system regulatory genes are connected to the risk of AMD in different populations, but the frequency of these genes and their risk in developing AMD in Iranians is not clear.
- **Methods:** Seventy patients with AMD and 86 age and sex matched non-AMD controls were included. DNA was extracted from the peripheral blood buffy coat and analyzed for the presence of Y402H mutation, LOC387715 A69S mutation, and P314L and R102G genes by polymerase chain reaction technique. The allele and genotype frequencies of cases and controls were compared by Chi square analysis.
- **Results:** Risk of AMD increased in those with the homozygous genotype for Y402H (OR 4.8; 95% CI 1.9–12.1). LOC387715 A69S mutation homozygocity was also a risk factor for AMD (Odds ratio 2.2, 95% CI 1.6-3.1). P134 and R102G gene heterozygocity and homozygocity were not different in AMD patients and non-AMD controls (P=0.14).
- **Conclusion:** Complement factor H Y402H and LOC387715 A69S mutations are the major risk factors for AMD in Iranian patients. P314L and R102G mutations in complement factor C3 gene are not associated with AMD risk in Iranians.

Nejabat, Mahmoud

Efficacy and Safety of Corneal Collagen Cross-Linking In Patients with Progressive Keratoconus: A 12 Months Follow-Up Study

- **Authors:** M Nejabat, T Arab, MR Khalili
- **Affiliation:** Poostchi Ophthalmology Research Center, Department of ophthalmology, Shiraz University of Medical Sciences
- **Purpose:** To evaluate the efficacy and safety of corneal collagen cross-linking in patients with progressive keratoconus.
- **Methods:** In this prospective study, 31 eyes of 19 patients with progressive keratoconus were included. After removal of epithelium in the 9 mm central diameter, cornea was exposed to UVA/ riboflavin. Principal outcomes included Best spectacle corrected visual acuity (BSCVA), Manifest Spherical Equivalent (SEQ), Manifest Cylinder, Steepest Simulated Keratometry (SimK), Flattest SimK, Average SimK, Cylinder SimK, endothelial cell density and intraocular pressure. Measurements were performed and compared at baseline and 12 month follow-up visits.
- **Results:** Mean baseline BSCVA (log MAR) was 0.17±0.11, and 12 month mean BSCVA (log MAR) was 0.08 ± 0.10 (P=.001). Mean manifest SEQ did not changed significantly but mean manifest Cylinder was decreased (P=0.21, P=0.017 for manifest SEQ and manifest Cylinder, respectively). Mean steepest SimK, flattest SimK and average SimK were reduced (P<0.001, P<0.004, P<0.001 for steepest SimK, flattest SimK, average SimK, respectively). Mean Cylinder SimK, endothelial cell count and intraocular pressure did not changed significantly.
- **Conclusion:** CXL seems to be a safe and effective modality for management of patients with progressive keratoconus.
Nourinia, Ramin

ROCK as a New Target for Treatment of Diabetic Macular Edema: A Pilot Study

- **Authors:** Hamid Ahmadieh, Ramin Nourinia, Mohammad Hassan Shahheidari, Ali Hafezi Moghadam
- **Affiliation:** Ophthalmic Research Center, Labbafinejad Medical Center, Shahid Beheshti University of Medical Sciences, Tehran, Iran
- **Purpose:** To evaluate the effect of intravitreal injection of a ROCK inhibitor (Fasudil) combined with bevacizumab (IVB) on refractory diabetic macular edema (DME).
- **Methods:** This prospective study includes 15 eyes with DME unresponsive to previous IVB injections. Eligible eyes underwent intravitreal injection of 0.025 mg Fasudil and 1.25 mg bevacizumab. BCVA and CMT were re-evaluated at week 4.
- **Results:** Mean pre-injection BCVA was 0.84 ± 0.35 LogMAR, which was improved to 0.49 ± 0.29 LogMAR (p=0.003). Mean CMT was decreased from 448 ± 123 μm before treatment to 347 ± 76 μm (p=0.001). No adverse events were observed.
- **Conclusion:** Intravitreal ROCK inhibitors may improve structural and visual outcomes in eyes with DME refractory to IVB monotherapy.

Nourinia, Ramin

Intravitreal Fasudil Injection as a New Modality in Recent Onset Non-Arteritic Anterior Ischemic Optic Neuropathy

- **Authors:** Hamid Ahmadieh, Mohammad Pakravan, Ramin Nourinia, Mohammad-Hassan Shahheidari, N Sanjari, Ali Hafezimoghadam
- **Affiliation:** Ophthalmic Research Center, Labbafinejad Medical Center, Shahid Beheshti University of Medical Sciences, Tehran
- **Purpose:** To evaluate the effect of intravitreal injection of fasudil (IVF), in non-arteritic anterior ischemic optic neuropathy (NAION).
- **Methods:** In this pilot comparative study, 27 eyes of 26 patients with NAION were enrolled. Fasudil 0.025mg/0.05ml injection within 2 weeks of the insult was compared with placebo in controls of another parallel study.
- **Results:** Six eyes of 5 cases received IVF and 21 eyes were selected as controls. Visual acuity improvement was significant one month after IVF (p=0.043), and was more than controls (P=0.010). Mean deviation changes in perimetry were not different between groups (P=0.705).
- **Conclusion:** IVF has shown promising short-term efficacy in management of NAION, and warrants larger trials with longer follow up for better evaluation.
Assessment of the Electrophysiologic Function of Retina Before and After Photochemotherapy (Methoxsalen+UVA)

**Authors:** N Shoeibi, AR Taheri, A Omid Tabrizi, M Nikandish, N Khosravi

**Affiliation:** Khatam Al Anbia Eye hospital, Eye Research Center, Medicine Faculty, Mashhad University of Medical Sciences

**Purpose:** To evaluate the effect of the PUVA (methoxsalen+UVA) therapy on retinal photoreceptor function.

**Methods:** Standard electroretinogram was performed with RETIport32 device in 18 patients suffering from psoriasis or vitiligo and 2 patients with eczema before and after 6 months PUVA therapy. They had no other ocular or systemic diseases.

**Results:** Forty eyes of 20 patients were evaluated [24 females and 16 males, with the mean age of 31.1± 12 years (13-57)]. The amplitude of scotopic b-wave and mesopic b-wave responses showed decrease, but not statistically significant (p=0.78, p=0.72 respectively). The photopic a-wave response decreased significantly (p=0.04). The amplitude of the mesopic a-wave and photopic b-wave responses were increased; but again the difference was insignificant (p>0.05).

**Conclusion:** Although a small percent of UV-A can theoretically reach to theretina, consumption of psoralene increases the susceptibility of the photoreceptors to UV damage. UV absorbing glasses limits this exposure. Incidental ERG abnormalities recorded in a few patients undergone PUVA therapy, raised concern about the adverse effects of PUVA on retinal function. Our study doesn’t prove this hypothesis and PUVA therapy seems to be safe for retinal photoreceptors. However, longer follow up time may be needed.

A Prospective Study of Optic Nerve Sheath Fenestration in Idiopathic Increased Intra-Cranial Pressure: The Preliminary Report of Visual Results

**Authors:** Farzad Pakdel, Mostafa Sultan Sanjari, Mohsen Bahmani Kashkouli, Mehdi Moghadassi, Mohammad Rohani, Benissa

**Affiliation:** Ophthalmology Department, Ophthalmic Plastic Unit, Eye Research Center, Rassoul Akram Hospital, Tehran University of Medical Sciences

**Purpose:** To determine the efficacy and safety of optic nerve sheath fenestration (ONSF) in patients with idiopathic increased intracranial pressure (IIH).

**Methods:** In a prospective controlled study from August 2010 to February 2012, data of those patients with idiopathic increased intracranial pressure and progressive optic nerve dysfunction, who did not respond to maximal medical or surgical measures, and underwent medial ONSF, if had more than 6 months follow up, were analyzed.

**Results:** Seventeen eyes of 13 patients with IIH underwent ONSF via medial approach. Mean age was 32.8(SD=12.98). Mean time interval between the first detection of visual compromise and ONSF was 29 (SD=15.7) days. Mean follow-up was 10.24 (SD=5.47) (range=6-19) months. Mean of last BCVA (-0.62) (SD=0.68) showed improvement compared to mean of initial BCVA (-1.39) (SD=1.4) (p=0.003). Papilledema was partially or completely resolved in all subjects in the operated eye within the first month after ONSF. No major complication was observed.

**Conclusion:** In patients with IIH and progressive visual loss despite maximum medical therapy, ONSF can be a safe and effective method that could preserve or improve optic nerve function if appropriate discipline and method are contemplated and accomplished.
Pakdel, Farzad

A Survey of Orbital Fracture in an Ophthalmic Plastic Referral Center

- **Authors:** Farzad Pakdel, Anis Sadat Jazayeri, Mohsen Bahmani Kashkouli, Gholam Hossein Aghaii, Betsa Parsa
- **Affiliation:** Ophthalmology Department, Ophthalmic Plastic Unit, Eye Research Center, Rassoul Akram Hospital, Tehran University of Medical Sciences
- **Purpose:** To review the orbital fracture cases who admitted in our Ophthalmic Plastic center.
- **Methods:** We reviewed charts of patients with orbital fracture referred or admitted in our ophthalmic plastic clinic in a tertiary university based general hospital from December 2009 to March 2012. Data including, location of fracture, presence and amount of globe malposition, presence and type of adnexa and ocular injury, type of treatment plan and post op globe postion, pre-op and post-op ocular movement and visual acuity and complications were recorded.
- **Results:** Sixty four charts were reviewed and 5 charts were excluded for the absence of adequate information. 73% were male. Mean age of patients was 23.48 (SD=11.30) (range=2-55) years. The most frequent location was floor (28/59)(44.4%), pure medial wall was 2/59(3.0%). Zygomatic complex was involved in 20.6% of all. Initially 28.6% had diplopia. Associated globe injury was present in 22.2%, adnexal injuries included ptosis (9.5%), canalicular damage (11.1%). Enophthalos was initially present in 61% and entrapment of the inferior rectus muscle in 17.5% of all subjects.
- **Conclusion:** Orbital fractures are associated with significant aesthetic and functional deficits. Furthermore, these patients frequently have other significant ocular, optic nerve or adnexal injuries. Therefore, dealing with these cases necessitates careful assessment and appropriate surgical and nonsurgical ophthalmic considerations.

Pakrah, Ahmad Reza

Relationship between Education and Risk of Open Globe Injury

- **Authors:** Ahmad Reza Pakrah, Ali Tabatabaee, Mahmood Jabbarvand Behrooz, Mohamad Reza Mansoori
- **Affiliation:** Eye Research Center, Farabi Eye Hospital, Tehran University of Medical Science
- **Purpose:** To assess relationship between education and risk of open globe injury
- **Methods:** The medical records of 1255 patients more than 18 years with open globe injury who were admitted in Farabi eye hospital since September 2007 to May 2012 were respectively reviewed.
- **Results:** Of 1255 patients, 5 patients- 0.398 percent- had PHD degree ,16 patients - 1.27 percent-had master of science , 37 patients - 2.94 percent - had bachelor of science , 103 patients - 8.2 percent - had associated degree, 215 patients - 17.1 percent - had diploma. Total of patients who had diploma and more 376 patients - 29.97 percent - 0.879 patients-70.03 percent- unlettered or under diploma.
- **Conclusion:** Based on this finding, the risk of open globe injury significantly increased in population with low degree of education.
Erythropoietin as an Adjunctive Treatment for Methanol Optic Neuropathy

Authors: Mohammad Pakravan, Nasrin Sanjari
Affiliation: Ophthalmic Research Center of Shahid Beheshti University
Purpose: To report 2 patients with methanol optic neuropathy treated with intravenous erythropoietin
Methods: In this interventional case report, 2 patients with methanol optic neuropathy were treated with intravenous erythropoietin 10000 IU twice a day for 3 days, methylprednisolone 500 mg twice a day for 5 days (followed by 2 weeks of oral prednisolone 1mg/kg/day), and daily doses of vitamin B12, vitamin B6 and folic acid for one month.
Results: At presentation, both patients had no perception of light in either eye, associated with mildly swollen optic discs. OCT revealed increased thickness of the PRNFL in all four eyes. Both patients responded dramatically to the treatment regimen. Best-corrected visual acuity improved to 20/20 in both eyes within 3 days in the first patient. The second patient experienced improvement in vision to counting fingers at 2 meters with the right eye and to 20/30 with left eye within 3 weeks. Visual field testing revealed marked constriction of the fields with residual central islands of vision of about 10 degrees in all four eyes. OCT revealed progressive thinning of the PRNFL over a period of 3 months, during which the optic discs of both patients became pale.
Conclusion: Intravenous erythropoietin may be an effective adjuvant when combined with current treatment for patients with methanol optic neuropathy.

A Population-based Survey on the Prevalence and Types of Glaucoma in Central Iran: The Yazd Eye Study

Authors: Mohammad Pakravan, Shahin Yazdani, Mohammad Ali Javadi, Heidar Amini, Zohreh Behroozi, Hossein Ziaei, Marzieh Katibeh, Reza Solaimanizad, Elham Gahari, Mehdi Yaseri
Affiliation: Ophthalmic Research Center, Labbafinejad Medical Center, Shahid Beheshti University of Medical Sciences, Tehran
Purpose: To describe the prevalence and types of glaucoma in Yazd, central Iran.
Methods: In this population-based cross-sectional study, Iranian adults, aged 40 to 80 years, residing in Yazd, were participated. Eligible samples were selected using cluster random sampling. Each participant underwent ophthalmologic examinations, including refraction, determination of uncorrected and best corrected visual acuity (UCVA and BCVA), slit lamp biomicroscopy, Goldmann applanation tonometry, gonioscopy, dilated fundus examination, central corneal thickness (CCT) measurement, visual field testing, and stereoscopic fundus photography.
Results: Of 2,320 eligible individuals, 2,098 (response rate, 90.4%) participated in the study and 1,990 completed all evaluations for glaucoma diagnosis. Overall, 47 persons (2.4%) were categorized as ocular hypertension (OHT), 32 (1.6%) subjects primary angle closure suspect (PACS), and 16 (0.8%) individuals primary angle closure (PAC). The total number of subjects with glaucoma was 87 (4.4%, 95% confidence interval: 3.3%-5.4%) consisting of primary open angle glaucoma (POAG, 3.2% including high tension glaucoma (HTG, 1.7%), and normal tension glaucoma (NTG, 1.5%)), primary angle closure glaucoma (PACG, 0.4%), pseudoexfoliation glaucoma (PXG, 0.4%) and other secondary glaucomas (0.4%).
Conclusion: The prevalence of glaucoma in Yazd (4.4%) is comparable to other population-based studies in Asia, with POAG accounting for the majority of cases.
Peyman, Alireza

Corneal Collagen Crosslinking for Mild to Moderate Keratoconus (1 Year Results)

- **Authors:** Alireza Peyman, Hasan Razmju, Hasan Salam
- **Affiliation:** Isfahan University of Medical Sciences, Isfahan
- **Purpose:** To evaluate the effect of corneal collagen crosslinking (CXL) on mild and moderate keratoconus.
- **Methods:** 70 eyes of 51 patients with keratoconus and evidence of progression enrolled in this prospective study. CXL performed with removal of epithelium, riboflavin drops every 3 minutes for 30 minutes and ultraviolet irradiation for 30 minutes while continuing riboflavin. Subjects evaluated one year after procedure evaluating changes in acuity, refraction, and topographic parameters.
- **Results:** Pre-op corrected LMar acuity was 0.30±0.36 this value was 0.28 ± 0.31 after CXL (P=0.73). Spherical equivalent was -4.64 ± 2.5 and -4.02 ±2.92 diopters before and after surgery (P=0.006). Cylindrical refractory error was 3.96 ±2.29 and 3.60 ±2.39 before and after CXL (P=0.01). Analysis of vectors revealed 1.63±1.98 diopters of surgically induced astigmatism. Keratometric astigmatism, central 3mm corneal power, and 3mm irregularity were 3.39 ±2.27 , 45.03±3.01 , and 3.71 ±1.81 respectively before surgery these values measured as 3.46 ±2.10 , 45.08 ± 2.92 , and 3.69 ± 1.76 one year after CXL (P>0.05).
- **Conclusion:** There was 0.62 diopters of hyperopic shift after CXL. We were not able to disclose any other significant change in the measured parameters which also implies no worsening.

Pir, Poopak

The Effect of the Pocket Width on the Results of Implantation of Intra-Ocular Rings Using Femtosecond Laser

- **Authors:** Hassan Hashemi, Poopak Pir, Soheila Asgari
- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** To determine the effect of the pocket width in ring implantation on vision, refraction and corneal topographic indices.
- **Methods:** Sixty-two eyes were implanted with intra-ocular rings in the pockets made by femtosecond laser. The external width of the pocket in group A (32 eyes) was 7.9 mm and in group B (40 eyes) was 8.1 mm. The two groups were followed up for 6 months and the following indices were recorded in them: BCVA, UCVA, MRSE, max-K, and Q-value.
- **Results:** 6 month-changes of BCVA are 0.32±0.46 and 0.34±0.59 logMAR in Group A and B, respectively. These figures were 0.06±0.31 and 0.10±0.17 logMAR for the UCVA, MRSE, max-K, and Q-value decreased 1.15±1.81 and 1.43±1.96D, 2.21±2.47 and 2.01±1.45D, and 0.52±1.11 and 0.95±1.15 in Group A and B, respectively. None of the above parameters were significantly different between the two groups after six months of follow up.
- **Conclusion:** It seems that 0.2 mm changes in the diameter of the pocket made by femto-LASIK do not affect the results of implanting intra-ocular rings.
Pourmazar, Reza

The effect of three anesthetic drugs; propofol, etomidate and thiopental on intraocular pressure in patients intubated with laryngeal mask

- **Authors:** M Alipour, A Derakhshan, R Pourmazar
- **Affiliation:** Khatam Al Anbia Research Center
- **Purpose:** Generally, in ocular surgery with general anesthesia, it is necessary to pay attention to anesthetic drugs. Increase in intraocular pressure associated with intubation must be obtunded.
- **Methods:** After institutional approval and informed consent, 101 patients were studied in a randomized; double-blind. General anesthesia was induced with 0.5 mg/kg etomidate in Group I, 2 mg/kg propofol in Group II, and 4 mg/kg thiopental in Groups III. Intraocular pressure (IOP) was measured with a tonopen 2 minute after induction (immediately before intubation with laryngeal mask), 1 minute and finally 3 minute after laryngeal mask insertion.
- **Results:** In three groups, IOP decreased significantly after injection of anesthetic drugs and insertion of laryngeal mask (LMA) in comparison to basic values (P: 0.05), although IOP after intubation was more than before that. In case of propofol, the IOP change between 2 minutes after induction and the baseline was higher than others especially thiopental (P=0.031).
- **Conclusion:** Propofol prevented IOP increasing more than other groups, But decreasing of SBP and HR after injection and intubation were remarkable. Thiopental was the best drug to control of the cardiovascular parameters decreasing, especially HR and so preventing of IOP rising.

Rajavi, Zhale

Surgical Outcomes of Consecutive Exotropia

- **Authors:** ZH Rajavi, M Feizi, M Haftabadi, M Yaseri
- **Affiliation:** Ophthalmic Research Center, Shahid Beheshti University of Medical Sciences, Imam Hossein Medical Center
- **Purpose:** Consecutive exotropia is commonly seen after surgeries to correct congenital or accommodative esotropia. The prevalence is reported to be from 3 to 29% in different studies. The purpose was to determine the motor success rate of the patients who were operated at Imam Hossein Medical Center for consecutive exotropia during 2010-2012 periods according to medial rectus function.
- **Methods:** In this interventional case series study, 40 patients (27 female, 13 male) with consecutive exotropia>15 Pd were operated. Types of operations were lateral rectus weakening (with normal adduction), medial rectus strengthening (with >-1 adduction limitation) or both, unilaterally or bilaterally according to the level of exotropia. Surgical success was considered as eye deviation ≤8 Pd at primary position.
- **Results:** The mean preoperative distance and near deviation was 29±13 and 7±7 pd respectively. Lateral rectus weakening and medial rectus strengthening or both were performed in 21 (52.5%), 12 (30%) and 7 (17.5%) respectively. After surgery 31 patients (77.5%) were within ±8 Pd of orthophoria.
- **Conclusion:** If the method of surgery is chosen according to preoperative medial rectus function, high percentage of motor success can be achieved in consecutive exotropic patients.
**Rajavi, Zhale**

**Relationship between Foveal Thickness and Amblyopia**

- **Authors:** Zh Rajavi, H Mughaddasifar, N Haftabadi, M Yaseri
- **Affiliation:** Ophthalmic Research Center, Emam Hossein Hospital, Shahid Beheshti University of Medical Sciences
- **Purpose:** To determine if there is any relationship between foveal thickness (FT) and amblyopia
- **Methods:** In this case-control study 38 children 3 to 10 years old with unilateral amblyopia (VA≤20/30) as case group and their fellow eyes as internal control and 45 age and sex matched children with no amblyopia as external control group, were compared in case of their FT by oct imaging.
- **Results:** 83 children with mean age of 6.6±0.7 entered the study, of them 57.8% were female and 42.2% were male. FT was 224±27 in amblyopic eyes and 225±22 and 230 ±30 in internal and external control eyes (P=0.826, P=0.293).
- **Conclusion:** There was not a significant difference between FT in amblyopic and non-amblyopic eyes.

**Ramezani, Alireza**

**Three Intravitreal Bevacizumab versus Two Intravitreal Triamcinolone Injections in Recent Onset Central Retinal Vein Occlusion; A Randomized Clinical Trial**

- **Authors:** Alireza Ramezani, Hamed Esfandiari, Morteza Entezari, Siamak Moradian, Masoud Soheilian, Babak Dehsarvi, Mehdi Yaseri, Homayoon Nikkhah
- **Affiliation:** Ophthalmic Research Center, Shahid Beheshti University of Medical Sciences
- **Purpose:** To compare three intravitreal injections of bevacizumab (IVB) versus two intravitreal injections of triamcinolone (IVT) in the treatment of macular edema in acute central retinal vein occlusion (CRVO).
- **Methods:** In a randomized clinical trial, 110 eyes with recent onset (<12 weeks) CRVO were assigned to: IVB group (56 eyes, received 3 monthly injections of 1.25 mg of IVB) and IVT group (54 eyes, received 2 injections of 2 mg IVT two months apart).
- **Results:** Mean BCVA improved significantly up to 6 months in both groups. However, between-group differences reach to a significant level at months 4 (P=0.003) and 6 (P<0.001) in favor of the IVB group. In terms of CMT reduction, similarly, both groups showed a significant decrease at months 3 and 6, and the differences between the groups were statistically significant (P=0.002) at final visit. Mean IOP rise was significantly higher in the IVT group at all visits.
- **Conclusion:** Both 3 times monthly IVB injections and 2 times IVT injections could be effective for improving BCVA and CMT in recent onset CRVO. However, considering the better visual and anatomic outcomes after IVB injections and the potential complications of IVT injections, we would recommend prescheduled repeated IVB injections for such cases.
Ramezani, Alireza

Intravitreal Bevacizumab before Laser Therapy in Center-Involved Diabetic Macular Edema

- **Authors:** Alireza Ramezani, Rasol Malek Mohammadi
- **Affiliation:** Ophthalmic Research Center, Shahid Beheshti University of Medical Sciences
- **Purpose:** To evaluate the effect of intravitreal bevacizumab (IVB) before laser therapy in center-involved diabetic macular edema.
- **Methods:** In an intraindividual double-masked randomized clinical trial, 38 patients with bilateral diabetic macular edema (76 eyes) were included. Based on a randomization, one eye of each patient received 1.25 mg of IVB (pretreatment group) and the fellow eye a sham injection (only MPC group). Two weeks later, both eyes underwent MPC based on the ETDRS protocol. Ophthalmic examination and central macular thickness (CMT) measurement by OCT were performed at baseline and at 3 and 6 months after enrollment.
- **Results:** At baseline, best-corrected visual acuities were 0.66±0.32 and 0.64±0.29 logMAR, respectively in the pretreatment and only MPC groups which changed significantly to 0.4±0.25 and 0.4±0.23 logMAR at 6 months. However, the difference between two groups was not significant at 3 or 6 months. Similarly, the difference of CMT changes between the groups did not reach to a significant level either.
- **Conclusion:** Single injection of intravitreal bevacizumab (IVB) prior to laser macular photocoagulation (MPC) does not add any beneficial effect in the treatment of diabetic macular edema.

Rezaei kanavi, Mozhgan

Cryopreservation of Donated Whole Globes and Preparation of Pre-cut Corneas from Fresh Donated Whole Globes as Recent Activities of the Central Eye Bank of Iran

- **Authors:** Mozhgan Rezaei Kanavi, Mohammad Ali Javadi, Tahereh Chamani, Fatemeh Javadi
- **Affiliation:** Ophthalmic Research Center, Shahid Beheshti University of Medical Sciences, Tehran
- **Purpose:** To introduce results of cryopreservation of donated whole globes (DWG) for anterior lamellar keratoplasty and/or tectonic graft and of preparation of precut corneas for Descemet stripping automated endothelial keratoplasty (DSAEK) during a 3-year period at the Central Eye Bank of Iran.
- **Methods:** Between April 2009 and March 2012, the frequency of transplantation of cryopreserved surplus DWG for anterior lamellar keratoplasty and/or tectonic graft, and those of precut corneas prepared for DSAEK were specified.
- **Results:** 566 (95.4%) out of 593 surplus cryopreserved DWG were distributed for transplantation during 3-year period. Only one (0.2%) of the transplanted cryopreserved corneas revealed a nonspecific keratitis, which needed a re-graft. Out of 1518 DWG appropriate for DSAEK, 1478 (97.4%) precut corneas were successfully prepared. The method of preparation failed in 40 (2.6%) cases.
- **Conclusion:** Cryopreservation of surplus DWG is a safe and easy method for long-term preservation of corneas for anterior lamellar keratoplasty techniques, and also for tectonic grafts. Precut corneas prepared from DWG for DSAEK are associated with a lower risk of tissue manipulation and endothelial cell loss.
Roohipour, Ramak

Nerve Fiber Layer Thickness in Red Laser versus Green Laser Treated Eyes in Proliferative Diabetic Retinopathy

- **Authors:** Ramak Roohipoor, Nazanin Ebrahimi Adib, Fariba Ghasemi, Sasan Moghimi
- **Purpose:** To evaluate changes of Retinal nerve fiber layer (RNFL) thickness six weeks after panretinal photocoagulation (PRP) in red versus green laser treated eyes.
- **Methods:** Randomized Clinical Trial Methods: A prospective, fellow-eye controlled clinical trial was conducted on 124 eyes of 62 early to high risk proliferative diabetic retinopathy type II diabetics. All cases received standard red or green laser treatment. GDx was performed to evaluate RNFL thickness at baseline and at weeks 6, but only 22 patients (44 eyes) could perform reliable tests. The relationship between RNFL thickness and age, HbA1c, blood pressure and number of laser spots were analyzed. In addition RNFL thickness changes after PRP was evaluated between red and green laser treated eyes.
- **Results:** Mean ages of our patients were 53.18 (range 40-68) years. Fifty seven percent of our patients were male. Six weeks after PRP, the RNFL thickness increased by an average of 3.35±9.18μm (P value=0.02) and 2.08±4.75μm (P value=0.04) in the red and green laser groups, respectively. There was not significant correlation between the number of laser burns and changes in RNFL thickness. No significant relationship was found between changes in RNFL thickness and age, HbA1c, or blood pressure. The difference in the change of the RNFL thickness between the red and green laser group was not statistically significant (P value=0.8).
- **Conclusion:** Though RNFL thickness was increased significantly 6 weeks after PRP with red and green laser in comparison to its baseline, there was not significant difference in RNFL thickness between red and green laser groups.

Saber Moghaddam Ranjbar, Aliakbar

The results of Brown syndrome Surgery with Superior Oblique Split Tendon Lengthening

- **Authors:** Aliakbar Saber Moghaddam, Abbas Kargozar, Sattar Heidari
- **Affiliation:** Eye Research Center of Mashhad University of Medical Sciences
- **Purpose:** To evaluate the outcomes of superior oblique split tendon lengthening in treatment of patients with Brown’s syndrome.
- **Methods:** In a prospective pilot study, fourteen patients (15 eyes) were included according to inclusion and diagnostic criteria. Horizontal and vertical eye deviations and limitation in eye movements in elevation and adduction were evaluated and compared before and 6 months after surgery.
- **Results:** Abnormal head posture was eliminated in all cases. The amount of vertical deviation was decreased significantly in primary position and in elevation and adduction (p<0.001 for both). Limitation in elevation in adduction was decreased significantly. One eye was under corrected and underwent a secondary surgery.
- **Conclusion:** Surgical technique of superior oblique split tendon lengthening has a good effect in elimination of abnormal head posture and ocular limitation in patients with Brown’s syndrome.
Salouti, Ramin

Changes in Corneal Endothelial Cell Profile Measurements after Deep Anterior Lamellar Keratoplasty (DALK) for Keratoconus

- **Authors:** Ramin Salouti, Masoumeh Masoumpour, Mohammad H Nowroozzadeh, Mohammad Zamani, Maryam Ghoreyshi, Gerrit R. J. Melles
- **Affiliation:** Poostchi Ophthalmology Research Center, Shiraz University of Medical Sciences, Shiraz, Netherlands Institute for Innovative Ocular Surgery, Rotterdam, Netherlands
- **Purpose:** Evaluation of alterations in corneal shape affect endothelial cell profile measurements after DALK. Secondary, describe the pattern of changes in corneal endothelial cell profile measurements during the first three years after DALK.
- **Methods:** In this prospective interventional case series, we enrolled patients who had significant keratoconus and were scheduled for DALK (Melles technique).
- **Results:** 201 eyes and 45 eyes (of the original 201) were enrolled. At 3 months post-DALK, the mean endothelial cell density (ECD) had significantly increased and the mean cell area (MCA) had decreased compared to preoperative measurements (2721 vs. 2823 cells/mm², P=0.015; and 378 vs. 362 μm², P=0.005, respectively). Regression analysis revealed a weak but significant nonlinear association between changes in mean keratometry and ECD changes at 3 months (R²=0.039, P=0.02). Standard deviation of mean cell area (SD) had significantly decreased at 12 months after DALK compared to measurements taken at 3 months after surgery (P=0.023) and remained stable thereafter.
- **Conclusion:** Apparent measurements of ECD may not show a decrease, but instead even a slight increase in some cases after uncomplicated DALK (Melles technique). This finding along with a later decrease in SD suggests that notable postoperative changes in corneal biomechanical forces may affect endothelial cell profile measurements.

Sedaghat, Ahad

Brachytherapy for Uveal Melanoma in Iranian Patients: A Decade of Experiences

- **Authors:** Masood Naseripour, Ahad Sedaghat, Khalil Ghasemi Falavarjani, Marzieh Nojoomi, Ramin Jaberi, Rama Pourmatin
- **Affiliation:** Eye Research Center, Rassoul Akram Hospital, Tehran University of Medical Sciences
- **Purpose:** To report the results of Ru-106 plaque radiotherapy for medium and large size uveal melanoma.
- **Methods:** In this prospective interventional case series 103 patients with a diagnosis of uveal melanoma were treated with Ru-106 brachytherapy. The estimated dose to the tumour apex was 100 Gy and maximum permitted sclera dose was considered 1450 Gy.
- **Results:** One hundred and three patients including 62 men and 41 women with a mean age of 54.94±14.22 years were treated. Patients were followed for 6 to 92 months (mean33.73±23.6). The mean apex dose was 86.8±17.4 (40-128.6) Gy. Preoperative tumour thickness of 5.4±2 mm decreased to 3.2±1.7 mm at last visit (P=0.00). Preoperative BCVA of 0.7±0.6Log MAR decreased to 1.1±0.9 at last follow up (P=0.00). Adjuvant therapy with TTT was applied for 33 patients. Final globe survival was 86.4%. Two patients developed metastasis. Causes of enucleation were recurrence in 6 cases and NVG in 1 case. There was statistical correlation between enucleation and tumour thickness (P=0.05) and also apex dose radiation rate (P=0.03).
- **Conclusion:** In medium and large size uveal melanoma Ru-106 brachytherapy could result in favorable outcome. There was an association between globe survival and thickness of tumor and apex dose radiation.
β-Radiation Brachytherapy for Large Choroidal Melanoma: Do We Need a High Dose to the Apex?

- **Authors:** Masood Naseripour, Khalil Ghasemi Falavarjani, Ahad Sedaghat, Alireza irani, Zohreh Azma, Shima Sarebanha
- **Affiliation:** Eye Research Center, Rasoul Akram Hospital, Tehran University of Medical Sciences
- **Purpose:** To report the results of Ru-106 plaque radiotherapy for large (thickness more than 7mm) choroidal melanoma.
- **Methods:** In this prospective interventional case series 23 patients with a diagnosis of large choroidal melanoma with a tumor thickness of more than 7mm were treated with Ru-106 brachytherapy. The estimated dose to the tumor apex was 100 Gy and maximum permitted sclera dose was considered 1450 Gy.
- **Results:** Twenty three patients including 11 men and 12 women with a mean age of 55.7±13.75 years were treated. Patients were followed for 6 to 92 months (mean33.73±23.6). The mean apex dose was 70.72±15.5 (40-100) Gy. Preoperative tumor thickness of 8±0.5 mm decreased to 4.1±2.1 mm at last visit (P=0.001). Preoperative BCVA of 0.85±0.66Log MAR decreased to 1.3±0.88 at last follow up (P=0.01). Adjuvant therapy with TTT was applied for 3 patients. Final globe survival was 82.6%.
- **Conclusion:** In large size choroidal melanomas, where enucleation is not desirable Ru-106 brachytherapy could result in favorable outcome.

Photodynamic Therapy (PDT) for Management of Circumscribed Choroidal Hemangioma

- **Authors:** Masood Naseripour, Ahad Sedaghat, Azin Shafiesabet, Reza soudi, Romina Rashedi
- **Affiliation:** Eye Research Center, Rassoul Akram Hospital, Tehran University of Medical Sciences
- **Purpose:** To evaluate the efficacy and safety of photodynamic therapy (PDT) in treatment of patients with circumscribed choroidal haemangioma.
- **Methods:** In this study twelve patients with circumscribed choroidal hemangioma were treated with PDT. vision impairment was the chief compliant of these patients. Visual acuity testing, fundus fluorescein angiography, ultrasonography, and optical coherence tomography (OCT) was performed before PDT and in follow-up visits. PDT was performed with a standard protocol using intravenous injection of verteporfin. Laser was used at 50 J/cm2 for 83- 166 seconds on lesions. Patients were treated with 1 or 2 session of PDT.
- **Results:** 12 patients (7 male and 5 female) underwent PDT. Mean age at Diagnosis was 38.5 years. The mean follow-up time was 21months (with the range of 6 to 42). The mean Log MAR visual acuity improved from 0.92±0.65 to 0.42 ±0.44 (p=0.002). Mean initial thickness was decreased from 3.1 to 0.3 mm (p=0.000). Complete subretinal fluid resorption was seen in less than 6 months in all patients except one who needed to treat with RU-106 Plaque Radiotherapy. No important post-op complication was seen except chorioretinal atrophy in some cases.
- **Conclusion:** PDT is an effective modality for management of circumscribed choroidal hemangioma without any remarkable complication.
Sedaghat, Ahad

Choroidal Metastasis: Clinical Aspects at a Referral Ocular Oncology Center

- **Authors:** Ahad Sedaghat, Masood Naseripour, Asgari Rezanejad Amirdehi, Reza Soudi
- **Affiliation:** Eye Research Center, Rassoul Akram Hospital, Tehran University of Medical Sciences, Tehran
- **Purpose:** To report clinical aspects of choroidal metastasis at a referral ocular oncology center.
- **Methods:** We reviewed the records of all patients with choroidal metastasis referred to an ocular oncology referral center over a 10-year period retrospectively. The study was performed to identify and analyze clinical presentations and features of patients with choroidal metastasis.
- **Results:** A total of 113 choroidal metastases were diagnosed in 60 eyes of 48 consecutive patients. There were 17 male and 31 female patients. The median and mean numbers of choroidal metastasis were one and three tumors in each eye respectively. The primary cancer location was found to be the breast in 18 patients, lung in 11, lymphoproliferative system in 3, thyroid in 3, gastrointestinal tract in 3, prostate in 2, brain in 1 and unknown primary in 7 patients. The most common primary cancer was the breast in females and lung in males. The main ocular symptoms of choroidal metastasis at diagnosis were blurred vision in 42 patients.
- **Conclusion:** The clinical features and primary sites of choroidal metastasis in Iranian patients were similar to those of published reports in this regard. One out of every seven patient had no known primary cancer at the time of choroidal metastasis presentation.

Sedaghat, Mohammad Reza

Evaluation of Correlation between Belin-Ambrossio Software in Pentacam 2 and Traditional Indices of Topography, Orbscan and Pentacam for Early Diagnosis of Subclinical Keratoconous

- **Authors:** Mohammad Reza Sedaghat, Mirmaghi Moosavi, Alireza Vahedi
- **Affiliation:** Eye Research Center, Khatam Al Anbia Eye Hospital, Medicine Faculty, Mashhad University of Medical Sciences
- **Purpose:** Several paraclinic examination: topography, orbscan, pentacam & abberometry are used to detect KCN. In this study diagnostic correlation between Belin-Ambrossio software and topography and orbscan indices were examined.
- **Methods:** In this study 1000 eyes in 4 groups examined, group (1) all of indices are normal (65.8%), group (2) all of indices are abnormal (12.6%), group (3) Belin-Ambrossio indices and abnormal but topography & orbscan indices are normal (18.5%) & group (4) Belin-Ambrossio indices are normal but topography or orbscan are abnormal (3.1%). In each group correlation between Belin-Ambrossio indices together & with topography & orbscan indices examined.
- **Results:** In 78.5% of eyes with normal topography and orbscan, Belin-Ambrossio indices are normal and in 80.2% of eyes with abnormal traditional indices, Belin-Ambrossio indices are abnormal. In all 4 groups only Dt has significant correlation with same index in orbscan. Different in pentacam and orbscan.
- **Conclusion:** Belin-Ambrossio indices in correlation with traditional indices of topography & orbscan for KCN diagnosis have an acceptable efficacy (80%) and specificity (78%). only Dt has good correlation with orbscan index.
Seyedian, Mohammad Amin

Topography-Guided Photorefractive Keratectomy (PRK) With Mitomycin-C for the Treatment of Postkeratoplasty Irregular Astigmatism

- **Authors:** Mohammad Amin Seyedian, Seyed Mohammad Miraftab, Hassan Hashemi
- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** To assess the results and complications of topography guided PRK with application of mitomycin-c for the treatment of refractive errors and irregular astigmatism in postkeratoplasty patients.
- **Methods:** In this pilot study, 8 eyes of 8 patients with irregular astigmatism and refractive errors after keratoplasty, had topography guided excimer laser surface ablation and application of mitomycin-c with Concerto WaveLight excimer laser using Allegro Oculyzer and T-CAT software.
- **Results:** The mean preoperative spherical equivalent (SE) was -4.25±5.94 diopter (D) and the mean UCVA and BSCVA were 0.7 and 0.3 in LogMAR scale respectively. All patients completed a follow-up period of at least 12 months. The mean postoperative SE was -1.62 ± 3.85 D (P<0.01). Only 2 eyes were within ±1 D of intended correction. UCVA was improved in all eyes (P<0.0001). BSCVA has improved for at least 2 lines in 4 eyes and remained unchanged in the other 4 eyes. No eye has lost any line of BSCVA.
- **Conclusion:** Topography guided surface ablation with mitomycin-c is a safe and effective method for the treatment of refractive errors and irregular astigmatism after keratoplasty. The refractive predictability is less than the conventional treatment and this needs to be considered in the preoperative patient consultation.

Shafiee, Masoud

A Novel Description of Dominant Eye Considering Contrast Sensitivity

- **Authors:** Ramin Daneshvar, Masoud Shafiee, Mohammad Khalifeh
- **Affiliation:** Khatam Al Anbia Hospital, Mashhad University of Medical Sciences
- **Purpose:** To measure the contrast sensitivity using CVS-1000 in dominant and non-dominant eyes in the normal young population.
- **Methods:** 30 cases were entered in an observational cross-sectional study. Patients aged 16-33 years referred to the Khatam Eye Hospital were included. Exclusion criteria were history of any intraocular or corneal disease or anomaly or surgery. All measurements were done by the same operator using CVS-1000.
- **Results:** 60 eyes of 30 cases with mean age of 24.06±5.19 were evaluated. The averages contrast sensitivity in spatial frequencies of 3,6,12 and 18 were 1.88±0.76 log unit, 2.00±0.77, 1.74±0.129 and 1.17±0.101 in non-dominant eye and 1.91±0.72, 2.12±0.091, 1.80 ±0.145 and 1.22 ±0.079 in dominant eye respectively. (All P values < 0.05)
- **Conclusion:** The contrast sensitivity measurement may open a new aspect in physiology of eye dominancy.
Prevalence of Keratoconus in a Population-Based Study

- **Authors:** Hassan Hashemi, Akbar Fotouhi, Mohammad Hassan Emamian, Mohammad Shariati, Soheila Asgari, Mehdi Khabazkhoob, Asghar Beiranvand, Saeid Shahhosseini
- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** To determine the prevalence of keratoconus in age group of 40-64 years in Shahroud, Iran.
- **Methods:** This report was made on the basis of the first phase of Shahroud Eye Cohort Study. In this study, 6311 people were selected using multi-stage cluster sampling, of who, 5190 people (82.2% = response rate) participated in the study. Data obtained from the participants whose topographic map (using Pentacam) was error-free were analyzed. Those participants were divided into three groups: keratoconus (KC), Forme Fruste Keratoconus (FFKC), and Non Keratoconus (Non-KC).
- **Results:** Data obtained from 4592 participants with mean age of 50.83 (0.12) were analyzed. Of these participants, 35 people were diagnosed to have keratoconus at least in one eye [Prevalence (CI95%):0.76% (0.51-1.01)] and 47 people were detected to be placed in FFKC group [Prevalence (CI95%):1.02 (0.73-1.32)]. The prevalence of keratoconus in men and women was (0.35-1.09) 0.72% and (0.43-1.15) 0.79%, respectively. Keratoconus carries a chance of 8.1 times of accompanying visual impairment (P<0.001).
- **Conclusion:** The prevalence of keratoconus in Shahroud was much higher than that in western countries. Given the high risk of visual impairment in these people, it is necessary to study the prevalence and causes of keratoconus in this region.

Polymorphism of Glutathione S-Transferase M1 Deletion Genotype as Risk Factor of Iranian Patients to Angle Closure Glaucoma

- **Authors:** Gholamreza Shahsavari, Arezou Miraftabi, Fatemeh Kazemi Safa
- **Affiliation:** Lorestan University of Medical Sciences, School of Medicine, Department of Clinical Biochemistry
- **Purpose:** Glutathione S-transferases (GSTs) are members of multigenic family which have essential role in cells as an antioxidant. In the present study we investigated the polymorphism of GSTT1 and GSTM1 deletion genotypes (T0M1, T1M0, and T0M0) in Iranian PCAG (primary closed angle glaucoma) patients compared to healthy human subjects.
- **Methods:** We conducted a study of 41 PCAG patients (24 women, 17 men) and 100 healthy subjects (57 women, 43 men) to determine the prevalence of GSTT1 and GSTM1 deletion genotypes and the risk of PCAG, which were determined by multiplex polymerase chain reaction.
- **Results:** GSTM1 and GSTT1 null deletions genotypes were determined in 22(53.7%) and 7(17.1%) patients with PCAG and 34(34%) and 15(15%) in healthy subjects. Comparison of patients and healthy subjects regarding GSTM1 and GSTT1 genotypes revealed increase of GSTM1 null deletions genotypes in patients with PCAG (p =0.03).
- **Conclusion:** The increased frequencies of GSTM1 null in patients with PCAG could be associated with a risk factor for incidence of PCAG in the Iranian population.
**Shahsavari, Gholamreza**

Comparative Study of the Antioxidant Enzymes Activities in Primary Glaucoma Patients and Healthy Subjects

- **Authors:** Gholamreza Shahsavari, Arezou Miraftabi, Asghar Mohammadpour Konani
- **Affiliation:** Lorestan University of Medical Sciences, School of Medicine, Department of Clinical Biochemistry.
- **Purpose:** Primary open-angle glaucoma (POAG) and Primary close-angle glaucoma (PCAG) are the leading causes of the blindness in the industrial countries. The serum oxidant/antioxidant profile is reportedly altered in ocular pathologies. The purpose was comparing of the antioxidant enzymes activities in primary glaucoma patients and healthy Subjects.
- **Methods:** We conducted a study of 56 PCAG patients (30 women, 26 men), 84 POAG patients (40 women, 44 men) and 80 healthy subjects (43 women, 37 men) to determine the activity of antioxidant enzymes: catalase (CAT), superoxide dismutase (SOD), glutathione peroxidase (GPX) and glutathione reductase (GR) and glutathione (GLT).
- **Results:** A significant decrease of antioxidant enzymes activities: CAT, SOD, and GPX and a non-statistical decrease of GR activity in POAG and PCAG patients according to healthy subjects were also indicated. The red blood cell GLT level in POAG was significantly increased compared with healthy subjects although this factor not significantly altered in PCGA.
- **Conclusion:** Our results indicate an excessive diminish of antioxidant enzymes activities in POAG and PCAG patients compare to healthy subjects, which has a pathogenic role in primary glaucoma with rising oxidative damage.

**Shaygan, Nasim**

Objective and Subjective Results of Synergeye and RGP Contact Lens in Keratoconic Patients

- **Authors:** Nasim Shaygan, Sedigheh Asgari, Hassan Hashemi, Soheila Asgari, Farhad Rezvan
- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** To compare best corrected visual acuity (BCVA), vision related quality of life (VRQoL), comfortness, foreign body sensation in eye, tolerance and handling of Synergy eyes Clearkon hybrid and RGP lenses in patients with keratoconus.
- **Methods:** This comparative case series study was conducted on 38 patients with keratoconus in 2010-2011. BCVA of each patient was assessed on the same day lenses were prescribed. NEI-VFQ 25 questionnaire was studied along with other subjective criteria two months after prescribing lenses.
- **Results:** BCVA was not significantly different between the lenses. Of subjective criteria, general vision scores (P=0.008), ocular pain (P<0.001), distance activity (P=0.008), mental health (P<0.001), role difficulty (P<0.001, dependency (P=0.016), total score (P<0.001) of NEI-VFQ 25 questionnaire and comfortness (P<0.001) were significantly higher in synergy eyes group than in RGP group. Foreign body sensation in eye was significantly higher in RGP group than in synergy eyes group (P=0.013).
- **Conclusion:** There is no difference between the two lenses in terms of BCVA, and both can correct vision to the same extent, but keratoconic patients are more satisfied with synergy eyes lenses and prefer them to RGP lenses.
Shirzadeh, Ebrahim

Refractive Power of Corneal Curvature and Corneal Astigmatism in Age-related Cataract Patients with and without Pseudoexfoliation Syndrome

- **Authors**: Ebrahim Shirzadeh, Arash Akaberi
- **Affiliation**: Sabzevar University of Medical Sciences, Sabzevar, Iran
- **Purpose**: To investigate the corneal power and the corneal astigmatism findings in age-related cataract patients with and without Pseudoexfoliation Syndrome.
- **Methods**: A clinical-based cross-sectional study was carried out on 118 patients, with phakic eyes who were volunteered for cataract surgery and they subcategorized into eyes with and without PXS. CC was measured using HAAG-STREIT instrument (jawal model) by measuring the corneal curvature radius at two meridians, each 90° apart. Also CA calculated as difference between both principals.
- **Results**: Data were available on 118 patients with and without PXS. PXS was found in 36.4% (43) of the eyes. CA was found in 72.9% (86) of the eyes but it was observed in 24.5% (30) of eyes with PXS. Mean CA was -0.73D ± 1.41 SD compare to +0.02 ± 1.19 SD in eyes with and without PXS respectively. Differences for Mean CA in patients with and without PXS was statistically significant (P=0.002).
- **Conclusion**: It seems that CA in age related-cataract eyes along with PXS are more common (24.5%) than eyes without PXS (11%) and differences for mean CA were statistically significant (P=0.002).

Shojaei Baghini, Ahmad

Correction of Presbyopia in Hyperopia with Multizone Ablation Technique Using the Nidek EC-5000 CX III

- **Authors**: Ahmad Shojaei Bagheini, Abbas Abolhasani, Farsad Noorizadeh
- **Affiliation**: Basir Eye Clinic
- **Purpose**: To analyze the results of hyperopic patients treated with a peripheral presbyLASIK algorithm for the correction of presbyopia.
- **Methods**: The study included 110 eyes of 55 hyperopic patients treated with a peripheral presbyLASIK technique using a Nidek EC-5000 CX III excimer laser. Mean patient age was 51 years (range: 44 to 68 years), mean preoperative spherical equivalent refraction was +1.17±0.72 diopters (D) (range: +0.50 to +3 D), and mean spectacle near addition was +1.66±0.47 D (range: +1.00 to +2.75 D). The Peripheral Multifocal LASIK (PML) ablation pattern creates a multifocal corneal profile, performing the near correction first in a 6.5-mm optical zone (transitional zone: 9.5 mm) and then distance correction in a 3.0-5.0mm multizone (optical zone). Main outcome measures were uncorrected visual acuity (UCVA) and best spectacle-corrected visual acuity (BSCVA) for near and distance, spherical equivalent refraction.
- **Results**: Six months postoperatively, mean binocular UCVA was -0.06±0.85 logMAR (0.86±0.14 decimal) for distance. Mean postoperative spherical equivalent refraction was -0.47 D (range: -1.02 to +0.77 D). Twenty one (19.1%) eyes lost 1 line of UCVA for distance vision, and 6 (5.45%) eyes gained 1 line of distance BSCVA.
- **Conclusion**: The peripheral presbyLASIK technique used in this study is a safe and efficient treatment that may improve functional near vision in presbyopic patients with mild and moderate hyperopia (from +0.50 to +3.00 D).
Soheilian, Masoud

25-Gauges Vitrectomy for Complicated Chronic Endogenous/Autoimmune Uveitis; Predictors of Outcomes

- **Authors**: Masoud Soheilian, Alireza Ramezani, Roham Soheilian
- **Affiliation**: Ophthalmology Department, Ophthalmic Research Center, Labbafinejad Medical Center, Shahid Beheshti University of Medical Sciences, Negah Eye Hospital, Imam Hossein Medical Center, Tehran
- **Purpose**: To describe the course of inflammation and identify predictors of successful outcome in chronic endogenous/autoimmune uveitic patients following 25-gauge vitrectomy.
- **Methods**: In this retrospective study, charts of 74 patients (74 eyes) undergoing vitrectomy for complicated uveitis that had a minimum of 12 months follow up were reviewed. Successful outcome measures were: Improvement (≥0.3 logMAR) of visual acuity (VA), decreased inflammatory activity (≥1+) and reduction of required drugs (more than one).
- **Results**: A total of 44 (59%) of the 74 patients showed VA improvement, 38 (51%) showed decreased inflammatory activity and 30 (40%) required fewer drugs following vitrectomy. Independent predictors were: For VA improvements was accompanying cataract extraction, for postoperative inflammatory decrease was the absence of preoperative CME and greater preoperative activity of inflammation, for the reduction in the number of required drugs was preoperative presence of ERM.
- **Conclusion**: 25-Gauge vitrectomy may be beneficial in patients with complicated chronic endogenous uveitis in terms of VA and control of inflammation. Accompanying cataract extraction, when necessitated, during vitrectomy and the absence of preoperative CME were indicators of better outcomes. Establishing predictors may assist clinicians in better patient selection.

Soheilian, Masoud

Results of 25-Gauge Diagnostic Vitrectomy in Patients with Chronic Refractory Uveitis

- **Authors**: Mozhgan Rezaei Kanavi, Masoud Soheilian, Bagher Hosseini
- **Affiliation**: Ophthalmology Department, Ophthalmic Research Center, Labbafinejad Medical Center, Shahid Beheshti University of Medical Sciences, Negah Eye Hospital
- **Purpose**: To evaluate the cytological findings of vitreous fluid harvested via 25-gauge vitrectomy in eyes with chronic refractory uveitis.
- **Methods**: In this study, clinical and cytopathological records of 30 vitreous biopsy specimens obtained via sutureless 25-gauge diagnostic vitrectomy in 24 patients with chronic refractory uveitis were reviewed. 3 out of 24 patients were known cases of CNS lymphoma, Mycosis Fungoides and Hodgkin lymphoma. The cytopathological findings were categorized into 5 groups.
- **Results**: 30 specimens from 24 patients were enrolled. The cytopathological diagnoses were intraocular B-cell lymphoma in 12 eyes from 7 patients, mixed non-specific inflammation in 9 eyes from 9 patients, intraocular T-cell lymphoma in 2 eyes from one patient, intraocular Hodgkin’s lymphoma in 1 eye from one patient, fibrous proliferation in 2 eyes from 2 patients, endophthalmitis in 1 eye from one patient, and hypocellular specimen with inconclusive diagnosis in 3 eyes from 3 patients. The original clinical diagnosis was approved in 19 out of 30 specimens (63.3%). The cytological results excluded intraocular malignancies in 41.0% of the eyes.
- **Conclusion**: Vitreous biopsy via a sutureless 25-gauge diagnostic vitrectomy is a safe, helpful and practical method for determination of primary causes of chronic uveitis of unknown etiology and other conditions masquerading as uveitis.
Tabatabaei, Ali

Acute Retinal Necrosis: Report of a Retrospective Case Series

- **Authors:** A Tabatabaei, S Hosseini, F Mirzaee, F Bazvand, D Vakili, MR Mansouri, A Taheri, N Piri, M Ebrahimi, R Roohipour, M Khatami, R Karkhaneh
- **Affiliation:** Eye Research Center, Farabi Eye Hospital, Tehran University of Medical Sciences
- **Purpose:** To study clinical course, management and outcome of patients with Acute Retinal Necrosis in Farabi Eye Hospital
- **Methods:** The study was a retrospective investigation of the medical records of 57 patients who diagnosed with acute retinal necrosis admitted in Farabi eye hospital between 1991 and 2011.
- **Results:** From 57 patients, 25 were females and 32 were males with age from 19 to 72 years old. Three patients had binocular and the rest had monocular involvement; 91.2% of the involved eyes had vision less than 20/40 and 54.4% were below 20/400. Retinal break and detachment was recorded in 27 patients (47.4%). All patients were treated with systemic antiviral therapy. Vitrectomy was performed in 32 patients, of whom five patients underwent primary vitrectomy before retinal detachment and they did not develop detachment in the follow up sessions. Eighteen (31.6%) of the patients received intravitreal injection of ganciclovir. Barrier laser was performed in 38 (66.7%) patients.
- **Conclusion:** Even early in the course of the disease, vitrectomy did not have significant effect on the visual prognosis of the involved eye; but five cases that underwent primary vitrectomy did not develop retinal detachment in the course of the disease. It seems that it is better to perform vitrectomy in early phase of the disease, although more randomized trials are needed.

Tavakoli Dastjerdi, Mehdi

Monocanalicular Stenting with Masterka TM Tube in Management of Congenital Nasolacrimal Duct Obstruction (CNLDO) Following a Failed Probing

- **Authors:** Mehdi Tavakoli, Hossein Salour, Abbas Bagheri, Mahmoud Hassanzadeh, Mohadaseh Feizi, Maryam Aletaha
- **Affiliation:** Ophthalmic Research Center, Shahid Beheshti University of Medical Sciences, Labbafinejad Medical Center
- **Purpose:** To report the results of monocanalicular intubation with MasterkaTM silicon tube as a feasible and less invasive instrument in the management of CNLDO with previous failed probing.
- **Methods:** In this interventional case-series, the children with known CLNDO and persistent tearing and/or discharge following previous probing were enrolled in the study. The main outcomes were improvement of tearing and discharge which were evaluated six months following operation.
- **Results:** Ten children (7 males and 3 females) with the mean age of 32+12 months were included in the study. The mean duration between the last probing and intubation was 7 months. The tube was removed within 3.2+1.8 months. Treatment success was observed in 8 patients (80%, 95% CI= 70% to 86%) after 6 months.
- **Conclusion:** MasterkaTM intubation is a safe, easy and effective method in management of CNLDO which do not respond to probing.
Tavakoli Dastjerdi, Mehdi

Canicular Laceration Repair with a New Monocanalicular Silicon Tube

- **Authors**: Mehdi Tavakoli, Mahmoud Hassanzadeh, Setareh Dizani, Bahareh Behdad, Hossein Salour

- **Affiliation**: Ophthalmic Research Center, Shahid Beheshti University of Medical Sciences, Labbafinejad Medical Center

- **Purpose**: To investigate the effectiveness and complications of traumatic canicular laceration repair with MasterkaTM tube.

- **Methods**: This is a retrospective case-series study on the records of the patients with canicular lacerations which repaired with the monocanalicular MasterkaTM tube. The outcomes and complications of the surgery were reviewed and analyzed.

- **Results**: Nineteen patients (15 males and 4 females) with canicular lacerations had been repaired with MasterkaTM tube. The mean age was 23±8 years. Lower canalicule was involved in 12 cases (63.1%). The tube was removed within 64±10 days. Extrusion of the stent occurred in one patient (a 9-year-old boy) during the follow up period. At 6-months follow up canicular stenosis was detected in 2 patients. No patient was suffering from epiphora.

- **Conclusion**: Canicular intubation with MasterkaTM seems to be an effective and safe method for traumatic canicular laceration repair.

Vazirnia, Maryam

Effects of Local Anesthesia with Bupivacaine plus Epinephrine on Blepharoptosis and Levator Palpebral Muscle Function

- **Authors**: Gholam Hosseyn Aghai, Maryam Vazirnia, Rama Poormatin, Khalil Ghasemi Falavarjani

- **Affiliation**: Eye Research Center and Department of Ophthalmology, Rassoul Akram Hospital, Tehran University of Medical Sciences

- **Purpose**: To evaluate the effect of local anesthesia with bupivacaine plus epinephrine on the extent of blepharoptosis and levator palpebral muscle function.

- **Methods**: In this prospective interventional case series, patients with blepharoptosis who were candidates for aponeurotic surgery were included. After initial preparation in the operating room, a total of 1cc of a mixture of bupivacaine 0.5% plus epinephrine 1:100000 were injected into the upper eyelid. The margin reflex distance 1 (MRD1) and the extent of levator muscle function were measured before and 2, 5, 10 and 15 minutes after injection.

- **Results**: A total of 36 eyes including 21 males (58.3%) and 15 females (41.7%) with an average age of 41.81±23.09 (17-83 years) were studied. There were 21 eyes with myogenic and 15 eyes with aponeurotic blepharoptosis. The MRD1 mean value of 1.18±23.09 (17-83 years) were studied. There were 21 eyes with myogenic and 15 eyes with aponeurotic blepharoptosis. The MRD1 mean value of 1.18±1.06mm before injection decreased to -0.26±0.85 ,0.52±0.98 , 0.98±1.05 , 1.02±1.06 mm in 2, 5, 10 and 15 minutes after injections, respectively. The MRD1 values decreased during the first 2 minutes after injection in 91.7% of eyes, but returned to initial value after 15 minutes in 83.3%. The changes in the levator muscle function measurements were statistically significant in 2 and 5 minutes after injections.

- **Conclusion**: The local anesthesia of the eyelid with 1cc bupivacaine plus epinephrine causes a temporary increase of blepharoptosis within the first few minutes with minimal effect on levator muscle function measurements.
Vejdani, Amirhossein

Treatment of Post-LASIK Keratectasia with Corneal Collagen Crosslinking

- **Authors:** Hamid Khakshoor, Ladan Saffarian, Amir Hossein Vejdani
- **Affiliation:** Khatam Al Anbia Hospital, MUMS
- **Purpose:** To evaluate the effect of corneal crosslinking with riboflavin UV-A for the treatment of post-laser in situ keratomileusis (LASIK) keratectasia.
- **Methods:** A total of 23 eyes of 12 patients were selected for corneal crosslinking. Standard examinations, including uncorrected visual acuity, best corrected visual acuity, slit lamp, and topographic examinations, were performed preoperatively. Patients were followed up at 1, 3, 6, 12, and 18 months after the procedure. OUTCOME MEASURE: Visual acuity outcomes and keratometry in the cases with ectasia.
- **Results:** The mean uncorrected visual acuity values before and at 6, 12, and 18 months after the procedure were 0.54±0.37, 0.41±0.33, 0.42±0.33, and 0.5±0.36 logMAR, respectively (P = 0.011). The mean simulated keratometry values before and at 6, 12, and 18 months after the procedure were 43.49±3.72, 42.68±3.75, 42.62±3.8, and 42.78±3.84, respectively.
- **Conclusion:** Crosslinking appears to be a safe procedure for stabilizing the progression of ectasia and improving uncorrected visual acuity and keratometry readings.

Yazdani, Shahin

High Prevalence of Angle Closure Disease in Siblings of Patients with Primary Angle Closure Glaucoma

- **Authors:** Shahin Yazdani, Shadi Akbarian, Mohammad Pakravan, Mohsen Afrouzifar
- **Affiliation:** Ophthalmic Research Center, SBUMS
- **Purpose:** The hereditary basis of angle closure disease has been less explored than open angle glaucoma. The purpose of the study was to determine the frequency of angle closure disease in siblings of PAC (G) patients.
- **Methods:** Consecutive patients with PAC (G) were identified and their siblings underwent a comprehensive ophthalmologic examination, ultrasonic pachymetry and Lenstar biometry. OCT and SAP were performed in subjects with angle closure disease or any suspicious to glaucoma.
- **Results:** Overall, 95 siblings of 47 families with at least one subject affected with PAC(G) participated for the evaluations; 55 (57.9%) individuals were categorized within the spectrum of angle closure including 40 (42.1%) subjects with PAGS, 10 (10.5%) individuals with PAC, and 5 (5.3%) cases of PACG. Unexpectedly, 9 (9.5%) individuals demonstrated other abnormal features; these included 2 (2.1%) subjects with ocular hypertension, 2 (2.1%) cases with POAG, and 5 (5.3%) patients with suspicious discs. The remaining 31 individuals (32.6%) had no evidence of glaucoma.
- **Conclusion:** Our findings indicate familial segregation of angle closure glaucoma disease. Siblings of PACG patients are at higher risk for disease and also prone to other types of glaucoma which two-thirds of them demonstrate clinical findings related to glaucoma.
Yousefi, Ahmad

The Impact of Self-Citation on Ranking of Iran, Turkey, Pakistan and Egypt in Ophthalmic Sciences in Web of Science Based on the Citation Per paper

- **Authors**: Ahmad Yousefi, Seyed Farzad Mohammadi, Hossein Esfandiari
- **Affiliation**: Eye Research Center, Farabi Eye Hospital, Tehran University of Medical Sciences
- **Purpose**: In this study, the ranking of countries based on average citations per paper, which is one of the most important quality indicators in scientometrics, is ongoing. We all know that self-citation is a part of the citations to articles. So, the major aim of this study is to investigate the impact of self-citation on the ranking of countries.
- **Methods**: This is a scientometric study in ophthalmology and survey research method citation analysis is used. This research conducted on the articles indexed in ISI Web of Science between 1992-2011.
- **Results**: Findings show that the most prolific countries in ophthalmology includes Turkey (3042), Iran (839), Egypt (422) and Pakistan (131). In terms of average citations per paper, Egypt 8.98, Pakistan 6.07, Turkey 5.93, and Iran 3.72 are in place. The ranking of countries based on average citations per paper, excluding the self-citation, is Egyptian 8.60, Turkey 5.35, Pakistan 5.27 and Iran 3.30. In terms of percent of self-citation, respectively, Pakistan 13.21, Iran 11.49, Turkey 9.77 and Egypt 4.25 had the highest. Ranking of the countries based on the H Index is as follow, Turkey 40, Egypt 32, Iran 23 and Pakistan 16.
- **Conclusion**: Unfortunately, this research shows that the countries which the average citations per paper are below, trying to raise their citation per paper by more self-citation. Also, countries with low H Index have the percentage of high self-citation.

Zaferani, Mohamad Mehdi

Thickness Choroidal Map and Correlation with ICG and OCT Changes in Central Serous Chorioretinopathy

- **Authors**: Mohamad Mehdi Zaferani, Mohammad Riazi
- **Purpose**: To evaluate the choroid thickness and colored choroid map and correlation between ICGA, serous detachment with choroid thickness in Central Serous Chorioretinopathy.
- **Methods**: For all patients, clinical examination, ICGA and enhanced depth imaging (EDI) ocular coherence tomography (OCT) was performed. we also applied the EDI OCT technique (Heidelberg Spectralis OCT) with high resolution raster line to produce a colored choroidal thickness map. The choroidal map was superimposed on ICGA and infrared images to determine the degree of overlap between areas of increased choroidal thickness, choriocapillaris hyperpermeability and serous detachment.
- **Results**: The mean central subfoveal choroidal thickness in CSR patients was significantly higher than age-matched normal controls (454±79μm vs 312±50μm, P=0.04 respectively). Complete and partial superimposition of increased choroidal thickness region on the area of choroid vascular hyperpermeability in ICGA was seen in 22 (91.7%) and 2 patients (8.3%), respectively. Superimposition of increased choroid thickness with serous retinal detachment was complete in 17 cases (70.8%) and partial in 7 cases (29.2%). Visual acuity was not correlated with either choroid thickness or serous retinal detachment height.
- **Conclusion**: Choroidal vascular hyperpermeability, which is an essential factor in the pathology of CSR, is directly correlated with increased choroidal thickness and serous retinal detachment.
Zamani, Mitra

Comparison of the Histologic Changes of the Cornea after Mechanical Epithelial Removal versus Alcohol Assisted Epithelial Removal

- **Authors:** Mitra Zamani, Nastaran Ranjbari, Farideh Sharifpour, Mohammad Malekahmadi
- **Affiliation:** Department of Ophthalmology, Imam Khomeini Hospital, Ahvaz Jundishapour University of Medical Sciences
- **Purpose:** To compare the histologic changes in the cornea after mechanical versus chemical epithelial removal.
- **Methods:** 28 New Zealand Albino rabbits were randomly divided into four equal groups. 7.5mm of central epithelium was removed by chemical de-epithelialization with 20% ethanol in groups A and C and with a blunt spatula in groups B and D. Eyes in groups A and B were enucleated 24 hours after corneal surgery and in groups B and D 24 hours after complete epithelial healing. All corneas were stained with hematoxylin-eosin and for counting the polymorphonuclear (PMN) densities 40 different fields of four sections for each specimen were counted at higher magnification field (X400) and mean values were assessed.
- **Results:** Stromal edema and PMN infiltration were observed in 71.42%, 14.28%, 51.14% and 14.28% of the specimens in groups A, B, C, and D respectively. PMN counts showed significantly higher densities in group A versus B (P=0.002) and group C versus D (P=0.019).
- **Conclusion:** Stromal edema, PMN infiltration and counts were higher after alcohol assisted epithelial removal.

Zarei Ghanavati, Siamak

Prospective Randomized Comparison of Aspheric versus Wavefront-Guided Photorefractive Keratectomy: A Contralateral Eye Study

- **Authors:** Siamak Zarei Ghanavati, Hamid Gharaei, Mojtaba Abrishami
- **Affiliation:** Khatam-Al-Anbia Eye Hospital, Mashhad University of Medical Sciences
- **Purpose:** To evaluate the refractive, visual and aberrometric outcomes between wavefront-guided and aspheric PRK.
- **Methods:** In this randomized clinical trial, 96 eyes of 48 patients were enrolled. In each patient, one eye was randomly assigned for treatment with the Zyoptix Wavefront-Guided PRK and the other eye was treated with Aspheric PRK, using Technolas 217z excimer laser (Bausch & Lomb). Preoperative, 3-month and 6-month postoperative refractive error, contrast sensitivity, visual acuity and high order aberrations (HOAs) were compared.
- **Results:** The mean spherical equivalent in the wavefront-guided PRK and the aspheric PRK was -0.076±0.029D and -0.077±0.075D, respectively (P=0.684). At the last postoperative visit, there was no differences between two groups for UCVA (P=0.987) and BCVA (P=0.416). Postoperatively the mean area under log of contrast sensitivity with and without glare was raised in comparison with preoperative visit (P=0.00). However, there was no difference between the groups in contrast sensitivity with (P=0.903) and without (P=0.978) glare. Total HOAs increased after PRK in both groups; although aspheric PRK induced a smaller increase of postoperative HOAs compared to wavefront-guided PRK.
- **Conclusion:** Both methods were safe and equally improved postoperative UCVA and contrast sensitivity. HOAs increased after treatment in both groups; however, aspheric ablation induced statistically lesser HOAs than wavefront-guided ablation.
Zarei Ghanavati, Siamak

OCT in Boston Type I Kpro

- **Authors:** Siamak Zarei Ghanavati, Saeed Shokoohi, Victor L Perez
- **Affiliation:** Khatam Al Anbia Eye Hospital, Mashhad University of Medical Sciences
- **Purpose:** To evaluate the anterior keratoprosthesis-cornea interface of the eyes with Boston type 1 keratoprosthesis (Kpro)
- **Methods:** In a prospective non-interventional study, at Bascom Palmer Eye Institute, University of Miami, USA, ten patients with Boston Type I Keratoprosthesis underwent ultra high-resolution Optical Coherence Tomography (UHR-OCT) evaluation. The images were used to measure and describe the characteristics of anterior keratoprosthesis-cornea interface, epithelial interaction at keratoprosthesis edge and keratoprosthesis-cornea interface gap.
- **Results:** Ten patients (4 males, 6 females) with Boston Type I Keratoprosthesis with different preoperative diagnosis (8 multiple corneal graft failures and 2 immunological ocular surface diseases) were included in the study. The mean time between surgery and HR-OCT evaluation was 15.2 months. In eight patients, epithelial growth over the periphery of Kpro was documented. We also detected keratoprosthesis-cornea interface gap in three patients. Two of the patients with the interface gap were among the high risk group. In one patient with severe ocular hypotony, Kpro edge was inserted into the anterior stroma and covers with the epithelium.
- **Conclusion:** UHR-OCT showed that corneal epithelium covers the Kpro edge and seals the opening of potential space between the Kpro and the corneal in 90% of cases. Presence of the gap in the interface was associated to the preoperative high-risk profile.

Keratin 13 and Keratin 19 in Conjunctival Epithelium

- **Authors:** Siamak Zarei Ghanavati, Masoud Shafiee, Arturo Ramirez-Miranda, Martin N. Nakatsu, Christine V. Nguyen, Sophie X. Deng
- **Affiliation:** Khatam Al Anbia Hospital, Mashhad University of Medical Science
- **Purpose:** To determine whether K13 could be used as a marker for conjunctival epithelium
- **Methods:** Total RNA was isolated from the human conjunctiva and central cornea. Expression levels of three known signature genes and of two conjunctival genes, K13 and K19 were confirmed by using quantitative real-time. Protein expression of K12, K13, and K19 was confirmed by immunostaining with specific antibodies on histologic sections of human sclerocornea that contained the conjunctiva, limbus, and cornea and on impression cytology (IC) specimens of the cornea and conjunctiva from normal donors. Double staining of K13/K12 and K19/K12 on histologic sections and IC specimens was performed.
- **Results:** There were 337 transcripts that were preferentially expressed in the conjunctiva. Immunohistochemical studies showed that K13 was expressed at the posterior limbal epithelium and conjunctival epithelium but was totally absent in the cornea. In contrast, K19 was detected in the corneal, limbal and conjunctival epithelia.
- **Conclusion:** K13 is more specific to the conjunctival epithelial cells than K19 and potentially could be used as a marker to identify conjunctival epithelial cells in limbal stem cell deficiency.
Abolhasani, Abbas

Contralateral Eye Study of Corneal Collagen Cross-Linking With Riboflavin and UVA Irradiation in Patients with Keratoconus

- **Authors:** Abbas Abolhasani, Ahmad Shojaei Baghini, Hamidreza Zabihi, Kourosh Sheibani
- **Affiliation:** Basir Eye Clinic
- **Purpose:** To assess the progression of keratoconus in patients who were treated with corneal collagen cross-linking (CXL) with riboflavin and ultraviolet A (UVA) irradiation compared with eyes without treatment from the same patient.
- **Methods:** Eighty eight eyes of 44 patients aged from 18 to 25 years, with progressive keratoconus were enrolled in a prospective comparative study. The follow-up time was 6 months. The worse eye was treated with CXL, and the fellow eye remained as the control. Corneal epithelium was mechanically removed. Riboflavin was applied every 2 to 3 minutes for 30 minutes. Ultraviolet A irradiation was also performed for 30 minutes.
- **Results:** The group treated with CXL demonstrated a mean (± SD) decrease in spherical equivalent (less myopic) and cylinder of 1 ± 1 diopters (D) (range: -3 to 3 D) and -0.83 ± 1.12 D (range: -1.75 to +3.75 D), respectively (P < 0.001), and an increase in uncorrected distance visual acuity (UCDVA) and best corrected distance visual acuity (BCDVA) of 0.07 +/- 0.09 (range: 0.00 to 0.24) and 0.07 ± 0.13 (range: -0.22 to 0.6), respectively (P <0.001). Topography-derived keratometry mean decreased by 0.9 ± 1.3(range: (-3.5 to 6) (P < 0.001). All of these parameters worsened in the untreated control group.
- **Conclusion:** Collagen cross-linking seems to be useful in inhibiting the progression of keratoconus, spherical equivalent refraction, and refractive cylinder in eyes with progressive keratoconus in an average of 6 months follow-up time.

Abrishami, Mojtaba

Prevalence of Musculoskeletal Disorders among Ophthalmologists of Mashhad

- **Authors:** Majid Abrishami, Mojtaba Abrishami, Mohammad Saeedi Rezvani, Hamed Saeedi Rezvani
- **Affiliation:** Eye Research Center, Mashhad University of Medical Sciences, Mashhad, Iran
- **Purpose:** To determine the prevalence of musculoskeletal disorders and work-related risk factors in ophthalmologists of Mashhad.
- **Methods:** This cross-sectional analytic study was performed on 48 ophthalmologists in Mashhad, Iran. All Data were collected using standardized Nordic questionnaire checklist of 4 body area and 3 occupational positions. Then, the data was analyzed by maverick T-test and Spireman correlation with SPSS 13 software.
- **Results:** The mean age and duration of working as an ophthalmologist were 35.72 and 9.02 years and the mean daily working lenght was 9.95 hours in 66% of ophthalmologists musculoskeletal disorders were found. Prevalence of the areas affected was neck in 45%, lumber and spine in 33% shoulder in 12%and hand and wrist in 8% of patients.
- **Conclusion:** Musculoskeletal disorders have a high prevalence among ophthalmologists of mashhad. The neck was the most common affected area maybe due to improper posture when working with slit lamp and operation microscopes. The result of this study could be used to interpret guidelines for preventing musculoskeletal disorders among ophthalmologists. It seems that ergonomic interventions are necessary to correct work-related problems in this specific population.
Angle Kappa Changes after Photorefractive Keratectomy

**Authors:** Siamak Zarei-Ghanavati, Hamid Gharaei, Alireza Eslampour, Mojtaba Abrishami, Soamaye Ghasemi Moghadam

**Affiliation:** Eye Research Center, Mashhad University of Medical Sciences

**Purpose:** To compare differences in the mean angle kappa and its intercepts before and after photorefractive keratectomy (PRK).

**Methods:** In a prospective controlled study, myopic patients were treated with aspheric wavefront-guided (personalized) PRK with a Bausch & Lomb Technolas 217z excimer laser. The manifest refraction, visual acuity and angle kappa were evaluated preoperatively and at 1 and 6 months postoperatively. The same operator performed all angle kappa measurements using Orbscan II.

**Results:** A total of 48 cases (96 eyes, 68.75% female) were treated, with a mean age of 26.70 ± 4.89 years (18–34 years). The preoperative and postoperative mean angle kappa values were not significantly different (4.97 ± 1.24 vs. 4.99 ± 1.10 at 6 months). The average horizontal distance (x-intercept) between the visual axis and pupillary axis intersection on the corneal surface measured before surgery (-0.562 ± 0.074 mm) did not significantly differ from the values measured at 1 and 6 months after surgery (-0.559 ± 0.048 and -0.554 ± 0.055 mm, respectively). Similarly, the average vertical distance (y-intercept) values did not differ before and at 1 and 6 months after surgery (0.156 ± 0.225, 0.142 ± 0.040, and 0.149 ± 0.33 mm, respectively).

**Conclusion:** No differences in the angle kappa or its corneal intercepts were observed between pre- and post-PRK. This finding implies that PRK does not change the corneal vertex locations.

Normative Values and Contralateral Comparison of White to White Corneal Diameter Measured by Orbscan II in an Iranian Population

**Authors:** Hamid Gharaei, Mojtaba Abrishami, Masoud Shafiee

**Affiliation:** Eye Research Center, School of Medicine, Mashhad University of Medical Sciences

**Purpose:** To measure the normative values of white to white (WTW) corneal diameter and comparison between right and left eyes in the normal young population.

**Methods:** 1001 cases were enrolled in an observational cross-sectional study. Patients aged between 18 to 35 years referred to the KhatamEyeHospital were included. Exclusion criterias were history of any intraocular or corneal disease or anomaly or surgery, hyperopic spherical refraction more than +3.00 , and myopic spherical refraction less than -5.00 diopters (D) or cylindrical refraction more than 2.00 D. All measurements were done by the same operator using Orbscan II.

**Results:** 2002 eyes of 1001 cases (616 female, 61.45%) with mean age of 29.07±5.86 were evaluated. The averages WTW was 11.64±0.36 mm and median, mode, minimum and maximum were 11.60 mm, 11.70 mm, 10.50 mm and 13.60 mm respectively. The mean of WTW values was 11.60±0.35 in males and 11.71±0.36 in females. There was a significant difference between males and females. (P-value = 0.00) In order to our study’s result with 95% confidence interval, corneal diameter less than 10.93 mm and greater than 12.34 would be considered as microcornea and macrocornea respectively in this population.

**Conclusion:** The obtained normal values will be helpful in pre-operative patient evaluation in refractive and intraocular surgeries, mostly in surgeries with anterior chamber involvement.
**Abrishami, Mojtaba**

**Normative Values and Contralateral Comparison of Anterior Chamber Depth Measured by Orbscan II**

- **Authors**: Hamid Gharaee, Mojtaba Abrishami, Masoud Shafiee
- **Affiliation**: Eye Research Center, Mashhad University of Medical Sciences
- **Purpose**: To determine the normative values of anterior chamber depth (ACD) and comparison between right and left eyes in a normal young population
- **Methods**: Among 1500 cases, 1001 were entered in an observational cross-sectional study. Patients aged between 18 to 35 years referred to the Khatam Eye Hospital were included. Exclusion criteria were history of any intraocular or corneal disease or anomaly or surgery, hyperopic spherical refraction more than +3, and myopic spherical refraction less than -5.00 diopters (D) or cylindrical refraction more than 2.00 D. All measurements were done by the same operator using Orbscan II. In our study, the ACD was defined as the distance between the corneal epithelium and the anterior lens surface.
- **Results**: 2002 eyes of 1001 cases (616 female, 61.45%) with mean age of 29.07±5.86 were evaluated. The average ACD was 3.64±0.30 mm in males compared with 3.67±0.32 mm in females. There was a statistically significant difference and it was greater in females. ACD was decreased with age. There was a high similarity in ACD values in both eyes.
- **Conclusion**: The results of this study were different from those in other studies, even from other areas of Iran. The obtained normal values will be helpful in pre-operative patient evaluation, mostly in anterior segment involving surgeries.

**Adhami Moghadam, Farhad**

**A Study on RPE in Cases Diaognosed with Dyschromatopsiaby EOG Recording**

- **Authors**: Farhad Adhami Moghaddam, Mina Ghorbany, Sara Naeimi, Yasaman Nikooiyian
- **Affiliation**: Islamic Azad University, Tehran Medical Branch
- **Purpose**: To survey the pigmented layer of the retina in cases diagnosed with dyschromatopsia using EOG.
- **Methods**: The study was performed in an observational class subdivided by descriptive-analytical classification. Two groups with 25 patients each, the first consisted of patients diagnosed with dyschromatopsia while the second did not suffer from any visual disorder and benefited from clear-sightedness.
- **Results**: The mean Arden index in the control group was measured 2.31 with a standard deviation of 0.45 and 1.36 in the case group with standard deviation of 0.22 which presents a remarkably statistical discrepancy between the groups on the basis of the T test.
- **Conclusion**: The results of the study palpably disclosed that the individuals afflicted by dyschromatopsia will contract disorderliness of visual tract and thus deducing that the diagnoses-wise scrutinizes such as EOG could, definitely, represent as a propitious guideline to diagnose dyschromatopsia, specifically considering that the emerging results of the examinations are objective therefore the impartiality of the result withdraws to a minimum.
Aghsaie Fard, Masood

A New Algorithm Estimating the Amount of Levator Resection in Congenital Ptosis Surgery

- **Authors:** Abulfazl Kasaei, Masood Aghsaie Fard, Leila Hashemi
- **Affiliation:** Farabi Eye Hospital
- **Purpose:** To introduce a new algorithm for estimating the amount of levator resection in congenital ptosis correction in children under general anesthesia.
- **Methods:** Consecutive case series of patients undergoing levator resection ptosis repair under general anesthesia from September 2004 to September 2009. Each patient underwent ptosis repair according to a new algorithm for determining the final upper lid position under general anesthesia. The upper eyelid position was determined by the following formula: amount of ptosis plus amount of palpebral fissure opening of operated eye under general anesthesia plus 1 mm in >10 mm levator function, 2 mm in 7-9 mm levator function and 3 mm in 4-7 mm levator function. The patients were followed for at least 6 months postoperatively.
- **Results:** Seventeen eyes of 16 patients with complete follow up underwent levator resection using a new algorithm. The overall success rate was 58.7% after 12.8 months. Success rate in patients with good and fair levator function was higher (100% and 83%, respectively)
- **Conclusion:** This new formula can be considered in combination with other methods for ptosis surgery.

Aghsaie Fard, Masood

Localized Loss of Myelin, Axons, and Retinal Thickness in a Patient with Anterior Ischemic Optic Neuropathy

- **Author:** Masood Aghsaie Fard
- **Affiliation:** Farabi Eye Hospital
- **Purpose:** Degeneration of ganglion cell axons can cause myelin breakdown and loss of myelination of retinal nerve fiber (MNF) is expected in different types of optic neuropathies.
- **Methods:** A 62-year-old woman diagnosed with anterior ischemic optic neuropathy and MNF and followed for 6 months.
- **Results:** An ophthalmoscopic examination showed diffuse swelling of left optic disc, partially obscured by two segmental MNFs in upper and lower poles of disc. Six months later, MNF lost superiorly with preservation of inferior MNF. Spectral-domain optical coherence tomography of the optic nerve head and posterior pole retinal thickness showed localized thinning of superior nerve fibers (axons) and retinal thickness that correlated with visual field defect.
- **Conclusion:** This case highlights the localized nature of AION.
Aghsaie Fard, Masood

Associations of Refractive Amblyopia in a Population of Iranian Children

- **Authors:** Mohammad Mazarei, Hamid Merat, Abulfazl Mehrtash, Masoud Tarami, Mohammadreza Ooladi, Masood Aghsaie Fard
- **Affiliation:** Qazvin University of Medical science, Farabi Eye Hospital
- **Purpose:** To determine the factors associated with amblyopia in a referral clinical population.
- **Methods:** In this cross-sectional study, 164 subjects who referred to an amblyopia clinic were enrolled and divided into two groups: refractive amblyopic group and refractive non-amblyopic group. VA, refractive measurements, and information on birth parameter and delivery mode were compared between the two groups.
- **Results:** We included 164 children (91 children in the non-amblyopic group and 73 children in the amblyopic group) aged between 5 to 10 years. In regression analysis, amblyopia was significantly associated with hyperopia 2.00 D (odds ratio, 10.0; 95% confidence interval [CI], 3.27–30.58), astigmatism 1.00 D (odds ratio, 5.23; 95% CI, 2.48–11.02), myopia -2 D (odds ratio, 6.96; 95% CI, 1.9-25.28), and anisometropia (odds ratio, 3.66; 95% CI, 1.34–9.99). There were also significant associations of amblyopia with low birth weight (less than 2500 g), preterm birth (less than 37 weeks), and dystocia (all P=0.000).
- **Conclusion:** Prematurity, low birth weight, and dystocia, in addition to refractive errors were associated with amblyopia.

Ahmadi Shokouh, Abolfazl

Cataract Incidence in Dominant and Non-dominant Eye

- **Author:** Abolfazl Ahmadi Shokouh
- **Affiliation:** HUMS
- **Purpose:** In life environment, non-dominant eye is closed as exposing to light troubles and only dominant eye is used. So conducting a research was very necessary for finding protection schemes.
- **Methods:** The subjects have been selected among those patients who had referred to Mohammadi Hospital for ultrasound and IOL calculation. The dominant eye has been found by closing one eye without using hand or any cover (blinking). So, traumatic cataract and patients aged under 40 years have been omitted.
- **Results:** The differences between dominant and non-dominant cataracted eye in males was more than in females.
- **Conclusion:** Based on the current study, in all regions such as Bandar Abbas with intense sunlight and proximity to the sea, the risk of cataract accession is high. Thus, the dominant eye in men who work outdoors needs more attention and protection.
Ahmadi Shokouh, Abolfazl


- **Author:** Abolfazl Ahmadi Shokouh
- **Affiliation:** HUMS
- **Purpose:** The patients who have been operated for cataract, will hardly come back for the second eye operation.
- **Methods:** This survey has been done on 924 patients who had been referred from other private and public eye clinics to center eye clinic in Bandar Abbas before cataract operation for IOL calculation. They had been selected from different social classes and age groups.
- **Results:** This research shows a considerable amount of difference between these two groups. Those who have cataract surgery on the first eye were 77.5% and those who have come back for the second eye cataract surgery were 22.5%.
- **Conclusion:** The patients who have undergone surgery on cataract for the first time don’t tend to have the same surgery on their other eye. Therefore, all steps in the surgery on the first eye require more attention.

Ahmadi Shokouh, Abolfazl

Fusion Importance Before, In and After Refractive Surgery

- **Author:** Abolfazl Ahmadi Shokouh
- **Affiliation:** HUMS
- **Purpose:** A large number of patients after refractive surgery encounter with problems in reading, astenopia, eye strain and in worse may be intermittent deviation.
- **Methods:** In patients with at least 4 diopter refractive error in each eye in near vision 33 cm, have at least 2.4 prism diopter prismatic effect that in myopia (minus lense ) appear Base Out, therefore patient need less convergence with spectacle at near and comfort at reading. And this is inverse for hypopia with prismatic effect 2.4 Base Out at near,in theother hand the minification reduces in myopia and the magnification reduces in hypopia.
- **Results:** One of the major deviation patterns in patients with low fusional reserve and myopia more than 4 diopter in each eye may be go to intermittent XT at far. And if they have no deviation they will get astenopia or eye strain in near vision. These problems have a direct relation with two factors including fusional reserve and refractive error.
- **Conclusion:** Therefore with measurement of fusional reserves in patients with over 4 diopter RE in each eye before refractive surgery, and providing a treatment plan for improve fusional reserve; we can have a successful operation with a good grade of patient satisfaction.
Ahmadian Shalchi, Mohammad Hossein

An Office Base of Intra-vitreal Injection of anti VEGF (avastin) in 1000 cases

- **Author:** Mohammad Hossein Ahmadian Shalchi
- **Affiliation:** Eye Research Center of Mashhad Khatam -All Anbea
- **Purpose:** As someone does the injection in operating room and as we need to do more and more interavitreal injection of Avastin, it is very logic to do it as safe as possible but cheaper and simpler, as an office base injection.
- **Methods:** one drop of tetracaine for two times and one drop of betadine 5% is applied. Upper lid is picked up by the hand of assistant then 0.5 cc of avastin prepared in insulin syringe with 29 gage needle is injected 3-4 mm from superotemporal limbus as patient is looking down. No measure was used but eye estimation. Gentle massage with tip of cotton applicator to injection point is done and one drop of 5% betadine is instilled again .IOP was checked by patient vision. Chloramphenicol drop, every two hours in the awake time for two days, as prophylaxis was ordered.
- **Results:** No medication was needed for IOP rise. There was no endophthalmitis. Some cases had low grade uveitis and subconjunctival hemorrhage but no need for more medication. No obvious pain and no other complain was reported. There was no more complication but more acceptances by the patient who had the experience of intra-vitreal injection of Avastin by the other way.
- **Conclusion:** It seems to be simple, easy, less expensive and more desirable for the patient and the surgeon.

Ahour, Mohammad Hosein

Mid-term Results of Bevacizumab as Adjunctive Treatment for Proliferative Vitreoretinopathy

- **Authors:** Mohammad Hosein Ahour, Rana Sorkhabi
- **Affiliation:** Tabriz University of Medical Sciences
- **Purpose:** To evaluate the mid-term anatomical and functional outcomes of intra-vitreal injection bevacizumab in silicone oil–filled eyes as an adjunctive treatment for proliferative vitreoretinopathy
- **Methods:** This is a prospective interventional case series. Patients with proliferative Vitreoretinopathy grade C or D received pars plana vitrectomy combined with silicone oil tamponade and intravitreal injection of 1.25mg bevacizumab in the first stage and after 6 weeks and silicone oil removal in the second stage.
- **Results:** In all, 16 eyes from 16 patients were included in this study. The mean follow-up duration was 6 months. Retina was reattached in 14 (87.5%) eyes at the last visit. Best-corrected visual acuity increased in 11 (78.8%) eyes, remained unchanged in 3 (21.2%) eyes, at last visit compared with baseline.
- **Conclusion:** Intra-vitreal injection of 1.25mg bevacizumab as an adjunct to vitrectomy and silicone oil tamponade in treating proliferative vitreoretinopathy (grade C or D) appears to be effective and safe.
Akbari, Mohammad Reza


- **Authors**: Mohammad Reza Akbari, Alireza Keshtkar Jafari, Ahmad Ameri, Babak Masoomian
- **Affiliation**: Farabi Eye Hospital, Tehran University of Medical Science
- **Purpose**: To report a patient with successful twice resection of snapped and retrieved inferior rectus muscle for correction of deviation
- **Methods**: Interventional case report
- **Results**: A 26-year-old woman who has left head tilt from childhood was undergoing left inferior rectus resection to correct left inferior rectus paresis. During the surgery when inferior rectus hooked, muscle torn (snapped) completely 8 mm posterior to insertion. Fortunately we could find proximal head of muscle and after 3 mm resection of posterior part; proximal and distal head was sutured together with 5-0 mersilene suture. After nine months follow up there was diplopia, left head tilt and left hypertropia, so left inferior rectus re-resection was done. At the end of 18 months follow up mild infraduction deficit was present on down gaze and there was not deviation in primary position.
- **Conclusion**: This report demonstrates that, repetitive surgery (reresection) on a snapped and retrieved muscle is possible and this approach itself can lead to an acceptable result. In fact, unlike the common law, after IR snapping, we could resolve the problem without using another extra ocular muscle.

Akbari, Mohammad Reza

Synergistic Divergence, DRS Type 4; a Case Report

- **Authors**: Mohammad Reza Akbari, Leila Hosseini Alhashemi
- **Affiliation**: Farabi Eye Hospital, Tehran University of Medical Science
- **Purpose**: To present a case with synergistic divergence
- **Methods**: We present a 4 years old girl presenting with synergistic divergence
- **Results**: She had left exotropia more than 90 PD which significantly increased on the right gaze. Ocular rotation showed significant limitation in adduction (-6) of the left eye associated with mild narrowing of palpebral fissure and retraction of globe in attempted adduction of the left eye. In vertical movement she showed A pattern incomitancy. The patient underwent 2 stages of strabismus surgeries. First, asymmetric bilateral lateral rectus muscle recession 8.5mm in the RT and 10mm in the LT eye was done. At first postoperative day exotropia was reduced 5 months postoperation, right face turn and 70 PD exotropia associated with -2 limitation in adduction and -4 limitation in abduction of the LT eye was still present. So in the second stage the left lateral rectus was released and reattached to the lateral orbital rim periosteum in combination with 8mm left medial rectus muscle resection and Bilateral ⅓ tendon of superior oblique post tenectomy. One year after operation patient was orthotropic with -2 limitation of adduction and -4 limitation of abduction.
- **Conclusion**: Synergistic divergence can be managed by complete detachment of the lateral rectus muscle in the involved eye.
Alijenab Monfared, Zeinab

Anxiety of Patients Who Wearing Artificial Eyes

**Authors:** Zeinab Alijenab Monfared, Hamid Raees Danayee

**Affiliation:** Behro Technical Orthoptic Center

**Purpose:** To identify the concerns of experienced artificial eye wearers and investigate whether these had changed since they lost their eye

**Methods:** An anonymous questionnaire was posted to participants. Paired Wilcoxon tests were used to investigate changes to concern levels over time. Ordinal logistic regression was used to investigate associations of demographic variables with concern levels.

**Results:** At the time of initial eye loss, participants were mainly concerned about the health of their remaining eye, coping with monocularity and receiving good advice. Between initial eye loss and the present, reductions in concerns occurred with judging distance, peripheral vision, appearance, receiving good advice, comfort, retention, color and movement of the artificial eye, fullness of orbit, loss of balance and postoperative pain. Patients whose jobs involved the public were more concerned about appearance and reduced visual range than those in other occupations. Participants' chief present-day concerns were health of the remaining eye and watering, crusting and discharge. All the above results had a probability <0.05.

**Conclusion:** The study emphasized patients' concerns about the health of their remaining eye and their need for good advice at time of eye loss. Knowing that their initial concerns about judging distance, reduced peripheral vision and appearance all decrease over time may help clinicians in counselling these patients. Watering, crusting and discharge were the main concerns after health of the remaining eye.

Alijenab Monfared, Zeinab

Psychologic Affection in the Patients Who Use Ocular Prosthesis

**Authors:** Hamid Raees Danayee, Zeinab Alijenab Monfared, Mehdi Reza Raees Ali

**Affiliation:** Behro Technical Orthopedic Center

**Purpose:** The objective of this study was to identify the psychosocial aspects related to unilateral anophthalmic socket and evaluate patient adaptation to prosthesis.

**Methods:** All participants responded to a semi-structured interview. This was composed of two parts, the first regarding the general data of patient identification and socioeconomic aspects. The second part included information about eye loss and rehabilitation, with 31 questions. Twenty-eight volunteers were interviewed.

**Results:** Most of patients were male (53.57%). Ages ranged between 11 and 67. Trauma was the prevalent etiological factor (60.71%). A significant statistical difference (p<0.05) was found between the scores of the feelings of loss before and after prosthesis (z Wilcoxon=-4.41; p<0.001)

**Conclusion:** The data showed emotional difficulties in the initial contact with the loss of an eye and the role of the prosthesis as an element of social inclusion, stressing the importance of teamwork and access to fitting services in adapting these patients.
Alipanahi, Rakhshandeh

Comparison of Patching and Penalization for Treatment of Amblyopia

- **Authors**: Sima Sayyahamelli, Rakhshandeh Alipanahi, Davood Gharabaghi, Sara Sayyahamelli
- **Purpose**: To compare patching and Atropine penalization treatment for unilateral amblyopia and to determine the visual acuity outcome for 3 to less than 8 years old children.
- **Methods**: In a randomized clinical trial, 310 children with unilateral amblyopia (20/40 to 20/200) were included for patching or atropine eye drops for 6 months.
- **Results**: A total of 310 patients (173 males and 137 females) with the mean age of 5.70 ± 1.25 years (range: 3 to < 8 years) were included in this study and were followed for a mean of 6 months.
- **Conclusion**: In this study atropine penalization has been shown to be as effective as patch therapy in the treatment of patients with amblyopia.

Alipanahi, Rakhshandeh

Relationship between Corneal Thickness and Intraocular Pressure in Glaucomatous Eyes

- **Authors**: Sima Sayyahamelli, Rakhshandeh Alipanahi, Davood Gharabaghi, Sara Sayyahamelli
- **Purpose**: Central corneal thickness is confirmed as a risk factor for primary open angle glaucoma in American and African American population. In this study, our purpose is to recognize such a relationship in Iranian patients with primary open angle glaucoma.
- **Methods**: Central corneal thickness, refractive error and keratometry were compared in 301 eyes with glaucoma and 99 normal eyes without glaucoma.
- **Results**: Mean Central corneal thickness was 518 ± 42 in the patients group and 529 ± 39 μ in normal subjects. This difference between 2 groups was not significant (P=0.173).
- **Conclusion**: Central corneal thickness was not an independent risk factor in our patients.

Alipanahi, Rakhshandeh

Bilateral Open Angle Glaucoma in a Young Female with Galactorrhea

- **Authors**: Sima Sayyahamelli, Rakhshandeh Alipanahi, Sara Sayyahamelli
- **Purpose**: To report a case of bilateral glaucoma in a patient with pituitary adenomas
- **Methods**: A 20-year-old female developed galactorrhea and pituitary adenomas with unusual visual field defect
- **Results**: Ocular examination revealed a bilateral open Angle glaucoma in a patient with pituitary adenomas and galactorrhea
- **Conclusion**: Coexistence pituitary adenomas and glaucoma in the young female
Alishiri, Ali Agha

Comparison of Epithelial Defect Size after Epithelial Removal by Weck Spounge Spears and Haki Spatchula

- **Authors:** Aliagha Alishiri, Mostafa Naderi, Khosro Jadidi, Hossein Azarmina
- **Affiliation:** Baghiyatallah University of Medical Sciences
- **Purpose:** To compare the corneal epithelial defect size after epithelial removal by Weck spounge spears and Haki spatula
- **Methods:** In this descriptive study 100 patient (200 eyes) underwent PRK. The size of epithelium removal was the same in all patients and eyes, and it was 8.5 mm². In each patient’s right eye epithelium was removed by Weck spounge and the same removal was done by Haki spatula in the left eye. The residual epithelial defect size was measured in both eyes after 4 days from surgery.
- **Results:** The mean epithelial defect size after 4 days in right eyes was 1.5± 0.77 and it was 1.46 ± 0.77 in the left eyes (P value = 0.6)
- **Conclusion:** This study showed that there is no difference between corneal epithelial defect sizes in two methods of PRK surgery after corneal epithelial removal.

Alishiri, Ali Agha

The Effect of Tinted Filters on Quantity and Quality of Vision in Low vision Diabetic Retinopathy

- **Authors:** Naser Sadeghpour, Ali Agha Alishiri
- **Affiliation:** Baghyatallah University
- **Purpose:** Low vision may be a result of incurable eye diseases. The purpose was to investigate the effects of tinted filters on visual acuity, contrast sensitivity and patient’s satisfaction in diabetic retinopathy.
- **Methods:** 51 patients with diabetic retinopathy who had low visual impairment (VA: 0.5 to 1 Log MAR) were assessed in Baghyatallah Hospital. Log MAR Chart was used to assess patients visual acuity and CSV-1000 test was used to measure contrast sensitivity. First, measurements were performed without tinted filters and then by using them. The appropriate lenses were given to the patients for two days and they were questioned again about the use of lenses in different places. The collected data were analyzed by SPSS 17.
- **Results:** The results showed that tinted filters with the wave length of 527 and 511 improved the contrast sensitivity of patient who had low vision resulting from retinopathy and filter 527 could improve their visual acuity to some extent.
- **Conclusion:** The result of the research showed that tinted filters with the wave length of 527 and 511 improved the contrast sensitivity...
Alizadeh, Reza

The Evaluation of Visual Problems in Children with Pervasive Developmental Disorder

- **Authors:** Mohammad Etezad Razavi, Mohammad Sharifi, Seyed Elahe Vahed, Reza Alizadeh
- **Affiliation:** Khatam Eye Research Center and Hospital
- **Purpose:** To report prevalence of visual impairment in pervasive Developmental Disorder (PDD)
- **Methods:** In this descriptive-analytic study 62 children with PDD diagnosed by a children psychiatrist based on reference book. They were evaluated for age, sex, systemic & eye condition such as refractive errors, strabismus, oculomotor disorders, color vision, stereopsis, visual contact and fixation pattern.
- **Results:** 68% of cases were male and 32% were female. Their age ranged from 5 to 15 years (mean age=8.4 year). 40% of case had no central fixation & 60% had inappropriate visual contact. 19.6 % of cases had exotropia & 6.5% had esotropia. Cycloplegic refraction demonstrated hyperopia in 72% of all cases (mean = +1.3D). Hyeropia ≥ +1.5 was present in 50% of all cases. The prevalence of astigmatism was 30% and 80% of them were with the rule.
- **Conclusion:** Ophthalmologic problem in PPD children appear to be mainly hyperopia, astigmatism and poor fixation. Strabismus (especially exotropia) also has a higher prevalence among PPD children which can lead to amblyopia. Because of their limited communication; complete eye examination for early diagnosis should be recommended.

Alizadeh, Reza

Not Every Case of Recurrent Optic Neuritis Is Multiple Sclerosis: A Case of Chronic Relapsing Inflammatory Optic Neuritis (CRION)

- **Authors:** Nasser Shoeibi, Reza Alizadeh, Neusha Barakati
- **Affiliation:** Khatam Eye Research Center and Hospital
- **Purpose:** To report a unique case of chronic relapsing inflammatory optic neuritis (CRION)
- **Methods:** Case report
- **Results:** Patient is a 30 years old female referred for more evaluation of recurrent optic neuritis. She had experienced optic neuritis 6 times in right eye and 4 times in left eye. Her visual acuity was 5/10 for right eye and counting fingers from 4 meters for left eye. No relative afferent pupillary defect was present. Anterior examination was positive. Optic nerve in left eye was atrophic and rather pale comparing to the other eye. Her visual evoked potential (VEP) revealed prechiasmatic defect in left optic nerve. Her MRI imaging with and without contrast showed no plaque consistent with multiple sclerosis (MS). Patient had not received any anti inflammatory medication for her condition and only pulse of corton in her acute attacks. Her optic nerve fiber layer thickness showed significant decrease in both eyes. According to the evaluations diagnosis of CRION was made and immunomodulatory drug has been started. No new attack has been seen afterward.
- **Conclusion:** One must consider CRION in any case of recurrent optic neuritis without clinical and imaging sign of MS, as long as the prognosis and treatment, differing between these two entities is vital.
Alizadeh, Reza

Concomitant Existence of Duane Retraction Syndrome and Coat’s Disease in the Other Eye

- **Authors:** Mohammad Sharifi, Reza Alizadeh
- **Affiliation:** Khatam Eye Research Center and Hospital
- **Purpose:** To report a unique case with coats and Duane disease simultaneously
- **Methods:** Case Report

- **Results:** The patient was a twelve years old male who was referred to the strabismus service in Khatam eye hospital, Mashhad, Iran in January 2012 with the chief complaint of eye deviation of right eye. The corrected visual acuity was 20/20 in the right eye and 20/400 in the left eye. The alternate prism cover and cover/uncover testing revealed a 25 prism diopter (PD) exotropia in the primary position of the right eye. The extra ocular movement was limited in abduction and also adduction along with narrowing and retraction of the globe in attempted adduction. The slit lamp biomicroscopic evaluation was normal in anterior. Retinal examination was within normal limits in the right eye, but the left eye’s retina showed lipid deposition within posterior pole and macular region. Vessels in the temporal region of the left eye’s retina showed typical vascular telangectasia, characteristic of the Coat’s disease. As a result the patient was diagnosed with type 3 Duane syndrome in the right eye and the Coat’s disease in the left eye.

- **Conclusion:** As long as our literature reviews showed, our case is the first patient with concomitant occurrence of Duane syndrome and Coats disease in the same patient, in different eyes of the same patient.

Alizadeh, Reza

Development of Central Serous Chorioretinopathy after Change in the Dosage of Selective Serotonin Re-uptake Inhibitors: Report of 3 Cases

- **Authors:** Toka Banaee, Reza Alizadeh, Alireza Khojasteh
- **Affiliation:** Khatam Eye Research Center and Hospital
- **Purpose:** To report occurrence of central serous chorioretinopathy in 3 cases with major depressive disorder (MDD) after a change in the dosage of serum serotonin reuptake inhibitor (SSRI) drugs.
- **Methods:** Case series

- **Results:** Three patients, 2 female and one male, with an average age of 44 with MDD, complained from decreased central vision and metamorphopsia after a change in their SSRI dosage. One had just started using an SSRI 2 weeks ago and the other two had just stopped using it 3 weeks prior to occurrence of the symptoms. Funduscopy examination, optical coherent tomography (OCT) and fluorescein angiography (FA) pictures confirmed the diagnosis of CSCR. In all cases the best corrected visual acuity returned to previous state after 2 month with treatment by oral propranolol.

- **Conclusion:** Change in the SSRI dosage may be associated with development of CSCR, due to changes in serum serotonin levels. On the other hand, this occurrence may be the result of the underlying psychologic disorder or merely a chance occurrence.
Alizadeh, Yousef

Retinal Arteriovenous Malformation, Hyperopia and Foveal Hypoplasia: A Case Report

- **Authors:** Yousef Alizadeh, Mohammad Javad Mohammadi, Hasan Behboudi
- **Affiliation:** Eye Research Center, Amiralmomenin Hospital, Guilan University of Medical Sciences
- **Purpose:** To present a case of retinal arteriovenous malformation (RAVM) with high hyperopia and foveal hypoplasia
- **Methods:** An observational case report
- **Results:** A 19-year-old girl was referred by an ophthalmologist who had noticed abnormal retinal vessels in her left eye during an eye examination. The patient's visual acuity with correction was 20/20 OD and 20/400 OS. Her cycloplegic refraction showed OD: Plano 20/20, OS: +8.00-1.00×70° 20/400. Examination of her left eye revealed tortuous, dilated retinal vessels and arterialization of retinal veins mostly at the posterior pole. Retinal angiography demonstrated very rapid filling of the retinal vessels, no leakage was noted on later frames. The axial length OD and OS were 23.45 mm and 21.35 mm, respectively. Neuroimaging of the orbits and brain did not reveal associated pathology. Optical coherence tomography of the left macula displayed foveal hypoplasia.
- **Conclusion:** In order to rule out associated pathology, in all cases with RAVM, neuroimaging of the orbit and brain is indicated. Hyperopia and or foveal hypoplasia as possible sources of low vision in RAVM cases should be considered.

Amini Fard, Mohammad Naeem

Efficacy and Superiority in “PAIN CONTROL” Management after Refractive Surgery: Comparison of Oral Tramadol and Ibuprofen

- **Authors:** Mohammad Naeem Amini Fard, Roxana Hagh Parast
- **Affiliation:** Ophthalmology Department, Zahedan Medical University
- **Purpose:** To compare the efficacy and superiority of Tramadol versus Ibuprofen administration to have a satisfactory pain relief method and less complain of pain in post PRK patients
- **Methods:** 100 patients who underwent PRK were included, (2 groups of 50 subjects each). Study groups were given tramadol, 50mg tab twice a day. The observation group were prescribed Gelofen 400mg, three times a day. Visual analogue scale charts were given to all patients and they had been asked to determine the pain score for 48 hours of post operation.
- **Results:** Study group had 4 excluded patients because of tramadol addiction. From other 36 patients of study group, 35 patients showed maximum pain score of 3 out of 6 during the whole first 48 hours. Only one patient had score of 5 for the whole duration. In observe group only 11 of 50 had a score of 3 for whole duration and the other 39 patients on Ibuprofen treatments had at least a score of 4 and above during the study.
- **Conclusion:** Pain tolerance is going to be better handled by administration of oral Tramadol rather than Ibuprofen or Gelofen
Arshad, Mirza Shahid

Buspirone May Cause and Intensify Ophthalmological Problems

- **Authors**: Mirza Shahid Arshad, Shamsi Allami
- **Affiliation**: Al-Shafa Hospital, Gujrat, Pakistan
- **Purpose**: We had proved that Buspirone tablets were superior to other anxiolytic drugs in the treatment of stress related disorders. However, after prescribing Buspirone for over two years we found certain new side effects of this drug not mentioned in literature. So, our objective was to determine the newer side effects (less/not reported in literature) of Buspirone used in the treatment of stress (Anxiety) related disorders.
- **Methods**: A total of 90 patients, fifty female and forty male aged between 45 and 70 years were treated with Buspirone tabs 5mg/b.d for their stress related disorders (anxiety) who were reporting to, or admitted at Al-Shafa Hospital, Gujrat, Pakistan over a period of six months, during my administration of that hospital in the indoor and outdoor departments and were questioned for possible side effects while no other anxiolytic drug was administered to them.
- **Results**: Buspirone had presented with side effects of intensification of Dry eye syndrome accompanied by intensification of eye pain in 21 patients between 55 and 70 years of age amongst these patients. This is not present in literature.
- **Conclusion**: Buspirone may have side effects which could intensify Dry eye syndrome and eye pain so caution is required when prescribing this medication.

Ayatollahi, Jahangir

Evaluation of Diabetic Retinopathy (DR) in Patients Who Have No Eye Complaints Referring to Imam Sadegh Hospital

- **Author**: Jahangir Ayatollahi
- **Affiliation**: Shahid Sadoughi University
- **Purpose**: To evaluate the prevalence of diabetic retinopathy (DR) in patients who were unaware of their eye condition.
- **Methods**: A descriptive cross-sectional study was performed in a 12-month period. 152 patients who had no eye complaint were selected. Pupil dilation was created by Cyclopentolate and fondus examination was performed by indirect ophthalmoscope. In some cases for maculae examination, if needed, trimirror lens was used. Examination results and risk factors were recorded and statistically analyzed by SPSS.
- **Results**: Of the 152 visited patients, 38 were male and the rest were female. Mean age was 53.2 years and mean diabetic period was 6.2 years. Without gender consideration 11% suffered from one type of DR. The results of this study showed that age, duration of disease, hypertension, blood sugar level and hyper lipidemia were effective risk factors for DR, but sex was not significantly related to DR.
- **Conclusion**: Diabetic retinopathy is a well-recognized complication of diabetes mellitus. Screening programs for detecting diabetic retinopathy and early identification of disease could significantly decrease the complications of DR. By a good planning, such as periodic eye examinations and adequate treatment, blindness due to diabetic retinopathy can be reduced.
Ayatollahi, Jahangir

Topiramate-Induced Acute Myopia

- **Authors:** Jahangir Ayatollahi, AMellat, AAyatollahi, AMojoodi
- **Affiliation:** Shahid Sadoughi University
- **Purpose:** The report of acute myopia after taking topiramate
- **Methods:** Case Report
- **Results:** The patient was a 28 years old woman who had no history of any eye disease but taking topiramate. She suffered from blurred vision. A complete ocular examinations revealed acute bilateral myopia. This disease was resolved about 48 hours after discontinuation of the drug. Due to the expanding spectrum of indications for the administration of Topiramate, neurologists and psychiatrists should be aware of its diverse ocular side effects.
- **Conclusion:** In conclusion, ocular complications following this drug should be taken seriously and be subjected to ophthalmic counseling.

Baghri Zabehi, Satar

Rare Case of Coeneal Ulcer Caused by Moraxella

- **Authors:** Satar BaghriZabehi, Teodor Robič
- **Affiliation:** General hospital Murska Sobota, Murska sobota, Slovenia
- **Purpose:** To present a case of 42 year-old male with large corneal ulcer and severe inflammation on his right eye as a consequence of an eye injury with a branch while working in woods four days earlier. He complained for red eye lasting 3 days and a loss of vision lasting one day.
- **Methods:** Corneal cultures for determining the causative pathogenic bacteria were taken, pharyngeal cultures and blood investigations were performed.
- **Results:** Corneal cultures were positive for Moraxella spp. Patient was treated with ofloxacin and gentamycin topically and ciprofloxacin and clindamycin orally. Second day after initial therapy, regression of inflammation were observed with further improvement in healing in following days.
- **Conclusion:** Moraxella corneal ulcers are uncommon but may be complicated by marked inflammation and corneal perforation. Ulcers not only occur in patients with systemic diseases, including alcoholism and malnutrition, but also in patients with various pre-existing ocular surface diseases or injuries. It is important to be aware of the potential of Moraxella ulcers to result in loss of vision and corneal perforation. Moraxella corneal ulcers often do not respond well to medical treatment. As these organisms are highly susceptible to antibiotics in vitro, host factors must play a role in the poor prognosis of these infections. This infection has a poor visual outcome attributable to both the nature of the infection and the predisposing factors.
Barazandeh, Behzad

Split Corneal Transplantation as an Effective Technique for Correcting Corneal Endothelial Disorders: Report of First 16 Consecutive Cases

- **Author:** Behzad Barazandeh

- **Purpose:** To evaluate the safety and efficacy of combining DMEK and DALK to save more donor tissue

- **Methods:** Initially, DALK was performed in patients with keratoconus using big bubble technique. Descemet membrane–endothelium complexes (DEC) were stripped from the central donor cornea. Stromal layer was used for DALK, and DEC was used for performing DMEK.

- **Results:** Eight eyes with keratoconus and 8 eyes with corneal edema were entered in the study. Mean age and follow-up period for the patients receiving DALK and DMEK were 25±5.9 years and 6.2±3.5 months, and 74±8.1 years and 8.2±8 months, respectively. Mean BSCVA before operation and at the last follow-up was 0.98±0.96 and 0.13±0.19 in the DALK and 1.9±1.9 and 0.25±0.13 log MAR in the DMEK group. The mean cell loss in the DALK was 5% and in the DMEK group was 47%. In the DMEK group; there were two tissue losses and one persistent corneal edema despite the full adhesion of the DEC and 50% of the patients needed repeated air injection.

- **Conclusion:** DMEK is a safe and effective technique for correcting corneal endothelial disorder. However because of the high probability of tissue loss during this procedure it can be combined with DALK to save more tissue supply.

Bazvand, Fatemeh

Sympathetic Ophthalmia 4 Days after Primary Enucleation in the Open Globe Injury: A Case Report

- **Author:** Mohammad Taher Rajabi, Fatemeh Bazvand, Siminodkht Hoseini, Seyed Ziaeddin Tabatabaie, Mohammad Bagher Rajabi

- **Affiliation:** TUMS

- **Purpose:** To report a case of sympathetic ophthalmia that occurred 4 days after primary enucleation for severe globe injury

- **Methods:** Case Report

- **Results:** A 22 years old man underwent primary enucleation due to severe globe injury. Four days later he returned with severe uveitis and visual loss in the fellow eye. Due to disease progression and occurrence of choroidal lesions, the prednisolone with 100 mg daily was administered with diagnosis of sympathetic ophthalmia that was tapered within 6 month. His final visual acuity was achieved to 6/10 and no recurrence was documented during 18 months follow up.

- **Conclusion:** The risk of sympathetic ophthalmia is not eradicated by prophylactic enucleation after trauma.
Bazzazi, Nooshin

Comparison of Principles and Characteristics of Sunglasses Available In the Licensed Optician Shops and Miscellaneous Venders in Hamedan

- **Authors:** Nooshin Bazzazi, Siamak Akbarzadeh
- **Affiliation:** Farshchian Hospital, Hamedan Medical University
- **Purpose:** To evaluate the characteristics of sunglasses including UV light absorption, polarization ability, color of glasses and frames' shape available in the optician shops and miscellaneous venders.
- **Methods:** In this descriptive, cross-sectional study, 63 sunglasses from Hamedan licensed optician shops and 53 sunglasses from Hamedan miscellaneous venders were evaluated. The quality of UV light protection of sunglasses was assessed by using of UV –meter. Moreover, polarization ability, frame shape, distortion and color of glasses were evaluated.
- **Results:** 92% of sunglasses obtained from authorized shops had equal to/ or more than 80% UV light protection and 73% had more than 50% polarization ability. The UV protection was less than 80% in all sunglasses obtained from unauthorized shops, and more than 85% of these sunglasses did not have any polarization ability.
- **Conclusion:** According to our study, most of sunglasses obtained from miscellaneous venders in Hamedan did not have necessary characteristics and standards.

Bazzazi, Nooshin

Frequency of Medication Errors following Cataract surgery in Hamedan

- **Authors:** Nooshin Bazzazi, F Eslami, Siamak Akbarzadeh
- **Affiliation:** Hamedan University of Medical Sciences, Farshchian Hospital
- **Purpose:** Medication Errors can be classified as a commission, an omission and near-miss events. The aim of this study is the evaluation of frequency of Medication Errors in patients who underwent cataract surgery based on different methods of drug instruction.
- **Methods:** In an interventional study 200 patients who underwent cataract surgery in Farshchian Hospital were randomly assigned to two groups. In group 1, patients and their attendants received oral explanation plus written guidelines in addition to prescription, while in group 2 they received only oral explanation with the prescription. In first visit after operation the patients and their attendants were evaluated. The statistic software SPSS, χ², t test and exact Fisher test were used to analyze the results.
- **Results:** Mean age of patients and their attendants were 62.17+- 9.06 and 36.87+- 11.87 years respectively. 50.5 % of patients and 52.5% of the attendants were female. Errors occurred in 13 cases (6.5%) totally. 3medication errors were occurred in group 1 and 9 were detected in group 2. The differences between two groups from the viewpoint of mean age and the level of attendants, education were significant.
- **Conclusion:** The results of this study confirmed the importance of written instructions in addition to oral explanation and prescription in order to prevent the medication errors.
Bazzazi, Nooshin

Quality of Life in Presbyopic patients with Myopia after Pseudophakic Monovision

- **Authors**: Nooshin Bazzazi, Siamak Akbarzadeh, M Samavati
- **Affiliation**: Hamedan University of Medical Sciences
- **Purpose**: Monovision after cataract surgery is an effective alternative to being less dependent or even independent to glasses. The goal of this study is the evaluation of Psudophakic Monovision on patient’s satisfaction.
- **Methods**: In a prospective study 28 presbyope patients with myopia who were candidate for cataract surgery were inrolled. 50.7% of patients were male and all of them were over the age of 60 years. Preoperative myopia was in the range of -3 to -12 D. The intended refraction following surgery was -0.50 D +/- 0.50 in the first (dominant) eye and inside the range of -1.50 to -2.50 D+/-0.50 in the second eye. Visual acuity for near and distance, refraction, contrast sensitivity, streopsis and patients satisfaction were evaluated prior to surgery and 3 month post operative. Quality of life was assessed using the VFQ- 25 questionnaire.
- **Results**: Although some patients have had some complaints such as halos, glare and unsuccessful psudophakic Monovision, the rate of satisfaction of surgery results was higher than 80%. In our study only two patients were dependent on spectacle for near vision. Quality of life score in our patients was 83+/-.5.4.
- **Conclusion**: Although the patient satisfaction was high with Psudophakic Monovision but the success of this strategy is strongly dependent to the targeted myopia for near vision. We emphasize to select patients who not only had strong desire to be free of glasses but also understand monovision design.

Behboudi, Hassan

Prevalence of Visual Impairment in Car Accidents, Amiralmomenin Hospital, Rasht,2010-2011

- **Authors**: H Behboudi, M Fallah Karkan, N Taeefe, R Soltani Moghaddam, M Khoshbakht Pishkhani
- **Affiliation**: Guilan University of Medical Sciences
- **Purpose**: To evaluate the Prevalence of visual impairment in car accidents in patients referred to Amiralmomenin Hospital during the research period
- **Methods**: In this descriptive Cross Sectional Study, subjects were selected by Census sampling model; its content validity was evaluated and approved. All drivers who had an accident during this period entered in this Study. After the initial eye examinations and specific test, a questionnaire consisted of demographic data and history of Eye and Systemic Diseases was completed.
- **Results**: 403 drivers entered in this study -94% male and average age was 36.17 ± 11.38 years. Most accidents occurred on the road (65.8%) and in sunny weather (74.2%), 96.3% of people had not any history of eye disease. 96.3% of crashes happened for drivers with normal visual acuity, visual field (1.7%),Stropsis 15.8% and abnormal color vision (5.9%). 33 Drivers (2.8%) had a known eye disease most of them-9 (2.2%)- had a Cataract disease.
- **Conclusion**: It seems that Visual filed Test and color Vision must be added to Ophthalmologic examination before issuing driving license for applicants and diabetic patients must undergo specific eye examination .These considerations will reduce car accidents and injuries.
Beig Inaloo, Abdollah

Expression of ADAMTSLs family in Human Eye Retinal Pigmented Epithelium (RPE) and Retinal Macular Layer

- **Authors:** Abdollah Beig Inaloo, Mahdi Ghadimi Hamzekolaii, Mozhgan Rezaei Kanavi, Seyed Hassan Paylakhi
- **Affiliation:** School of Biology, Damghan University, Damghan, Iran
- **Purpose:** Retinal pigment epithelium (RPE) is the outermost layer of retina which was developed from optic cup. RPE and macular layer maybe influenced by several factors, such as the extracellular matrix (ECM) enzymes and glycoproteins. ADAMTS (a disintegrin and metalloproteinase with Thrombospondin motifs) is a family of 19 ECM secreted enzymes which has different roles in many parts of the body. ADAMTSL (ADAMTS Like) is the other family of ECM superfamily whose precise function is unclear. We hope that more recognition of expression of these genes, can help us to discover more proper and better treatments for diseases of this tissue.
- **Methods:** We used 9 human eyes TM, in 3 class of ages, <3, 20-40 and >60. Total RNA from the tissues was isolated. First strand cDNA synthesis was performed. Real time PCR was performed by using the QuantiFast SYBR Green PCR Kit. Analysis was performed by comparing normalized cycle threshold (CT) values of different samples.
- **Results:** The results will be presented in Congress.
- **Conclusion:** The results will be presented in Congress.

Daei Sorkhabi, Rana

Iridocorneal Endothelial Syndrome in 16-Year-Old Young Girl

- **Authors:** Rana Sorkhabi, Mohamad hosein Ahoor, Mehrnoosh Ghasemi
- **Affiliation:** Tabriz University of Medical Sciences
- **Case Report:** We report the iridocorneal endothelial syndrome in a young female who presented at the age of 16 years with a 3-year history of complaints of blurred vision, altered pupillary shape, and monocular diplopia OD. The examination was notable for unilateral effacement of the iris architecture, stretch holes, corectopia. Intraocular pressures were 41mm Hg OD and 10mm Hg OS. Gonioscopy revealed intermittent areas of broad synchiae anterior to Schwalbe’s line alternating with a clinically normal appearance. The left eye and angle were unremarkable. Specular microscopy confirmed the presence of unilateral endothelial pleomorphism and polymegathism. To our knowledge, this is one of the rare reported cases of iridocorneal endothelial syndrome in a young girl.
Davari, Mohammad Hossein

The Study and Evaluation of Chemical Elements in Various Tissues of Berberis Vulgaris and Zizyphus Vulgaris and its Correlation with Corneal Opacity

- **Authors:** Mohammad Hossien Davari, Behrouz Haydari, Gholamhossein Yaghobi, Hoda Gheytasi, M Sanaei
- **Affiliation:** Birjand Atherosclerosis and Coronary Artery Research Center, Birjand University of Medical Science
- **Purpose:** Barberry and Jujube cultivation plays an important role regarding to water and moisture lack in dry zones, and also their salinity resistance is significant. Barberry as one of the herbal plants has an important state in world’s pharmacology. One of the major problems for producers and those who are dealing with barberry is Injuries caused by trauma with barberry. In particular, ocular lesions such as corneal erosion, corneal ulcer and severe keratitis. This proved to be toxic substances in barberry vegetative tissues that there is not in other plants.
- **Methods:** To consider elements and chemical materials from type and amount aspect and increase awareness level of orchardists, an experiment was done in physician Science University of Birjand in 2010.
- **Results:** Means comparison of experiment showed that among all measured tissues, the highest concentration of nitrate was related to thistle Barberry’s seedlings. And the highest sulfur, Zinc amount referees to leaves. About chloride of different tissues, thistle had the highest concentration. Bicarbonate and Copper’s concentration were in highest level in Barberry’s leaves and there was significant difference among leaves and other tissues statistically
- **Conclusion:** Toxic substances in vegetative barberry tissues cause severe keratitis and then corneal scar which leads to blindness.

Dehghani, Alireza

25-hydroxyvitamin D Concentrations in Patients with Optic Neuritis as a Clinically Isolated Syndrome and Healthy Controls

- **Authors:** Alireza Dehghani, M Etemadifar, H Razmju
- **Affiliation:** Isfahan Eye Research Center, Isfahan University of Medical Sciences
- **Purpose:** The onset of multiple sclerosis in the majority of the cases occurs as a clinically isolated syndrome (CIS). We sought to assess serum levels of 25-hydroxyvitamin D (25-OHD) in CIS patients and healthy controls.
- **Methods:** In this cross-sectional study, 40 patients (36 women and 4 men) with CIS manifesting as a single isolated optic neuritis and 40 Age- and sex-matched healthy controls (35 women and 5 men) were enrolled between late October 2010 and early March 2011. General vitamin D deficiency was defined as serum 25-OHD levels of lower than 20 ng/ml and was classified as mild (15 < 25-OHD <20 ng/ml), moderate (8 < 25-OHD <15 ng/ml), and severe (25-OHD <8 ng/ml).
- **Results:** We found no difference in the median interquartile range [IQR] between CIS patients and controls (17.95 [10.40-29.13] vs. 17.00 [12.25-31.00]; P=0.57). However, when stratified by the levels of deficiency, among CIS patients a significantly higher proportion had severe vitamin D deficiency in comparison to healthy controls (20% vs. 2.5%; P=0.034). Nevertheless, the frequency of general (62.5% vs. 60%, P=0.82), mild (25% vs. 30%, P=0.80), and moderate (17.5% vs. 27.5%, P=0.42) vitamin D deficiency were not different between the two groups.
- **Conclusion:** Our findings do not indicate any significant difference of serum 25-OHD between CIS patients and healthy controls. However, in our series severe vitamin D deficiency was more frequent among CIS patients.
Dehghani, Alireza

Massive Bilateral Choroidal Detachment Induced by Administration of Topiramate

- **Authors:** Alireza Dehghani, Mohammad Ali Abtahi, Seyed Hossein Abtahi, Alireza Peyman, Masoud Etemadifar, Heshmatollah Ghanbari, Zahra Mohammadi
- **Affiliation:** Isfahan Eye Research Center, Isfahan University of Medical Sciences
- **Purpose:** Topiramate is a Sulfa-derivative Antiepileptic Drug which is also Used for Other Indications Such as Essential Tremor.
- **Methods:** A 79-year-old male was admitted to our center due to acute bilateral painless decline of vision. One month before admission, he had experienced essential tremor and treatment with topiramate 50 mg/day and propranolol 40 mg/day.
- **Results:** Best-corrected visual acuity was 20/800 OD and 20/600 OS. Both eyes had normal anterior chamber depths and irides. Intraocular pressure was 10 mm Hg in the right eye and 11 mm Hg in the left eye. Retinal examination showed notable choroidal detachments in all quadrants of the periphery, which were confirmed by ultrasonography.
- **Conclusion:** Refraction showed no myopic shift. The administration of topiramate was discontinued as a potential causative agent for this condition. During follow-up, choroidal detachment and visual acuity gradually resolved. In this study, we described the first case of isolated massive choroidal detachment induced by topiramate.

Dibajnia, Parvin

The Relationship between Behavior and Visual Problem in Children

- **Authors:** Parvin Dibajnia, Maryam Moghadasin, Azam Karimi
- **Affiliation:** Shahid Beheshti University of Medical Sciences
- **Purpose:** The relationship between visual problem and attention deficit hyperactivity disorder (ADHD), are not well understood. Since ADHD is a diagnosis based on exclusion and reported symptoms, the high level of symptomatology could be misdiagnosing the patient as ADHD when in fact, the patient has a visual problem. The purpose of this study was to evaluate the frequency of behavioral problem in children with visual problem.
- **Methods:** Preschool age children that refer to optometry clinic for routine eye examination were evaluated. Children with learning disabilities or ADHD were excluded. One parent of each child completed the Conners Parent Rating Scale (CPRS). The children’s scores on the CPRS were compared with the normative sample.
- **Results:** From those 143 children who participated in the study with a mean age of 4.86 years (SD = 1.60) 113 of them were normal, 23 patients with refractive error and 7 child had amblyopia. In our study four category included conduct, psychosomatic, anxious passive, inattention hyperactivity were evaluated. The results had showed that difference among three groups was not significant.
- **Conclusion:** Our results indicated that children with eye problem have not a higher frequency of behavioral problem as measured by the CPRS than normal children.
Doroodgar, Farideh

Toric Intraocular Lens for Astigmatism Correction in Cataract Patients

- **Authors:** M Ghoreishi, F Doroudgar, M Mohammadinia
- **Affiliation:** Tehran University of Medical Sciences
- **Purpose:** To evaluate the results of AcrySof toric intraocular lens (IOL) (Alcon) implantation to correct preexisting astigmatism in cataract patients.
- **Methods:** This prospective study included 18 eyes of 15 patients with more or equal to 1.50 D of preexisting corneal astigmatism having cataract surgery. A foldable toric IOL were implanted after phacoemulsification. The uncorrected distance visual acuity (UDVA), best corrected distance visual acuity (CDVA), residual refractive spherical equivalent (SE) and residual refractive cylinder were evaluated after 6 months.
- **Results:** The UDVA was 20/40 or better in 88% of eyes and 20/20 or better in 22.2%. The mean UDVA significantly improve from 1.05±0.50 logMAR preoperatively to 0.18 ± 0.17 logMAR postoperatively. The mean CDVA significantly improve from 0.61±0.38 logMAR preoperatively to 0.044 ± 0.098 logMAR postoperatively. The improvement in UDVA and CDVA from preoperatively to postoperatively was statistically significant (P<0.05). Mean Preoperative corneal cylinder was -2.66 ± 0.99 D. The mean postoperative refractive cylinder and SE were -0.65± 0.46 D and -0.47 ±0.48 D, respectively.
- **Conclusion:** The results of this study shows that the AcrySof toric intraocular lens implantation is an effective option to correct preexisting astigmatism in cataract surgery.

Doroodgar, Farideh

Femto-LASIK and Riboflavin Using in Hyperopia

- **Author:** Farideh Doroodgar
- **Affiliation:** Tehran University of Medical Sciences
- **Purpose:** To evaluate Riboflavin using in femtosecond laser for hyperopic astigmatism correction
- **Methods:** A 25 years old woman with dry refraction: Right eye: +4-2.25x175, Left eye: +5-2.75x170, Cyclo refraction (OD): +5.25-2.25x175, (OS): +6.25-2.75x176 (Technolas 520 f perfect vision, Germany) 9.5 mm flap with superior hinge and 120μ depth was created At the completion of femto-LASIK a drop of riboflavin solution was placed onto the bear stroma surface for 60 seconds. After rapidly diffusion into the underlying stroma, the flap was repositioned. Immediately after the cornea is exposed to UV light.
- **Results:** Post-operative BCVA and refraction after 6 months was: OD: plano - 0.25*170 = 20/25 OS: plano - 0.5*50 = 20/40 Riboflavin solution and UV light with 30 mW/cm2 fluence for 90 Seconds. UV light CXL the flap to the underlying stroma and residual stromal bed reinforced biomechanically. Technique provide: stability and less regression by halting the biomechanical shift intrinsic to hyperopic LASIK.
- **Conclusion:** Results of refractive surgery in hyperopia have several distinct differences with myopia. Regression percentage (upto 35%) is common despite of MMC use. large amounts of angle kappa and can lead to irregular astigmatism. Variable degree of accommodating spam.
**Doroodgar, Farideh**

Toxic Epidermal Necrolysis and Ocular Treatments

- **Authors:** Farideh Doroodgar, Mohamad Ghoreishi
- **Affiliation:** Tehran University of Medical Sciences
- **Purpose:** To report Ocular Treatments in Toxic Epidermal Necrolysis
- **Methods:** Lubricant eye drops, fornix sweeping, debridement, topical steroids, vitamin C and benefit hydration was down for all patients, TCL in 13 PED, punctum plug was inserted in 24 patients and AMG need for 3 patients.
- **Results:** Outcomes of ocular treatments don’t difference significantly between groups. The similarities and overlap between EMM, SJS, and TEN have led to confusion and controversy over the classification, interpretation, and subsequent management of these diseases. The results of this review call for a widely accepted consensus on diagnostic criteria for Stevens-Johnson and toxic epidermal necrolysis and multicenter collaboration in experimental studies and clinical trials that investigate disease mechanisms and novel therapeutic interventions, respectively. Furthermore, timely intervention with high-dose pulsed corticosteroids should be considered to avert ocular morbidity at the chronic stage. AMT has the advantage of not adding to the risk of systemic complications in case there is an underlying infectious etiology.
- **Conclusion:** Ocular complication in TEN should decline with early recognition, prompt withdrawal of the offending agent, early therapeutics and meticulous wound care of eye.

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**Eftekhari, Mohammad Hosein**

Study of the Effect of Oral Omega-3 Essential Fatty Acids on the Dry Eye

- **Authors:** Mohammad Hosein Eftekhari, Haleh Kangari, Azam Sardari
- **Purpose:** To determine the effect of oral omega-3 essential fatty acids on dry eye
- **Methods:** This randomized double-blind, controlled clinical trial involved 64 patients with dry eye, divided into two groups. The experimental group with 33 patients (18 women and 15 men; mean age 61±8.7 years) received two capsules of omega-3 fatty acids supplement daily (containing 180 mg EPA and 120 mg DHA) for one month. The control group with 31 patients (20 women and 11 men; mean age 61.37±8.3 years) received the placebo (containing MCT oil) twice daily for one month. Patient underwent two examination; at base line and after 1 month of treatment. At each examination the OSDI questionnaire was completed, and tear break up time and Schirmer test (type 1) were performed.
- **Results:** A statistically significant reduction in score of OSDI questionnaire in omega-3 treatment group was observed (p=0.016). The improvement in dry eye symptoms in omega-3 group was 25 % while in placebo group was 3.3 %. The Schirmer test and TBUT were improved with treatment when compared with placebo but the difference was not statistically significant (respectively p=0.22 and p=0.106).
- **Conclusion:** Omega-3 supplements (administration) can decrease symptoms of dry eye and also ocular discomfort.
Eslampoor, Alireza

**Efficacy of Extended-Release Oral Diclofenac in Postoperative Pain Management after Photorefractive Keratectomy**

- **Authors:** Alireza Eslampoor, Mojtaba Abrishami
- **Affiliation:** Mashhad University of Medical Sciences
- **Purpose:** To evaluate the efficacy of extended-release diclofenac for the management of pain after PRK surgery.
- **Methods:** In this prospective clinical trial study, patients in the case group were given extended-release diclofenac pre- and postoperatively, and patients in the control group were given acetaminophen and ibuprofen pre- and postoperatively. Patients were examined 2 days after PRK surgery. Pain, photophobia, and functional deficit scores were evaluated subjectively for each patient. The surgeon evaluated lid swelling, conjunctival injection, and epithelial healing.
- **Results:** Among 62 patients enrolled in the study, 33 patients were given extended-release diclofenac (case group) and 29 patients were given acetaminophen and ibuprofen (control group). The pain score was reduced in the case group compared to the control group (4.32 ± 2.72 vs. 6.52 ± 1.99, respectively; p < 0.001). Photophobia, functional deficit scores, lid swelling, and conjunctival injection were significantly reduced in the case group compared to the control group.
- **Conclusion:** The results indicate that oral diclofenac (preoperatively) is more effective than other routine analgesics in the management of pain in PRK surgery.

Esmaili, Ali Reza

**Efficacy of Goniosynechialysis (GSL) Combined With Phacoemulsification for Primary Angle Closure and Primary Angle Closure Glaucoma**

- **Authors:** Alireza Esmaili, Setareh Sagheb
- **Affiliation:** Razavi Hospital Research Center, Mashhad
- **Purpose:** To evaluate efficacy of goniosynechialysis (GSL) combined with phacoemulsification and for primary angle closure or primary angle-closure glaucoma (PAC/PACG).
- **Methods:** We reviewed the medical records of 26 patients who underwent phaco-GSL as primary treatment for PAC/PACG. Surgical failure was defined as IOP values ≥ 21 mmHg or drop in IOP ≤ 30% with or without medication.
- **Results:** Mean age of patients was 67 years (range 54-79). Mean follow-up time was 8.73±0.93 months (range 7-11). Mean preoperative and last visit IOPs were 19.42±6.29 mmHg and 15.65±5.49 mmHg, respectively (p=0.009). Mean number of glaucoma medication pre and postoperatively was 2.3±1.5 to 0.88±1.2 respectively (p=0.006). Mean preoperative and last visit BCVA were 0.18 ± 0.38 snellen chart and 0.42± 0.71 respectively (P=0.001). Probabilities of treatment success without medication and with medication was 53.8 % and 38.4 % respectively.
- **Conclusion:** According to the outcome of the study, we can consider this procedure as a primary treatment for PAC/PACG before more invasive operations like combined glaucoma surgeries.
Faghihi, Hooshang

Measurement of Normal Macular Thickness Using Cirrus Optical Coherence Tomography (OCT) Instrument in Iranian with Normal Ocular Condition

- **Authors:** Hooshang Faghihi, Fedra Hajizadeh, Shaahin Faghihi, Alireza Lashay, Fariba Ghassemi
- **Affiliation:** Department of Ophthalmology, School of Medicine, TUMS, Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** To describe the macular thickness map of adult Iranians with normal retinal status as measured by Cirrus’ Optical Coherence Tomography (OCT) instrument.
- **Methods:** One eye of subjects with normal ocular examination were recruited. The 512×128-scan pattern and scan area of 6×6 mm² with Cirrus OCT apparatus were used for data acquisition and analysis.
- **Results:** A total of 98 individuals participated in this study. The mean age of the subjects was 49.55±16.31 years. The mean of the central subfield thickness (CST) was 251.39±20.57 μm which is the thinnest part. The nasal, superior, inferior, and temporal parts of macula, consecutively, exhibited a decrease in macular thickness. The mean macular volume was 9.95±0.49 mm³. The average retinal thickness was 277.58±11.55 μm. There is significant correlation between age and average thickness (p<0.001) and the macular volume (p<0.001). With each year increase in the age, there were a 0.266 μm decreases in the average thickness and 0.012mm³ in macular volume.
- **Conclusion:** The thinnest part of macula was in the central subfield area with a measurement of 251μm. The nasal, superior, inferior, and temporal parts of macula, consecutively, exhibited a decrease in macular thickness. In younger adults and among males, the mean thickness was greater.

Faramarzi, Amir

Effect of Mitomycin C on Corneal Endothelial Cells during Photorefractive Keratectomy for Less Than Four Diopter of Myopia

- **Authors:** Amir Faramarzi, Mohammad Valizadeh
- **Affiliation:** Labbafinejad Hospital, Department of Ophthalmology, Ophthalmic Research Center, Shahid Beheshti University of Medical Science
- **Purpose:** To evaluate the toxicity of Mitomcyin C (MMC) on corneal endothelial cells during photorefractive keratectomy (PRK) for less than 4 diopter of myopia.
- **Methods:** In this intra-subject randomized clinical trial that was performed in Labbafinejad hospital, 100 eyes from 50 patients with less than 4 diopter of myopia (summation of sphere and cylinder between 1.50 – 3.75 diopter) underwent PRK in both eyes and in only one eye in each patient MMC 0.02% was applied for 15 seconds ( MMC group). Complete visual exam including specular microscopy (Tomey, Japan) and corneal topography by Orbscan II (Bausch & Lomb, USA) was performed before and 6 months after PRK.
- **Results:** One hundred eyes from 50 patients included in this study. Eighteen patients (36%) were men. Mean age of the patients was 27.2 ± 3(21-33) years. Mean of refractive error (summation of sphere and cylinder) -3.75 (diopter) and -2.53 ± 0.63 (diopter) was -2.75 ± 0.66 (-1.75 diopter in MMC group and in no MMC group, respectively. There is no statistically significant difference between endothelial cell density before and after PRK in MMC group and no MMC group respectively (P= 0.579, P=0.678). Corneal haziness more than trace was not seen in any patients in both groups.
- **Conclusion:** When performing PRK, application of MMC for 15 seconds has no corneal cell endothelial toxicity. However, it is not mandatory for prevention of corneal haziness in less than 4 diopter of myopia.
Farvardin, Mohsen

Early Results of Mixed Hyperopic Astigmatism Treatment by Advanced Femtolasik

- **Authors:** Mohsen Farvardin, Mehrdad Afarid
- **Purpose:** Photorefractive keratoplasty (PRK) is a poor option for mixed hyperopic astigmatism correction because of increased percentage of scarring and regression. Routine lasik has limitations for combating large amounts of angle of kappa. Advanced femtolasik may be a better option for correction of mixed hyperopic astigmatism.
- **Methods:** Twelve eyes of six patients with mixed hyperopic astigmatism underwent this study. Topographic guided Femtolasik (Wavelight Alcon refractive suite) was used. A flap with 9.5 mm diameter, 120 microns thickness and one mm nasally displaced was created. Optical zone of ablation was 7 mm, and treatment was focused on visual axis. Refractive errors and visual acuities were the main outcome measures after surgery.
- **Results:** Mean age of patients was 28.5 years. Mean hyperopia and astigmatism (without cycloplegia) before surgery was +1.98 and +2.12 respectively. Mean hyperopia and astigmatism (with mydriacil cycloplegia) was +2.98 and +2.083 respectively. Mean LogMAR of uncorrected visual acuity before study was 0.66. One week after surgery mean myopia and astigmatism (without cycloplegia) was -0.92 and +0.63 respectively, and mean LogMAR of visual acuity was 0.23. One month after surgery the mean residual myopia and astigmatism (without cycloplegia) was -0.17 and +0.33 respectively and mean LogMAR of visual acuity was 0.07. There was no decrease in BCVA in any of the observed cases.
- **Conclusion:** One month results of mixed hyperopic astigmatism correction by femtolasik may be excellent. Long term follow-up of patients will be presented latter.

Feizi, Sepehr

Outcomes of Penetrating Keratoplasty in Keratoconus Complicated by Acute Hydrops

- **Authors:** Mohammad Ali Javadi, Sepehr Feizi, Hamidreza Moein, Ahmad Mozafari
- **Affiliation:** Ophthalmic Research Center, Labbafinejad Medical Center, Shahid Beheshti University of Medical Sciences
- **Purpose:** To compare visual and refractive outcomes as well as graft survival after penetrating keratoplasty (PK) in keratoconic patients with or without acute hydrops.
- **Methods:** Fourteen eyes of 14 keratoconic patients with acute hydrops (group 1) and 37 eyes of 37 keratoconic patients with no history of acute hydrops (group 2) underwent PK. The visual and refractive outcomes, intraoperative and postoperative complications, and rejection-free graft survival were compared between the study groups.
- **Results:** Time interval from the occurrence of acute hydrops to PK in group 1 was 32.0±29.0 days, ranging from 5 to 58 days. The mean follow-up period after keratoplasty was 30.5±15.5 months in group 1 and 28.2±11.4 in group 1 and 2 respectively (P=0.9). Suture removal was started after 7.8±5.7 months in group 1 and 11.6±7.4 months in group 2 (P=0.17) and completed after 16.3±13.2 and 16.7±6.2 months in that order (P=0.13). At the last follow-up examination, mean BCVA was 0.23±0.10 and 0.15±0.10 logMAR (P=0.08), mean spherical equivalent refractive error was -3.57±1.73 and -2.32±2.31 D (P=0.25), and mean keratometric astigmatism was 3.55±1.54 and 4.36±1.78 D (P=0.26) in group 1 and 2, respectively. The two study groups were comparable in terms of graft rejection.
- **Conclusion:** PK can be performed successfully in keratoconus cases complicated by acute hydrops.
Ghadimi Hamzekolaii, Mahdi

Expression of ADAMTSLs family in Human Eye Lens

- **Authors:** Mahdi Ghadimi Hamzekolaii, Abdollah Beig Inaloo, Mozhgan Rezaei Kanavi, Seyed Hassan Paylakhi
- **Affiliation:** School of Biology, Damghan University, Damghan, Iran
- **Purpose:** Lens is a crystalline structure in eye which has convex faces. ADAMTS (a disintegrin and metalloproteinase with Thrombospondin motifs) is a family of 19 secreted enzymes, that the first member of them was described in 1997. The members of ADAMTS gene family have multiple roles in extracellular matrix degradation and turn over. More recently, the ADAMTS (L) family has been described, sharing the same ancillary domain but distinct by the absence of any enzyme activity. We hope that more recognition of expression of these genes can help us to discover more proper and better treatments for diseases of this tissue.
- **Methods:** We used 9 human eye lens, in 3 class of ages, <3, 20-40 and >60. Total RNA from the tissues was isolated. First strand cDNA synthesis was performed. Real time PCR was performed by using the QuantiFast SYBR Green PCR Kit. Analysis was performed by comparing normalized cycle threshold (CT) values of different samples.
- **Results:** The results will be presented in Congress.
- **Conclusion:** The results will be presented in Congress.

Ghafourian, Abdalhossein

Endogenous Nocardia Endophthalmitis Followed by Immunosuppression

- **Authors:** Lisa Y. Chen, Muge R. Kesen, Abdalhossein Ghafourian, Quan D. Nguyen, Charles G. Eberhart, Diana V. Do
- **Purpose:** To report a case of endogenous Nocardia endophthalmitis in the setting of immunosuppression due to chronic steroid use.
- **Methods:** A case report was conducted.
- **Results:** A 79-year-old woman presented with decreased vision and floaters in the left eye. Ophthalmic examination revealed severe inflammation in the anterior chamber, vitreous opacities, and retinal detachment. In Vitreous cultures Nocardia farcinica was grown without any systemic foci of infection found during further workup. The patient was treated with intravitreal amikacin and oral trimethoprim-sulfamethoxazole, and her retinal detachment was later repaired in the operating room. The patient then remained stable with no signs of retinal detachment or active infection.
- **Conclusion:** Nocardia endophthalmitis is a rare, but serious intraocular infection that should be considered in the differential diagnosis in any immunosuppressed patient, including those receiving steroids, who present with signs of intraocular infection.
Gharaee, Hamid

Evaluation of effect of Mitomycin-C on Corneal Endothelial Cell in various Methods of Pterygium Surgery

- **Authors:** Hamid Gharaee, Naser Shoeibi, Mousa Shoeib
- **Affiliation:** Eye Research Center, Khatam Al Anbia Eye Hospital, Medicine Faculty, Mashhad University of Medical Sciences
- **Purpose:** To evaluate and compare effect of different method of primary pterygium surgery with free conjunctival graft without MMC-C (group 1) or with MMC-C after (group 2) and before (group 3) pterygium apex avulsion on corneal endothelial cells.
- **Methods:** In comparative interventional case series a total of 54 eyes with primary pterygium were enrolled in this study. They were randomly divided into three groups: each group consisting of 18 eyes. In groups 2 and 3 MMC 0.02% was used for 2 minutes in different timing (after and before apex avulsion); all patients underwent specular biomicroscopy for corneal endothelium evaluation before operation, 1 week, 1 month and 3 months after operation.
- **Results:** We found statically decrease in count of endothelial cells of cornea and P was less than 0.05 in each group but when comparing between group, results was found not to be significant (P > 0.05).
- **Conclusion:** This study showed that different methods of primary pterygium surgery can decrease the corneal endothelial cell count but no one was found to be significantly different when compared together.

Gharaee, Hamid

Evaluation of Avastin Effect on Corneal Neovascularization

- **Authors:** Hamid Gharaee, Akbar Derakhshan Reza Poormazar, Habib Jafari
- **Affiliation:** Eye Research Center, Khatam Al Anbia Eye Hospital, Medicine Faculty, Mashhad University of Medical Sciences
- **Purpose:** Neovascularization is the overgrowth of aberrant vessels on the cornea as a result of angiogenesis motivated by angiogenic factors that causes visual impairment. Avastin is a drug which according to biologic surveys will have a good effect in prevention of neovascularization, corneal opacity and also corneal graft rejection.
- **Methods:** For all of the admitted patients with neovascularization, avastin was injected according to quadrant. The patients were followed for at least 6 month.
- **Results:** The mean primary BCVA before injection was 0.98 and after that was 0.86.
- **Conclusion:** The overall safety of bevacizumab has been established before. It seems to be a successful and safe preventive and therapeutic option in patients with corneal neovascularization.
Gharaei, Hamid

A Comparative Study on Visual and Optical Performance of Akreos AO and Kontur AB IOLs, After Phaco Emulsification Cataract Surgery

**Authors:** Hamid Gharaei, Masoud Zabihifard, Masood Shafiei

**Affiliation:** Eye Research Center, Khatam Al Anbia Eye Hospital, Medicine Faculty, Mashhad University of Medical Sciences

**Purpose:** Akreos AO and Kantur AB are two commonly used IOLs. This study was designed to evaluate the visual performance of these lenses.

**Methods:** In an intraindividual clinical trial study, 35 patients (70 eyes) were recruited and each IOL was implanted in one eye of the patients, randomly. Best corrected visual acuity (BCVA), contrast sensitivity; aberrometric analysis and depth of focus were evaluated 1 month and 3 months postoperatively. A visual quality questionnaire also filled for each eye and the results were compared.

**Results:** Mean age of the patients was 60.97±7.00 years. BCVA was not significantly different between two eyes, before, 1 month and 3 months postoperatively (p>0.05 for all). Photopic and mesopic contrast sensitivity was not different between two lenses instead of photopic 16 cycles per degree, 3 months postoperatively and in mesopic 6 cycles per degree 3 months postoperatively (p=0.034 and p=0.002 respectively). Aberrometric factors including HoRMS, Total RMS and Higher order without Z400 were not significantly different between lenses (p>0.05 for all), but they were slightly lower for akreos AO. Depth of focus was not different between two groups (p>0.05).

**Conclusion:** Visual performances of Akreos AO and Kantur AB are similar. However contrast sensitivity and aberrometric parameters are slightly better for Akreos AO IOL.

Gharebaghi, Fatemeh

Muslim Scholars in Development of Ophthalmology; Avicenna and Ibn Al-Haytham

**Authors:** Fatemeh Heidary, Reza Gharebaghi, Hasan Ghasemi

**Affiliation:** Shahed University, Medical School, Tehran

**Purpose:** Muslim scholars have rightly been credited with numerous advances in optics and visual sciences. Ibn al-Haitham has been known as the father of optics and describer of vision theory in the medical literature. Additionally, Avicenna was one of the most Iranian eminent physicians and philosophers of his days whose influence on history of medicine and ophthalmology persisted for centuries.

**Methods:** In this review, we describe contribution of Avicenna and Ibn al-Haitham as well-known scholars who have been credited with many advances in optics, ophthalmology and visual sciences.

**Results:** Ibn al-Haitham began his book Kitab al-Manazir with the anatomy and physiology of the eye. He specifically described cornea, aqueous humor, lens, and vitreous. He suggested that light came from objects, not from the eye. Moreover, he provided information regarding the optic nerve, retina, iris, and conjunctiva. Avicenna had documented the anatomy of the eye along with explanation of ophthalmic conditions such as cataract operation in his books. He also described physiology of the eye and orbital muscles. Avicenna defined cancer and metastasis and described optics in his literatures as well.

**Conclusion:** Both Ibn al-Haitham and Avicenna had distinguished transformation in history of medicine and ophthalmology.
Gharehbaghi, Reza

Potential Negative Impacts of Social Inequality on Visual Health: the Possible Pathophysiology

- **Authors:** Roghayeh Heidary, Mohammad Reza Vaez Mahdavi, Reza Gharebaghi, Fatemeh Heidary Af
- **Affiliation:** Shaheh University, Physiology Department, Tehran
- **Purpose:** The influence of socioeconomic status (SES) on health is gaining increasing interest.
- **Methods:** Recently, by using animal models, it was shown that a sense of inequality in food intake can play a greater role in promoting the aging process than food deprivation alone. These findings add to the existing pool of evidence that shows that food deprivation and inequality in food intake are highly crucial in the presence of lipofuscin pigmentation.
- **Results:** Along with the role of lipofuscin pigmentation in the heart and retina during the aging processes and recent evidence regarding the possible effects of inequality on accumulation of lipofuscin, it is hypothesised that inequality has negative impacts on the visual functions.
- **Conclusion:** Because the accumulation of lipofuscin is reported to be contributed by either ‘clogging’ of the cytoplasm or increased oxidative stress in the aged cell, we propose the same pathways to be involved in the pathophysiological impacts of social inequality on visual health.

Ghasemi, Fariba

Angiographic Findings in Coats’ Disease

- **Authors:** Carol L. Shields, Fariba Ghassemi, Arman Mashayekhi, Kim Hartzel, Matt Gorski, Jerry A. Shields
- **Affiliation:** Ocular Oncology Service, Wills Eye Institute, Thomas Jefferson University, Philadelphia, PA.
- **Purpose:** To evaluate the fluorescein angiographic features and peripheral non-perfusions in Coats’ disease.
- **Methods:** Retrospective series of the fluorescein angiography, in 35 consecutive patients with Coats’ disease. Main outcome measure: Peripheral non-perfusion in Coats’ disease detected in fluorescein angiography.
- **Results:** Out of 213 patients with Coats’ disease, in 35 patients, the general characteristics, clinical findings and the Ret Cam fluorescein angiographies were evaluated. The mean age at diagnosis was 5 years (range 1 to 39 years). The referring diagnoses included Coats’ disease (17 patients, 48%), retinoblastoma (6, 17%), retinal detachment (3, 9%), and others (9, 26%). The anterior segment displayed reaction and iris neovascularization (3, 8%), and ectropion uvea (1, 3%). The posterior segment revealed telangiectatic vessels (35, 90%), aneurysmal vessels (4, 10%), and peripheral non-perfusion (2, 5%) clinically. The angiographic findings included telangiectasia (38, 97%), light bulb and microaneurysms (38, 97), retinal non-perfusion (39, 100), far peripheral continuous non-perfusion (30, 77%) with demarcation line (23, 59%), mid-peripheral non-perfusion (33, 85%), and arterio-venous shunting (38, 97%) all more concentrated in the temporal quadrants.
- **Conclusion:** Coats’ disease can be presented as a peripheral non-perfusion disease possibly due to abnormal shunt vessels formation.
Ghoreishi, Seyed Mohammad

Visual Outcomes of LASIK Using Two Different Excimer Laser Systems: Technolas 217z100 vs. MEL 80 Excimer Laser

- **Authors**: Seyed Mohammad Ghoreishi
- **Affiliation**: Persian Eye Clinic
- **Purpose**: To compare the visual outcomes and changes in High-order aberrations (HOAs) following LASIK with Technolas 217z100 and MEL 80 Excimer Laser Systems.
- **Methods**: In this prospective clinical trial, 48 eyes of 24 patients underwent myopic LASIK. After preoperative evaluation, one eye of each patient randomly had customized LASIK with Technolas 217z100 Excimer Laser (group 1) while the fellow eye using MEL 80 Excimer Laser (group 2). Visual acuity, manifest refraction, HOAs, contrast sensitivity and subjective patient-preference of eye were compared between the two groups 6 months postoperatively.
- **Results**: Preoperatively, there were no significant differences between two groups in spherical equivalent (SE) refraction (p =0.342), corneal thickness (p =0.134) and HOAs (p =0.617). All eyes in the Technolas group and 88% of eyes in the MEL group were within ± 0.50 D of emmetropia postoperatively. After 6 months the uncorrected visual acuity (UDVA) was 20/20 or better in 79% of eyes in the Technolas group and 71% of eyes in the MEL group. Comparison of preoperative and postoperative aberrations showed that HOAs increased in the two groups.
- **Conclusion**: No differences were seen in postoperative mean aberrometric increases, contrast sensitivity, Visual acuity, SE refraction, safety and efficacy indices between the two lasers.

Hanjani, Shahriar

Evaluation of the Effects of Corneal Collagen Cross Linking On Progression of Keratoconus

- **Authors**: Shahriar Hanjani, Seyed Mohammad Ghoreishi, Mohadesheh Mohammadinia, Maryam Bahadoran
- **Affiliation**: Persian Clinic, Esfahan
- **Purpose**: To evaluate the effect of corneal Collagen Cross Linking (CCL) on the stabilization of progressive keratoconus.
- **Methods**: This study included 54 eyes of 35 patients with keratoconus. All cases were subjected to complete ophthalmic examination, uncorrected visual acuity, best corrected visual acuity, specular microscopy and evaluation of keratometry and corneal thickness by topography.CCL done by Riboflavin and UVA irradiation.
- **Results**: The results revealed a little decrease in K-reading and spherical equivalent which was not statistically significant. Also there were no significant changes in UCVA, BCVA, central corneal thickness and endothelial cell count.
- **Conclusion**: Corneal Collagen Cross Linking is effective on stabilization of Keratoconus and is safe in the majority of cases, although it needs more time.
Hashemian, Seyed Javad

Comparing and Evaluating the Anterior Chamber Depth (ACD) By High Frequency Ultrasound Biomicroscopy (UBM), Orbscan II and Lenstar LS 900 in High Myopic and Keratoconic Subjects

- **Authors:** Seyed Javad Hashemian, Mohammad Ebrahim Jafari
- **Affiliation:** Eye Research Center, Rassoul Akram Hospital, Tehran University of Medical Sciences, Negah Eye Hospital, Tehran
- **Purpose:** To compare and determine the accuracy measurements of ACD in high myopic and keratoconic subjects by UBM, Lenstar and scanning-slit topography (Orbscan II).
- **Methods:** The ACD was measured by 3 methods, UBM, Lenstar and Orbscan II in 94 eyes of 48 high myopic patients and 46 eyes of 26 keratoconic subjects. Repeatability, reproducibility, and intraclass correlation coefficients (ICC) of ACD measurements in UBM were evaluated.
- **Results:** The mean ACD was 3.18 ± 0.27, 3.20 ± 0.27 and 3.14 ± 0.28 mm with UBM, Lenstar and Orbscan II in high myopic group respectively. The mean ACD was 3.12 ± 0.22, 3.13 ± 0.23 and 3.07 ± 0.23 mm with UBM, Lenstar and Orbscan II in keratoconic group respectively. The coefficient of repeatability and reproducibility of ACD measurements with UBM were < 5%. The ICCs were 0.95 with Lenstar and Orbscan II in high myopic group and 0.96 with Lenstar and 0.94 with Orbscan II in keratoconic group respectively.
- **Conclusion:** The ACD measurements were comparable among UBM, Lenstar and Orbscan II. There was no significant difference in ACD measurements among these 3 devices.

Hashemian, Hesam

INTACS Followed by Myoring Implantation in Severe Keratoconus

- **Authors:** Mahmoud Jabbarvand, Ahmad Salamat Rad, Hesam Hashemian, Mahla Shadravan, Mehdi Khodaparast
- **Affiliation:** Ophthalmology Research Center, Farabi Eye Hospital, Tehran University of Medical Sciences
- **Purpose:** To describe outcomes of complete intrastromal ring (MyoRing, DIOPTEX GmBH, Linz, Austria) implantation in a keratoconic patient previously undergone intrastromal corneal ring segment (INTACS, Addition Technology, Inc.) implantation.
- **Methods:** We implanted a MyoRing (using femtosecond technology) in a keratoconic patient who had undergone a previous INTACS implantation surgery 4 years ago and had residual refractive error.
- **Results:** There were no intraoperative or postoperative complications. After six months; keratometry reduced from 47.6/53.1 diopters to 44.8/41.9 diopters, uncorrected distance visual acuity improved from 20/400 to 20/50 and corrected distance visual acuity improved from 20/200 to 20/30.
- **Conclusion:** In selected severe keratoconus cases with high myopia and steep keratometry, when INTACS segment is unable to correct the refractive error; secondary implantation of MyoRing over INTACS can improve vision and refraction.
Hedayatfar, Alireza

Adalimumab in the Treatment of Idiopathic Frosted Branch Angiitis

- **Authors**: Alireza Hedayatfar, Masoud Soheilian
- **Affiliation**: Noor Ophthalmology Research Center, Noor Eye Hospital, Labbafinejad Ophthalmic Research Center
- **Purpose**: To describe a case of recurrent idiopathic frosted branch angiitis (FBA) which was treated successfully with adalimumab.
- **Methods**: Review of medical report.
- **Results**: A 14-year-old otherwise healthy boy was referred for bilateral panuveitis and diffuse retinal vascular sheathing along with severe macular edema. Extensive works up including aqueous sampling for detection of virus footstep were inconclusive. Two years ago, a similar episode was treated with oral prednisolon; however, it was complicated by psychiatric adverse effect. The progressive course of condition mandated us to consider other therapeutic measure; adalimumab was chosen based on its suggested effectiveness for treatment of childhood uveitides and its safety profile. The patient responded dramatically to a single dose of adalimumab without any side effect during or after injection. The therapeutic effect was rapid and long-lasting.
- **Conclusion**: To our best knowledge, this is the first case of idiopathic FBA that was treated successfully by adalimumab without adjunctive steroid therapy.

Hedayatfar, Alireza

Clinical Features of Posner-Schlossman Syndrome in a Non-endemic Aria: Possible Etiologic Role of Cytomegalovirus Infection

- **Author**: Alireza Hedayatfar
- **Affiliation**: Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose**: To describe demographics and clinical feature of patients diagnosed with Posner-Schlossman Syndrome (PSS) whose aqueous humours were analysed by polymerase chain reaction (PCR) assay for detection of cytomegalovirus (CMV) deoxyribonucleic acid.
- **Methods**: Retrospective interventional case series. Patient profile, full ophthalmologic examination, anterior chamber fluid analysis, serologic examination, and systemic evaluation of seven patients diagnosed with PSS.
- **Results**: Three out of seven patients had positive CMV (and negative herpes simplex / varicella zoster) PCR. All of them were immunocompetent male who had a positive titre of IgG (but not IgM) against CMV and no concomitant CNV antigenemia. Mean age of onset of uveitis was 46 years (range, 32–63 years). Frequency of attacks ranged from 2 to 4 episodes per year. Maximum recorded intraocular pressure varied from 36 to 60 mmHg. Mild anterior chamber reaction, diffuse iris atrophy and few granulomatous KPs without posterior synechiae were often seen. Lack of posterior segment involvement was a consistent feature in these patients. One patient had a stromal immune ring.
- **Conclusion**: In our population PSS has a low incidence. However, this report revealed that CMV must be considered as an etiologic factor in patients with recurrent anterior uveitis associated with high intraocular pressure.
Heydari, Ebadollah

Use of Triamcinolone and Bevacizumab in Pars Plana Vitrectomy and Clear Corneal Phacoemulsification in Patients with Proliferative Diabetic Retinopathy

- **Author:** Ebadollah Heidari
- **Affiliation:** Nikookari Eye Hospital, Tabriz University of Medical Sciences
- **Purpose:** To evaluate the results and complication of PPV and clear corneal phacoemulsification and intravitreal injection of triamcinolone and bevacizumab in patients with cataract and proliferative diabetic retinopathy.
- **Methods:** In this prospective non-randomized interventional case series of 23 eyes of 20 patients who underwent PPV clear corneal cataract surgery and intravitreal injection of 2mg of triamcinolone, 1.25mg bevacizumab at the end of procedure. The main outcome measure were visual outcome and surgical complication.
- **Results:** The main indication for combined surgery were the tractional retinal detachment in 6 eyes (25%) and vitreous hemorrhage in 18 eyes (75%). The logarithm of the minimum angle of resolution visual acuity improved from 0.77± 52 preoperative to 0.32±43 six months postoperatively P<0.0001. post operative Vitreous hemorrhage in 2 eyes (8.3%) and increased IOP in 1 eye (4.34%) was observed during 6 months after surgery. Also one eye required repeating of vitrectomy.
- **Conclusion:** Combined PPV and clear corneal phacoemulsification and intravitreal injection of triamcinolone and bevacizumab in patients with proliferative diabetic retinopathy was safe and effective method.

Heydari, Ebadollah

Pneumatic Retinopexy for Inferior Retinal Detachment. Visual and anatomic Outcomes

- **Author:** Ebadollah Heidari
- **Affiliation:** Nikookari Eye Hospital, Tabriz University of Medical Sciences
- **Purpose:** To evaluate the visual and anatomic outcomes of pneumatic retinopexy for the repair of inferior rhegmatogenous retinal detachment
- **Methods:** In this prospective non-comparative interventional case series, fourteen eyes of fourteen patients with inferior RD and causative break in the inferior retina were treated by pneumatic retinopexy using intravitreal 0.4cc of (C3F8). After gas injection all patients were instructed to maintain a lateral recumbent posture with head tilting 10cm to 30cm downward.
- **Results:** 9 male and 5 female patients with the mean age of 35.1 Years, ranging from 24 Years to 69 Years, underwent pneumatic retinopexy. Which resulted in initial retinal reattachment in 10 eyes (71.4%). 4 eyes (28.5%) needed additional scleral buckling and 1 other eye developed PVR and underwent PPV. Final reattachment was obtained in all 14 eyes (100%) patient. Final mean visual acuity improved from 20/200 to 20/40 in all patients.
- **Conclusion:** Pneumatic retinopexy with proper case selection and head position can be a useful alternative treatment for inferior retinal detachment.
Hosseini, Seyedeh Symindokht

Safety and Efficacy of Orthokeratology in Myopic and Astigmatic Patients

- **Authors:** Mohammad Taher Rajabi, Zahra Ghorbani, Fereshte Nobahari, Seyedeh Simindokht Hosseini, Fatemeh Bazvand, Askar Doostdar, Parviz Zarrinbakhsh, Mohammad Bagher Rajabi
- **Affiliation:** Tehran University of Medical Sciences
- **Purpose:** Orthokeratology is a developing field of clinical optics to treat refractive errors by altering corneal characteristics through contact lens wear. It is supposed to slow progression of myopia beside correction of refractive error.
- **Methods:** A retrospective study was designed to study medical records of 182 patients (364 eyes) of myope-astigmatic refraction, after orthokeratology contact lens wear. Efficacy and safety of these lenses in improving the vision and correction of the refractive errors were investigated. Time needed to achieve final permanent visual acuity and association of various factors was investigated. Complications that occurred in the population were also recorded.
- **Results:** Amount of spherical equivalent and myopia decreased significantly after orthokeratology contact lens wear (P value<0.001). A significant negative association was detected between baseline spherical equivalent and finally achieved uncorrected visual acuity (P<0.001).
- **Conclusion:** Patient with myopia lower than 5 Diopters achieved higher final visual acuities rather than patients with higher amounts of myopia, and baseline spherical equivalent, and not the age, gender, and keratometric findings, is the most important factor that associated with final outcomes.

Hosseini, Seyedeh Symindokht

Large Orbital Cholesterol Granulomas: Report of Three Cases

- **Authors:** Mohammad Taher Rajabi, Seyedeh Simindokht Hosseini, Fatemeh Bazvand, Seyed Ziaeddin Tabatabaie, Mohammad Bagher Rajabi
- **Affiliation:** Tehran University of Medical Sciences
- **Purpose:** To report three cases of large atypical form of cholesterol granuloma
- **Methods:** Medical records and orbital imagings of three patients with orbital mass that were confirmed by histological studies as cholesterol granuloma was investigated.
- **Results:** Two of the cases had intracranial extension with no neurologic findings and intact vision; one of them presented with a cystic mass in the inferotemporal orbit, with maxillary sinus involvement. Clinical manifestations were proptosis, periorbital pain, and limitation of ocular motility. CT scan revealed an osteolytic lesion; a hyperintense lesion in MRI both T1W and T2W images, was present.
- **Conclusion:** Orbital cholesterol granuloma can extend into intracranial space without any neurological findings.
Hosseini, Seyedeh Symindokht

An Unusual Presentation after Dacryocystorhinostomy in a Patient with Myelodysplastic Syndrome

- **Authors:** Mohammad Taher Rajabi, Seyedeh Simindokht Hosseini, Fatemeh Bazvand, Ali Makateb, Mohammad Bagher Rajabi
- **Affiliation:** Tehran University of Medical Sciences
- **Purpose:** Orbital involvement in hematologic disorders is a known phenomenon that is mostly associated with myeloid type leukemias, but it is also reported in the context of myelodysplastic syndrome.
- **Methods:** Investigation of medical document and imaging and laboratory studies of a 60 years old patient with ocular mass lesion with the history of dacryocystorhinostomy.
- **Results:** A 60 years old man, known case of myelodysplastic syndrome that underwent dacryocystorhinostomy, presented with an orbital mass after two weeks post operation. It was superficially consisted of multiple loculations of blood and pus with an infiltrative soft tissue mass in the depth of the lesion. Challenging diagnostic investigations and multiple biopsies and smear and culture revealed Klebsiella orbital abscess formation. No leukemic transformation was found.
- **Conclusion:** Presumed functional immune deficiency may lead to atypical infectious manifestations. Klebsiella Abscess in the operation site, which was opened into the nasal cavity, was presented like a mass lesion that was in the differential diagnosis of granulocytic sarcoma of the orbit. Clinical resolution occurred with antibiotic treatment.

Hosseini, Seyedeh Symindokht

Sump Syndrome; a Case Presentation and Management

- **Authors:** Seyedeh Simindokht Hosseini, Seyed Ziaeddin Tabatabaie, Mohammad Taher Rajabi
- **Affiliation:** Tehran University of Medical Sciences
- **Purpose:** Sump syndrome is one of the forms of the failure of dacryocystorhinostomy that is manifested by residual tearing some time after surgery. Irrigation of the lacrimal system might be normal. The method of choice for the diagnosis is dacryocystography.
- **Methods:** Report of a case of residual tearing after dacryocystorhinostomy, that the diagnosis of Sump syndrome was documented bye nasolacrimal system imaging techniques, who underwent the revision of the surgery
- **Results:** External DCR is still considered as the most effective surgical procedure for nasolacrimal duct obstruction. Full removal of the walls of the lacrimal sac especially the inferior portion of the sac during DCR can prevent the occurrence of this syndrome. Dacryocystography is gold standard imaging for the diagnosis.
- **Conclusion:** Formation of a residual lacrimal sac after incomplete removal of the lacrimal sac in the DCR, is one of the causes of failure of DCR. Incomplete removal of the lacrimal sac should be avoided to prevent this entity. Management of this condition is a second look surgery and removal of the newly formed lacrimal sac.
Hosseini, Seyedeh Simindokht

Orbital findings and considerations: Two cases of Familial Treacher Collins Syndrome

- **Author**: Seyedeh Simindokht Hosseini
- **Affiliation**: Tehran University of Medical Sciences
- **Purpose**: Treacher Collins syndrome is an autosomal dominant craniofacial dismorphic appearance that roots from poorly developed first and second branchial arches.
- **Methods**: Report of two cases of familial Treacher Collins syndrome with periocular involvement and its oculoplastic management. Medical records of the patients and their facial photographs were investigated.
- **Results**: Variable and incomplete gene expression leads to different manifestations even in members of a family. There are various orbital findings such as down slanting palpebral fissure, lid coloboma, and absence of eyelashes. Here is presented two brothers with the syndrome with various degrees of manifestations. Oculoplastic surgery was performed to correct the anomalies in the older brother. Cosmetic management of the entity is also discussed here.
- **Conclusion**: Periocular dismorphic findings that can be manifested in a range from subtle findings to a high degree of disfigurement can be corrected by oculoplastic surgery.

Jafarzadehpur, Ebrahim

Design and Establishment of Persian near Reading Card

- **Authors**: Ebrahim Jafarzadehpur, Hassan Hashemi, Mehdi Khabazkhoob, Tahereh Abdolahinia
- **Affiliation**: Optometry Department, Tehran University of Medical Sciences, Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose**: Design and establishment of Persian near reading card for clinical use and practice.
- **Methods**: At first, card dimension, word and character size and specifications were calculated. Then, English near reading card, Richmond Product INC, was considered as a template. Context and syntax contribute to reading accuracy and efficacy of the Richmond card was considered for designed Persian card. Near reading acuity of 50 Persian native languages, that could read conventional English texts, was compared with three near reading card (two designed Persian cards and Richmond card). These cards randomly presented to the subjects. Visual acuity was randomly measured with and without a cylindrical lens (+2.00 x 90) for all participants. Visual acuity results and reading time were compared in three cards.
- **Results**: There was significant correlation (p<0.0001) in reading visual acuity between these three cards. Reliability test for Persian card reveals significant (p<0.0001) reliability for Persian cards. Reading time for Persian card was less than English card.
- **Conclusion**: These finding implies that Persian near reading card may be used for near reading acuity. It may be very useful for evaluation of visual function at near distance.
Jafarzadehpur, Ebrahim

Diurnal Heterophoria Changes in Normal Subjects

- **Authors:** Ebrahim Jafarzadehpur, Neda Aleshi
- **Affiliation:** Tehran University of Medical Sciences
- **Purpose:** Determination of heterophoria during the day in normal subjects.
- **Methods:** Normal subjects in student dormitory were selected for this study. Heterophoria was measured from 9.00 am to 23.00 pm every 2 hours. Eight measurement for far and near heterophoria was done with alternative prism cover test. Each measurement was repeated three times.

**Results:** Far heterophoria measurements reveals stable motility at far distance, except at fifth recording that is significantly (p<0.01) increased at 17.00 pm. But, near heterophoria showed different pattern. It was stable at three first measurements, but it showed exponent increase after fifth measurement.

**Conclusion:** Heterophoria changes correspond with biological clock. It increases at “down hours” and recovers in “up hours”. There is a controversy about heterophoria diurnal changes. This study implies diurnal finding for far and near recording may be completely different. Therefore, any judgment about phoria compensation should be considered according to the time of measurements. False negative finding may be due to “up hour” recordings.

Jafarzadehpur, Ebrahim

Near Point of Accommodation and Convergence 3 Months after Photorefractive Keratectomy

- **Authors:** Ebrahim Jafarzadehpur, Hassan Hashemi, Behnaz Samet, Ali Mirzajani, Mehdi Khabazkhoob, Bijan Rezvan
- **Affiliation:** Optometry Department, Tehran University of Medical Sciences, Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** Near point of convergence (NPC) and near point of accommodation (NPA) were evaluated before and after photorefractive keratectomy (PRK) in normal myopic eyes.

**Methods:** NPA and NPC were measured in 120 myopic eyes (60 patients) before and 3 months after PRK. Excluding criteria were manifest tropia, previous eye surgery, amblyopia, and any other ocular pathology. All subjects were <35 years old.

**Results:** Fifty-one females (85%) and nine males (15%) participated in the study. The average age of the participants was 25.75 years. Before the operation, the average NPA and NPC were 6.9 cm and 4.35 cm, respectively. NPA and NPC increased significantly (p < 0.05) to 7.983 cm (p < 0.001) and 5.63 (p = 0.025), respectively, after 3 months.

**Conclusion:** NPC and NPA may increase significantly after PRK. Convergence and accommodation problems may affect near visual performance. Therefore, accommodation and convergence should be evaluated before PRK. Any accommodative and convergence disorders should be diagnosed and managed before PRK.
Jafarzadehpur, Ebrahim

Visual Acuity Changes during Pregnancy and Post Partum; a Cross-Sectional Study in Iran

- **Authors:** Khashayar Mehdizadehkashi, Ebrahim Jafarzadehpur, Abolfazl Mehdizadehkashi, Shahla Chaichian
- **Affiliation:** Tehran University of Medical Sciences
- **Purpose:** To assess the changing pattern of near and distant vision of both eyes in a pregnant woman and to compare visual acuity between different trimesters of pregnancy and after child birth.
- **Methods:** A cross-sectional study was conducted in a perinatology clinic affiliated to Tehran University of Medical Sciences in Tehran, Iran between 2010 and 2012 including pregnant women between the age of 20 and 45 years old. Patients were examined for visual acuity in each trimester and 3 months after the delivery by an optometrist using the Snellen chart in a 6 meter distance assessing the distance, and 40 centimeters near vision.
- **Results:** A total of one hundred and twenty four patients were enrolled in this study of which 5 pregnancies ended in abortion and 9 patients were lost to follow-up. Of the remained 110 pregnancy, data were analyzed in terms of visual acuity changes during and after the pregnancy period. Mean ± SD age of patients was 31.77 ± 3.98 years. Distant and near vision in both the eyes were significantly different between the three trimesters (p<0.05) but it did not statistically differ between the initial of pregnancy (early first trimester) and postnatal period (p>0.05).
- **Conclusion:** Although refractive errors occur in the first trimester of pregnancy and may worsen during the next two, in most cases resolve spontaneously with no remained sequel in post partum.

Jafari, Habib

Isolated Corneal Squamous Cell Carcinoma in a Patient with Unilateral Dry Eye Symptoms

- **Authors:** Alireza Eslampoor, Siamak Zarei Ganavati, Habib Jafari
- **Affiliation:** MUMS Eye Research Center, Khatam-al-Anbia Hospital
- **Purpose:** To report a case of isolated corneal squamous cell carcinoma in a patient with unilateral dry eye symptoms.
- **Methods:** Case Report
- **Results:** The reported case is a 48 years old man who presented with history of thermal corneal injury of his left eye two years ago with decreased visual acuity and dry eye symptoms a short time after, which was treated with the diagnosis of dry eye and had no improvement in symptoms. Examination revealed hypertrophy of near total corneal epithelium, without limbal and conjunctival involvement. The surface of the lesion was irregular with punctate epithelial erosions. The patient was underwent excisional biopsy which was revealed severe corneal dysplasia (carcinoma in situ). After excision, the patient was treated with Fluorouracil and there was no sign of recurrence till the time of last exam. Dry eye symptoms were disappeared completely.
- **Conclusion:** In the case of unilateral chronic dry eye which was refractive to treatment with signs of corneal epithelial involvement, isolated corneal neoplasia should be considered even without limbal or conjunctival involvement.
Kangari, Haleh

The Impact of the Interline Spacing on Online Reading

- **Authors:** H Kangari, B Zandi, M Ghassemi Broumand, MG Sahihi Oskooie, SM Tabatabee
- **Affiliation:** Shahid Beheshti University of Medical Sciences, Faculty of Rehabilitation, Department of Optometry
- **Purpose:** To investigate the impact of the interline spacing on the reading comprehension and the reading speed of the online texts.
- **Methods:** A total of 70 undergraduate students were randomly divided into two groups. One group of students read a total of 6 Online Persian texts with interline spacing of 1.5 (7.0mm), and the other group read the same texts with the interline spacing of 2.0 (12.0 mm). The pre and post tests were prepared by CLOZE procedure. The reading times were recorded and the participants completed pre and post tests.
- **Results:** The mean of comprehension scores for the interline spacing of 1.50 was 70.5 ± 14.1 percent and for the interline spacing of 2.0 was 71.8±11.9 percent. The mean reading rate for the interline spacing of 1.50 was 2.37 ±0.55 word/sec second and for the interline spacing of 2.0 was 2.39 ± 0.61 words/sec. Independent t-test analysis shows that the differences between the two means for the comprehension scores (P=0.68, α=0.05), and for the reading rate (P=0.87, α= 0.05) were not statistically significant.
- **Conclusion:** The increase of 5 mm in interline spacing of the Online text improves neither the comprehension nor the reading rate.

Khabazkhoob, Mehdi

High Prevalence of Blindness in Rural Population of Iran

- **Authors:** Hassan Hashemi, Farhad Rezvan, AbbasAli Yekta, Morteza Abdolladi, Maryam Hashemi, Mehdi Khabazkhoob
- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** To determine the prevalence of visual impairment and blindness among the rural population in northeast of Iran
- **Methods:** Thirteen villages around the city of Khaf were cross-sectionally investigated in 2011. All the examinations were performed in Mobile Eye Clinic. Optometric examinations, including visual acuity and non-cycloplegic refraction, were done by an optometrist. Also, all the participants were examined by slit lamp and fundoscopy.
- **Results:** In this study the prevalence of eye disorders, blindness and low vision was 6.3%, 3.0% and 3.3%, respectively. The increase in age had a meaningful correlation with them. The refractive errors were the first cause of eye disorders, and the second cause was cataract. Cataract was also the main cause of blindness, whereas the refractive errors were the main cause of eye problems in the ages below 20.
- **Conclusion:** Blindness was observed in this study much more that the previous studies in Iran. Attention to cataract and providing the facilities of eye health care and surgeries in the rural areas may lead to decreasing of eye disorders and blindness.
Khabazkhoob, Mehdi

Keratometry with Orbscan II and Pentacam: Comparison of Their Agreement with the Javal Keratometer

- **Authors:** Hassan Hashemi, Farhad Rezvan, Shiva Mehravaran, Mehdi Khabazkhoob
- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** To compare Orbscan II and Pentacam keratometry readings in terms of their agreement with a manual Javal type keratometer.
- **Methods:** In this retrospective study, records of patients who had refractive surgery were reviewed. We extracted data of 765 eyes which had keratometry with the Javal keratometer; of these, 577 had Orbscan II and 200 eyes had Pentacam acquisitions.
- **Results:** Correlation coefficients for Javal and Orbscan II in measuring min-K and max-K were $r=0.916$ and $r=0.913$, respectively ($p<0.001$). The 95% LoA between Javal and Orbscan II was 1.17-1.20D for min-K and 1.22-1.24D for max-K. The coefficients for Pentacam and Javal min-K and max-K readings were very high ($r=0.943$ and $r=0.962$). The 95% LoA between Pentacam and Javal in measuring min-K and max-K were 0.51-0.99D and 0.72-0.99D, respectively. The correlation between Pentacam and Javal measurements of keratometric astigmatism was stronger than that for Orbscan II and Javal ($r=0.973$ and $r=0.800$); the 95% LoA was 0.55-0.76D for Pentacam and Javal, and 1.14-1.19D for Orbscan II and Javal.
- **Conclusion:** Orbscan II and Pentacam had high correlation and agreement with Javal keratometer in determining keratometric values. Nevertheless, the results obtained from Pentacam showed better agreement and stronger correlation with Javal as compared with Orbscan II.

Khabazkhoob, Mehdi

High Prevalence of Astigmatism among Elderly in Rural Population of Iran: Environment or Genetic?

- **Authors:** Hassan Hashemi, Farhad Rezvan, AbbasAli Yekta, Morteza Abdolladi, Maryam Hashemi, Mehdi Khabazkhoob
- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** To assess the prevalence and the main causes of astigmatism among elderly in rural population of Iran.
- **Methods:** In a cross-sectional study, 13 villages around the city of Khaf in northeast of Iran were investigated. All the examinations were performed in Mobile Eye Clinic including visual acuity, refraction, slit lamp biomicroscopy and fundoscopy.
- **Results:** Of 2635 selected subjects, 2124 (%80.6) participated in this study. Prevalence of astigmatism was 32.2%. Astigmatism significantly increased from 14.3% in the age group of under 15 years old to 67.2% in the age group of over 65 years old ($P<0.001$). The prevalence of astigmatism with cylinder power of more than 1, 2 and 3 D was 15.6%, 4.2% and 1.5%, respectively. Prevalence of with-the-rule (WTR), against-the-rule (ATR) and oblique astigmatism was 11.7%, 18.1% and 2.4, respectively. ATR significantly increased with age ($P<0.001$). Average of corneal astigmatism was 0.73 D which linearly increased with age ($P<0.001$).
- **Conclusion:** It seems that environmental and occupational factors in villages caused significant increase in prevalence of astigmatism with age. A high percentage of participants had ATR astigmatism, which was more common at older ages. Corneal astigmatism had more similarity with total astigmatism in all age groups.
Khabazkhoob, Mehdi

Epidemiology of Refractive Errors among the Elderly Population

- **Authors:** Hassan Hashemi, Mehdi Khabazkhoob, AbbasAli Yekta, Farhad Rezvan, Shokrolah Shafaei, Javad Heravian, Ashkan Shahnazi, Hamidreza Gilasi, Hadi Ostadimoghaddam

- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital

- **Purpose:** To determine the prevalence of refractive errors among the elderly population

- **Methods:** By random cluster sampling of 1185 selected individuals older than 54 years old, 79.1% participated in this cross-sectional population-based study. Participants received eye examinations including vision, habitual visual acuity (HVA), Optimal visual acuity (OVA) and refraction. Non-cycloplegic refraction was performed with an auto refractometer and the results were checked with retinoscopy.

- **Results:** Prevalence of myopia, hyperopia, astigmatism and anisometropia were 19.7% (95%CI 17.0-22.4), 39.5% (95%CI 36.1-42.9), 23.6% (95%CI 20.7-26.4) and 7.8% (95%CI 6.0-9.6), respectively. Male gender and cataract were also correlated with the prevalence of myopia significantly. Female gender and age were correlated with hyperopia. Astigmatism significantly correlated with cataract and a decrease in age. With-the-rule (WTR), against-the-rule (ATR) and oblique astigmatisms were detected in 7.5%, 13.1% and 3.5% of the participants, respectively. Overall, the prevalence of at least one type of refractive error was 64.0% (95%CI 60.7-67.3) among the participants.

- **Conclusion:** Hyperopia was the major anomaly in our population. Since the combination of presbyopia and hyperopia results in an undesirable visual condition in the elderly, it is important to pay proper attention to visual problems in this age group.

Khabazkhoob, Mehdi


- **Authors:** Hassan Hashemi, Mehdi Khabazkhoob, AbbasAli Yekta, Farhad Rezvan, Shokrolah Shafaei, Javad Heravian, Ashkan Shahnazi, Hadi Ostadimoghaddam

- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital

- **Purpose:** To determine the prevalence of visual impairment, blindness, and low vision among the elderly population of Sari in northern Iran.

- **Methods:** By random cluster sampling of 1185 selected individuals over 54 years of age, of whom 79.1% participated. Participants underwent eye examinations to test presenting visual acuity, best-corrected visual acuity, and refraction.

- **Results:** We studied 937 subjects with a mean age of 64.7 ± 7.5 years. The prevalence of visual impairment, blindness, and low vision were 11.0% (95% CI: 9.0–13.0), 3.7% (95% CI: 2.5–5.0), and 7.4% (95% CI: 5.7–9.0), respectively. Based on the best-corrected visual acuity, the results were 3.7% (95% CI: 2.3–5.1), 1% (95% CI: 0.2–1.7), and 2.7% (95% CI:1.5–3.9 ), respectively. The prevalence of visual impairment was significantly higher in subjects aged over 75 years. The most common causes of visual impairment were refractive errors and cataracts. After correcting for refractive errors, the most common causes of visual impairment were cataracts and diabetic retinopathy.

- **Conclusion:** Visual impairment and blindness were not as common in this study as found in other studies in Iran. Refractive errors and cataracts were still the main causes of visual impairments in the elderly Iranian population.
Prevalence of Age-Related Eye Disease in North of Iran

- **Authors:** Hassan Hashemi, Mehdi Khabazkhoob, AbbasAli Yekta, Farhad Rezvan, Shokrolah Shafaee, Javad Heravian, Ashkan Shahnazi, Hamidreza Gilasi, Hadi Ostadimoghaddam
- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** To determine the prevalence of the age-related macular degeneration, glaucoma, Cataract and diabetic retinopathy in the elderly population of Sari, Iran.
- **Methods:** In cross-sectional population-based study. By random cluster sampling of 1185 selected individuals older than 54 years old, 79.1% participated. Participants received eye examinations including vision, habitual visual acuity (HVA), Optimal visual acuity (OVA) and refraction. Non-cycloplegic refraction was performed with an auto refractometer and the results were checked with retinoscopy.
- **Results:** Prevalence of cataract, AMD, Glaucoma and DR were 29.6% (95%CI 26.6-32.5), 5.8% (95%CI 4.3-7.3), 3.7% (95%CI 2.5-5.0) and 2.7% (95%CI 2.6-3.7), respectively. Male gender was also correlated with the prevalence of AMD significantly. Ages were correlated with all disease. At least one disease of four diseases was detected in 35.8% (95%CI 32.7-38.8).
- **Conclusion:** More than 35% of the elderly people have showed eye problems in this study. Paying attention to these problems and diseases may lead to better life quality in these ages.

The Significant Correlation of Lens Power with Refractive Errors and Cataract in a Normal Population: The Shahroud Eye Study

- **Authors:** Hassan Hashemi, Mehdi Khabazkhoob, Mohammad Hassan Emamian, Mohammad Shariati, Akbar Fotouhi
- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** To determine the relationship between lens power with refractive errors and different types of cataract.
- **Methods:** Through random cluster sampling, 6311 persons were selected from the 40-64 year old population of Shahroud. All participants had complete optometry tests, ophthalmic examinations, and acquisitions with the Biograph. Lens power was calculated with Bennett’s method using data on the spherical equivalent, anterior chamber depth, corneal power, axial length, and the lens thickness.
- **Results:** Data from 4782 examinees was available for analysis. Their mean age was 50.7±6.2 years and 58.1% were female. Mean crystalline lens power was 23.1 [95% confidence intervals (CI) 23.1-23.2] diopters (D). Multiple regressions showed significantly higher lens powers among women and a significant decrease in lens power with aging. Among emmetropic and hyperopic cases, the age-related decrease in lens power was 0.04D and 0.09D per year, respectively (p<0.001). Mean crystalline lens power was 2.7 D higher in those with nuclear cataract compared to the others.
- **Conclusion:** Among hyperopes, lens power decreases with age, and another anticipated finding was the considerable increase in lens power at higher grades of nuclear lens opacity. An interesting finding, however, was the decreased lens power among severe cases of cortical cataract.
Khabazkhoob, Mehdi

Validity of Vision Screening Tests by Teachers among School children In Mashhad, Iran

- **Authors:** Hadi OstadiMoghaddam, Akbar Fotouhi, Hassan Hashemi, AbbasAli Yekta, Javad Heravian, Mehdi Khabazkhoob
- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** To determine the sensitivity and specificity of vision screening tests among School children in Mashhad, Iran
- **Methods:** In a cross-sectional study, using random cluster sampling, 1163 School children were selected from 14 clusters. Data of vision tests performed by teachers were derived from 847 student records and compared with data obtained by optometrists. Measurement of the uncorrected visual acuity was done using the E chart by both the teachers and the optometrists.
- **Results:** The sensitivity and specificity of the screening tests performed by the teachers were 37.5% and 92.0%, respectively. The positive and negative predictive values were 25.0% and 95.4%, respectively. There was no significant difference in the validity of the vision test between males and females (p=0.093 for sensitivity and p=0.052 for specificity)
- **Conclusion:** The preschool screening tests for vision disorders performed in Mashhad schools by teachers were not valid and they lacked the efficient sensitivity for case detection. The number of false negative results should be minimized by more accurate screening.

Khabazkhoob, Mehdi

Validity of Noncycloplegic Refraction in the Assessment of Refractive Errors: The Tehran Eye Study

- **Authors:** Akbar Fotouhi, Ian G Morgan, Rafael Iribarren, Mehdi Khabazkhoob, Hassan Hashemi
- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** To determine the sensitivity and specificity of noncycloplegic autorefraction for determining refractive status compared to cycloplegic autorefraction.
- **Methods:** The target population was noninstitutionalized citizens of all ages, residing in Tehran in 2002, selected through stratified cluster sampling. Here, we report data on 3501 people over the age of 5 years who had autorefraction with and without cycloplegia.
- **Results:** Overall, the sensitivity of noncycloplegic autorefraction for myopia was 99%, but the specificity was only 80.4%. In contrast, the sensitivity for hyperopia was only 47.9%, but the specificity was 99.4%. Overestimation of myopia was highest in the 21-30 and 31-40 year groups. Underestimation of hyperopia was high up to the age of 50 (20-40%), but decreased with age, to about 8% after the age of 50, down to almost 0% after 70. The difference in mean SE with and without cycloplegia fell from 0.71D in the 5-10 age group to 0.14D in those over 70.
- **Conclusion:** Use of noncycloplegic autorefraction in epidemiological studies leads to considerable errors relative to cycloplegic measurements, except in those over 50-60. The difference between cycloplegic and noncycloplegic measurements varies with age and cycloplegic refractive category, and there is considerable individual variation, ruling out adjusting noncycloplegic measurements to obtain accurate cycloplegic refractions.
Khakshour, Hamid

Two Year Outcome of Photorefractive Keratectomy for Correction of High Astigmatism

- **Authors:** Hamid Khakshoor, Amir Hossein Vejdani, Ladan Saffarin
- **Affiliation:** Khatam Al Anbia Hospital, MUMS
- **Purpose:** Astigmatism treatment has always been a challenge for ophthalmologists. Excimer laser is applied by different methods in Photorefractive Keratectomy for correction of astigmatism. There are few studies to report visual outcomes after treatment of moderate to high astigmatism with PRK. The aim of this study was to assess the results of PRK operation in a period of time to achieve higher predictability of the refractive outcomes.

- **Methods:** This cross-sectional study evaluated 89 patients (162 eyes) whose cylinder ranged from -3.00 to -7.75 D with myopia and hyperopia. PRK was performed using the Technolas 217Z system. Follow up period was 24 month. Data were analyzed using Statistical Program for Social Sciences (SPSS version 16).

- **Results:** The BCVA (using a Snellen chart) improved significantly (p=0.001) from a mean preoperative 1.02 ± 0.20 (range, 0.25 to 1.25) to 1.10 ± 0.17 (range, 0.6 to 1.25) 6 month after surgery. Mean BCVA was 1.04 ± 0.18 and 0.92 ± 0.1 at 12 and 24 month follow up after surgery respectively (p=0.002). The highest cylinder 6 month after operation was -0.25 (mean -1.13 ± 2.05) and showed statistically significant difference compared to cylinder before operation.

- **Conclusion:** Our results indicate that excimer laser corneal refractive surgery is efficient for correction of high astigmatism errors. Further randomized clinical trials with stratification of cylinder study will clarify the details better.

Khataminia, Gholamreza

Comparison of the Lipid Profile in Cataract Patients with and without Pseudoexfoliation

- **Authors:** GR Khataminia, A Saadat, H Rostaei, M Latifi
- **Affiliation:** Ahvaz Jundishapur University of Medical Sciences
- **Purpose:** To compare the lipid profile in cataract patients with and without Pseudoexfoliation.

- **Methods:** This study is a cross-sectional investigation lipid profile of cataract patients with Pseudoexfoliation and without Pseudoexfoliation. In these two groups, lipid profile, including LDL, HDL, VLDL, cholesterol and triglycerides were measured and compared with each other.

- **Results:** In this study, 74 patients with Pseudoexfoliation (41.9% female, and 58.1% male) and 141 patients without Pseudoexfoliation (45.4% female and 54.6% male) were studied. Mean triglyceride levels in Pseudoexfoliation patients (PXS+) was 149.87 ± 73.05 and the non-Pseudoexfoliation group (PXS-) was 127.07 ± 56.74 (P = 0.011) and result was significant different. Amounts of cholesterol, LDL, HDL and VLDL in PXS+ group respectively 192.34 ± 51.50, 119.65 ± 39.62, 45.70 ± 10.23 and 50.76 ± 26.75, respectively. These results in the two groups were not significantly different (P > 0.05).

- **Conclusion:** The results show that cataract patients with Pseudoexfoliation have greater triglyceride levels than cataract patients without Pseudoexfoliation group but other blood lipids (cholesterol, LDL, HDL and VLDL) in the two groups was not significant, these factors were equal in both groups.
Kianersi, Farzan

Bilateral Uveitis in a patient with Lipoid Proteinosis of Urbach-Wiethe Syndrome

- **Authors**: MA Abtahi, AR Dehghani, HR Fesharaki
- **Affiliation**: Isfahan University of Medical Sciences
- **Purpose**: To report a case of lipoid proteinosis with bilateral uveitis
- **Methods**: Patients suffering from Urbach-Wiethe syndrome (UWS), also known as lipoid proteinosis or hyalinosis cutis et mucosae, may have an ophthalmologist involved in the diagnosis and management of their disease. Along with moniliform blepharosis as a pathognomonic feature of the disease, an ophthalmologist may encounter other manifestations of UWS in any part of the eye such as cornea; conjunctiva; sclera; trabecular meshwork; iris/pupil; lens and zonular fibers; retina; nasolacrimal duct. In this study we report a case of lipoid proteinosis with bilateral uveitis.
- **Results**: A 27-year-old male UWS patient is described with bilateral diffuse anterior stromal iris atrophy, diffuse keratic precipitates; posterior subcapsular cataract; 1+ vitreous cell in anterior vitreous examination. This case was thought to be the first instance of bilateral uveitis associated with UWS.
- **Conclusion**: Overall, ophthalmologists may encounter diverse ocular complications accompanying this syndrome such as uveitis. They should be familiar with well-established ophthalmologic manifestations leading them to cooperate with other specialists in diagnosis and management of the disease.

Koucheki, Behrooz

Ahmed Valve Implantation and Intravitreal Bevacizumab Injection for Treatment of Neovascular Glaucoma

- **Authors**: Behrooz Koucheki, Z Vahediamoli, Hassan Hashemi
- **Affiliation**: Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose**: To evaluate short and long term results of IOP control and VA after implantation of Ahmed Valve and IVB injection in patients with refractory NVG.
- **Methods**: After implantation of Ahmed valve, 1.25 mg Bevacizumab injected in the vitreous. MOM were: VA and overall success rate.
- **Results**: Twenty six patients with at least 18 months of follow up were included. Mean IOP before surgery (mean ± SD) was 33.6 ± 4.1 which decreased to 15.2 ± 3.2, 17.3 ± 4.2, 21.2 ± 5.7, 23.3 ± 4.1, and 24.3 ± 4.2, at months 1, 2, 6, 12, and 18, respectively. Mean number of medication did not decrease significantly at month18 (3.1 versus 2.8, p=0.4). Although VA improved at 18 months, but it was not statistically significant (log MAR -0.56 versus -0.12, p=0.09). Success rate at months 1, 2, 6, 12, and 18 were 92.3, 76.9, 50, 42, 34.6% respectively.
- **Conclusion**: Although Ahmed valve implantation and IVB injection resulted in significant decrease in IOP up to 1 year, its effect decreased afterwards. VA and number of medications did not changed significantly at 18 months.
Mahdizadeh, Mehran

Successful Treatment of Resistant Toxoplasma Retinitis with Intravitreal Clindamycin: A Case Report

- **Authors:** M Mahdizadeh, SM Hosseini
- **Affiliation:** Mashhad Eye Research Center, Khatam Hospital
- **Purpose:** To report a treatment resistant toxoplasma retinitis that was managed successfully by intravitreal clindamycin injection.
- **Methods:** A 23 year old woman with the diagnosis of ocular toxoplasmosis that was unresponsive to medical treatment with azithromycin and pyrimethamine for 1 week and adding sulfadiazine for another 1 week underwent intravitreal clindamycine injection (1mg/0.1ml).
- **Results:** The presenting visual acuity was hand motion. Slit lamp examination revealed diffuse fine KPs, 2+ anterior chamber reaction, severe vitritis. After 1 week treatment with azithromycin (500 mg loading and 250 mg daily) and pyrimethamine (75 mg loading + 25 mg daily) and prednisolone 50/day (after 48h) no response was observed. So sulfadiazine (4 gr loading and 2 gr maintenance) was added. 1 week later partially response by slightly decrease in vitritis was seen. Then intravitreal clindamycin (1mg/o.1 ml) was injected. The patient responded to treatment dramatically by improvement of visual acuity from HM to 12/40 after 1 week and to 20/20 after 6 weeks. AC and vitreous reactions were resolved.
- **Conclusion:** Intravitreal clindamycin injection can be a promising treatment for resistant ocular toxoplasmosis.

Masoomian, Babak

Skew Deviation Vs Superior Oblique Palsy (A Case Report about Misdiagnosis and Mismanagement)

- **Authors:** Babak Masoomian, Mohammad Reza Akbari, Ali Reza Keshtcar Jafari, Ahmad ameri, Bahram Eshraghi
- **Affiliation:** Tehran University of Medical Sciences, Farabi Eye Hospital
- **Purpose:** We report a case of Skew deviation that underwent inferior oblique myectomy
- **Methods:** This was a noninterventional case report
- **Results:** This case report is about 26-years-old female with chief complain of diplopia and right head tilt. She had history of car accident and hospitalization in ICU two years ago. The patient had history of left I.O Myectomy 1 year ago by general ophthalmologist. After surgery patient’s tilt did not change and diplopia change for the worse. In ophthalmologic examination there was 18 prism exotropia and12 prism hypotropia in left eye.Indirect fundoscopy showed intorsion in OS and extorsion in OD. In Double Maddox rod test she had 15°extorsion which significantly reduced when patient position changed from sitting to supine position. There was a large spot of hemorrhage in site of Midbrain in MRI images. The patient had skew deviation after head injury and due to misdiagnosis she treated as left superior oblique palsy.
- **Conclusion:** Because both skew deviation and trochlear nerve palsy may result from intracranial lesions or trauma, and because some skew deviations may clinically mimic trochlear nerve palsy, differentiating between these 2 conditions can be challenging and also hazardous.
Mazouchi, Marjan

Seasonal Changes in Prevalence of Central Serous chorioretinopathy

- **Authors:** Marjan Mazouchi, Toka Banaee, Nasser Shoeibi, Reza Alizadeh
- **Affiliation:** Khatam Eye Research Center and Hospital
- **Purpose:** To find out whether the incidence of Central serous chorioretinopathy (CSCR) vary during different seasons of the year.
- **Methods:** Descriptive cross-sectional case series.
- **Results:** Through 2011, 79 consecutive cases of acute CSCR with duration of disease less than 6 weeks, in whom the diagnosis was confirmed by optical coherent tomography (OCT) were collected. Fifty four patients (68.4%) were male. In 67% of patients the disease occurred during cold seasons (31.6% in autumn and 35.4% in winter). The disease was more prevalent during winter in men but occurred more frequently during autumn in women. This difference did not reach the significance limit.
- **Conclusion:** Central serous chorioretinopathy seems to be more frequent in cold seasons. This may be a result of the cold weather and the stress it poses on people or a consequence of viral infections which are more prevalent in cold seasons.

Memarzadeh, Sayed Ezatollah

Experiences to Successfully Operate on Patients with Posterior Polar Cataracts

- **Author:** Sayed Ezatollah Memarzadeh
- **Affiliation:** Shahrekord University of Medical Sciences
- **Purpose:** To introduce the preferred surgical techniques in patients with posterior polar cataract, because there is posterior capsular defect in some of them.
- **Methods:** Phacoemulsification was performed under topical anesthesia, clear cornea incision, 5-6 mm capsulorhexis, no hydrodissection but good hydrodeliniation, slow motion Phacoemulsification with low parameters to avoid anterior chamber collapse or over inflations and also avoiding posterior capsule polishing and excessive IOL manipulation during implantation.
- **Results:** Surgery was performed on 26 eyes of 18 patients of 19-54 years old (mean age 29 years) and mean duration of follow up was 8 months (4-20months). One patient developed posterior capsular rupture (%3.85) and 6 patients developed posterior capsular opacity (%23.8). Mean best corrected visual acuity improved from 20/132 to20/44 postoperatively. (p=0.0001)
- **Conclusion:** Phacoemulsification is a safe and effective method to treat posterior polar cataract if special practical points are kept in mind” by the surgeon.
Miraftab, Seyed Mohammad

Effect of Anterior Chamber Depth on the Choice of Intraocular Lens Calculation Formula in Patients with Normal Axial Length

- **Authors:** Seyed Mohammad Miraftab, Hassan Hashemi, Akbar Fotouhi, Mehdi Khazbazkhoob, Farhad Rezvan, Soheila Asgari
- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital, Department of Epidemiology and Biostatistics, School of Public Health, Tehran University of Medical Sciences
- **Purpose:** To examine and compare the accuracy of refractive predictions with SRK II, third generation formulas of Hoffer Q, SRK T, Holladay 1, and 4th generation Haigis formula in cataract patients with normal axial length. This Case series was conducted by reviewing cataract surgery data collected from 309 eyes.
- **Methods:** For analysis, cases were categorized based on their preoperative anterior chamber depth (ACD): ≤3.0, 3.0-3.5, and ≥3.5 millimeters (mm).
- **Results:** MAE was 0.56, 0.52, 0.51, 0.50, and 0.50 diopter (D) with Haigis, Hoffer Q, SRK T, Holladay 1, and SRK II, respectively; predictions with Haigis were significantly less accurate than SRK T (P<0.001) and Holladay 1 (P=0.035). The overall ME with Haigis was -0.23D and only -0.06D in the ACD≤3.5 mm group (P=0.002). With SRK II, overall ME was -0.24D and only -0.09D in the ACD≥3.0 mm group (P=0.004). There were no statistically significant differences between different levels of ACD for Hoffer Q, SRK T, and Holladay 1.
- **Conclusion:** In patients with normal AL (22.0-24.5mm) and ACD≤3.0 mm, SRK II can predict refraction with less error and is preferred to other formulas. Haigis formula is the preferred choice in patients with normal AL and ACD≥3.5 mm.

Miraftab, Seyed Mohammad

Visual and Refractive Results of Myopic LASIK with Two Different Femtosecond Laser Machines

- **Authors:** Hassan Hashemi, Seyed Mohammad Miraftab, Soheila Asgari
- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** Comparison of visual and refractive results with two femtosecond laser machines: FS-200 (Alcon-Wavelight) and LDV crystal (Zeimer) in myopic LASIK.
- **Methods:** In this retrospective study, UCVA, BCVA, and MRSE were studied in 68 eyes from 34 myopic patients in each group that corneal flaps were created with FS-200 and LDV femtosecond lasers in Noor Eye Hospital. These indices evaluated 1 day and 1 month after surgery.
- **Results:** There was no statistical significant difference in term of UCVA, BCVA, and MRSE before surgery. In day one after surgery, these indices were 0.02±0.04 and 0.07±0.12 (P=0.045), 0.00±0.12 and 0.04±0.07 (P=0.013) logMAR, and 0.19±0.33 and 0.33±0.93D in FS-200 and LDV group, respectively. After 1 month, visual acuity mean wasn’t different statistically between groups, but MRSE of FS-200 group (0.01±0.11) was closer to emmetropia than LDV (0.22±0.24) group (P<0.001).
- **Conclusion:** One day after surgery, despite statistically insignificant differences of MRSE, mean of visual acuity of FS-200 group was significantly better than LDV-group. This difference wasn’t apparent after one month, but spherical equivalent of FS-200 group was closer to emmetropia.
Miraftabi, Arezou

The Evaluation of Oxidative Stress Markers in Patients with Glaucoma

- **Authors:** Arezou Miraftabi, Gholamreza Shahsavari, Asghar Mohammadpour
- **Affiliation:** Tehran University of Medical Sciences, Eye Research Center, Rassoul Akram Hospital
- **Purpose:** To clarify the presence of oxidative stress markers in patients with primary open and angle closure glaucoma and compare them with healthy controls.
- **Methods:** 56 patients with primary angle closure, 84 with primary open angle and 80 healthy age match control subjects were included in the study prospectively. Serum samples were obtained to detect the oxidation degradation products Malondialdehyde (MDA) of RBC membrane by Buege and Aust methods and total antioxidants capacity (TAC) by Benzie methods.
- **Results:** Concentration of MDA was significantly increased in patients with POAG and PCAG 295±101 nmol/grHb and 305±123 nmol/grHb respectively compared with 253±86nmol/grHb in controls (p<0.025) the TAC was significantly decreased in glaucoma patients compared with normal subjects (P<0.016).
- **Conclusion:** Our study demonstrated that increase in oxidative stress products may be associated with POAG and PACG.

Miraftabi, Arezou

Glutathione S-Transferase M1 and T1 Genetic Polymorphism In Primary Open Angle Glaucoma

- **Authors:** Arezou Miraftabi, Gholamreza Shahsavari, Fatemeh Kazemi Safa, Reza Zarei
- **Affiliation:** Tehran University of Medical Sciences, Eye Research Center, Rassoul Akram Hospital
- **Purpose:** Comparative study of genetic polymorphism of GSTM1 and GSTT1 deletion genotype (T0M0, T1M0, T0M1) between patients with primary open angle glaucoma and healthy controls to determine any relation of this polymorphisms and glaucoma.
- **Methods:** Genomic DNA from 59 patients with primary open angle glaucoma and 100 healthy age matched subjects was obtained from peripheral blood evaluated by multiplex PCR to determine the prevalence of gene polymorphisms of GSTM1 and GSTT1.
- **Results:** The frequency of GSTM1 and GSTT1 null genotype was higher in glaucoma patients 25(42.4%)and 12(20.3%) respectively compared with 34(34%)and 15(15%)in control.we observed increase in frequency of GSTT0MO in glaucoma patients but these differences were not statistically significant.
- **Conclusion:** In our study we found no association between null genotype of GSTT1 and GSTM1 and risk of open angle glaucoma
Mohammad Rabei, Hossein

Effect of Mitomycin-C on Corneal Endothelial Cells in Advanced Surface Ablation: An Interventional Cohort Study

- **Authors**: Hossein Mohammad Rabei, Farsad Noorizadeh, Ahmad Shojaei
- **Affiliation**: Basir Eye Clinic
- **Purpose**: To evaluate the effect of Mitomycin-C (MMC) on the corneal endothelial cell density (ECD) after advanced surface ablation (ASA).
- **Methods**: In this cohort study, 116 eyes of 58 consecutive patients were followed after ASA for 6 months. All patients underwent ASA using Technolas 217-Z excimer laser (Bausch & Lomb, California, USA). They were divided into 2 groups: group 1 (69 eyes) with ablation depth of more than 65 μm received intraoperative MMC 0.02 % for 30 seconds; group 2 (47 eyes) with ablation depth of 65 μm or less received balanced salt solution (BSS) in the same fashion. Main outcome measure was ECD in 3 and 6 months after surgery.
- **Results**: Mean ECD in group 1 was 2973.99 ± 39.44 before and 2992.60 ± 38.87 cells/mm² six months after surgery (P=0.83). It was 2878.44 ± 59.17 and 2830.94 ± 48.50 cells/mm² in group 2, respectively (P=0.69). Endothelial cell density was not significantly different in any groups (P=0.16 and P=0.61, respectively).
- **Conclusion**: Mitomycin-C for 30 seconds as prophylaxis for corneal haze during advanced surface ablation has no harmful effect on ECD.

Mohammad Rabei, Hossein

Contact Lens Induced Corneal Ulcer, Case Series of a Considerable Risk Factor

- **Authors**: Hossein Mohammad Rabei, Mohadeshe Feizi, Kourosh Sheibani
- **Affiliation**: Imam Hossein Medical Center, Labafinejad Eye Research Center
- **Purpose**: To report the signs, symptoms and visual outcome of 5 patients with contact lens induced corneal ulcer.
- **Methods**: Five patients with soft contact lens induced corneal ulcer referred to ophthalmology department of Imam Hossein Medical Center during the summer of 2011, which purchased contact lenses from beauty shops or beauty salons. After history taking and clinical examination, corneal and conjunctival smear and culture were performed and all patients were admitted and managed with appropriate antibiotic therapy. The signs, symptoms, the results of eye examination and corneal culture were recorded.
- **Results**: The mean age of patient was 19, they were otherwise healthy, and all of them except one had used soft contact lens as cosmetics. Their culture results indicated Pseudomonas in 3 cases, Pneumococcus one case and Acanthamoeba one case. Finally, the patient with Acanthamoeba keratitis underwent urgent keratoplasty due to descemetocele and impending perforation, 2 patients had moderate visual loss due to central corneal scar and the two other cases had a relatively good final visual acuity.
- **Conclusion**: Cosmetic contact lens related corneal ulcer is a considerable sight threatening complication with the young generation being the most population at risk. They may place themselves at a greater risk by purchasing it from beauty shops or beauty salons.
Mohammadi Roozbehani, Mohammad

Effect of Goldman Applanation Tonometry Measurement on Subsequent Goldman Applanation Tonometry

- **Author:** Mohammad Mohammadi Roozbehani
- **Purpose:** To know if Goldman Applanation Tonometry is performed two times in a small length of time does first measurement has any effect on subsequent measurement?
- **Methods:** Sequential cases in a general ophthalmology clinic were examined by same physician and same instrument. Two IOP measurements were performed by Goldman Applanation Tonometer mounted on slit lamp less than 3 minutes apart on left eye. Patient that had contraindications for Applanation tonometry, history of ocular surgery, history of glaucoma, or any significant corneal or anterior segment abnormality were excluded.
- **Results:** 50 cases were included in the study. 35 female and 15 male. Age 17-75. First IOP measurement was 16.18±3.26. Second IOP measurement was 15.64±3.56. The difference between first and second measurement was statistically significant (p value 0.005).
- **Conclusion:** Two IOP measurements in less than 3 minutes causes the second measurement to be lower than the first measurement. But because the difference in IOP is less than 1 mmHg and Goldman tonometer is scaled in 2 mmHg steps and there are other compounding factors in IOP measurement, clinical significance of this change have to be reconsidered.

Mohammadinia, Mohadesheh

Visual Outcomes of Implanting Toric Phakic Intraocular Lens in Eyes with Myopia and Astigmatism: Toric ICL versus Toric Artiflex

- **Authors:** Mohammad Ghoreishi, Mohadesheh Mohammadinia, Bahodoran Maryam
- **Affiliation:** Persian eye Clinic
- **Purpose:** To compare the Toric ICL versus Toric Artiflex Phakic Intraocular Lens (pIOL) for Correction of High Myopia and Astigmatism.
- **Methods:** This prospective clinical trial study consisted of 44 eyes of 22 patients with high myopia and astigmatism. Toric ICLs were implanted into one eye of each patient (group 1) and Toric Artiflex into the fellow eyes (group 2). After 6 months, uncorrected distance visual acuity (UDVA), corrected distance visual acuity (CDVA), manifest refraction, and subjective–patient preference of eye were compared between the two groups.
- **Results:** At 6 months spherical equivalent refraction was -0.41 ± 0.53 and -0.32 ± 0.27 D, and astigmatism error was -0.56 ± 0.52 and -0.59 ± 0.42 D in TICL and T-Artiflex groups, respectively. UDVA was 20/20 or better in 52.6% of the eyes in the TICL group and 50% of eyes in the T-Artiflex group, 90% of the eyes in the TICL group and 86.3% in T-Artiflex group gained 1 or more lines of CDVA after surgery. 40.9% of patients preferred the TICL implanted eye and 45.5%, the T-Artiflex implanted eye. 13.6% of patients had no preference.
- **Conclusion:** There were no significant differences between two groups in visual and refractive outcomes 6 months after surgery.
Mohammadpour, Mehrdad

Customized Photorefractive Keratectomy with Iris Registration for Management of High Astigmatism

- **Authors:** Mehrdad Mohammadpour, Hassan Hashemi, Mahmood Jabbarvand, Firoozeh Rahimi, Amirhooshang Beheshtnejad, Mohammad Nasser Hashemian, Mohammad Reza Fallah Tafti, Mohammad Ali Zare Mehrjerdi
- **Affiliation:** Eye Research Center, Farabi Eye Hospital, Tehran University of Medical Sciences
- **Purpose:** To evaluate the efficacy of photorefractive keratectomy (PRK) by Advanced Personalized Treatment (APT) nomogram for correction of high astigmatism.
- **Methods:** 60 eyes with high astigmatism > 1.50 D were enrolled. PRK was performed with Technolas 217 z by wavefront and iris registration customized ablation.
- **Results:** Preoperatively, the mean sphere was -1.68 ± 2.08 D, mean refractive astigmatism was -3.04 ± 1.05 D and the mean spherical equivalent (SE) was -3.12 ± 1.77 D. While six months postoperatively, the mean sphere was +0.60 ± 0.64 D (p<0.005), the mean cylinder was -0.43 ± 0.46 D (p<0.005) and the mean spherical equivalent was +0.28 ± 0.48 D (p<0.005). Hyperopic overcorrection (≥ +1.0 D) occurred in 5% (3 eyes). Mean of root mean square (RMS) of higher order aberrations shows a rather significant increase (P=0.041), however, the mean of RMS of total eye aberrations shows a significant decrease (P<0.0005). Mean of RMS of spherical aberration (Z [4, 0]) shows no significant change after surgery (P=0.972).
- **Conclusion:** The use of advanced personalized treatment nomogram and iris registration with prophylactic use of mitomycin-C for the treatment of moderate to high astigmatism is a safe and effective modality.

Mohebbi, Massoumeh

Conjunctival Nodules Associated with the Splendore-Hoeppli Phenomenon

- **Authors:** Masoumeh Mohebbi, Mahdy Sharifzadeh
- **Affiliation:** Eye Research Center, Farabi Eye Hospital, Tehran University of Medical Sciences
- **Purpose:** To report a case of allergic conjunctival granuloma
- **Methods:** A 6-yr-old boy was present to clinic with complaint of itching, redness and multiple conjunctival lesions that improved with initial topical steroid but flared up on tapering of drug. He had similar episodes from 8 months ago. Parents mentioned the history of asthma that was under treatment with beclomethasone spray. In slit lamp examination was diffuse heperemia and multilobulated vascularized nodules on bulbar and fornical conjunctiva. Other exam findings were normal.
- **Results:** Laboratory exam for allergic and collagen vascular disorders was negative. In consultation with pediatric respiratory specialist the presence of allergic lung disease was documented. Incisional biopsy of right superior bulbar conjunctival nodule revealed eosinophilic material and aggregation of epithelioid histiocytes and multinucleated giant cells, that was consistent with allergic conjunctival granuloma (splendore-hoeppli phenomenon).
- **Conclusion:** The Splendore- Hoeppli reaction material comprises antigen-antibody complex, tissue debris and fibrin and is a localized immunological response to an antigen-antibody precipitate related to fungi, parasites, bacteria or inert materials. Eye involvement in this process correlated with systemic disease activity and nessesitate appropriate anti inflammatory therapy.
Motahari, Mohammad Mehdi

Comparison of Two Treatments: Laser Therapy and Anti VEGF versus Laser Therapy Alone in Visual Acuity Improvement of Diabetic CSME Patients

- **Author(s):** Mohammad Mehdi Motahari, Abbasali Keshtkar, Ronaka Rashidzade
- **Affiliation:** Golestan University of Medical Sciences
- **Purpose:** To determine the efficacy of combined laser therapy and anti VEGF instead of laser therapy alone for improving visual acuity of diabetic CSME.
- **Methods:** 76 patients of diabetic clinic of GORGAN with CSME and similar macular thickness were selected. Macular thickness was measured with OCT and differences less than 10 micron between two eyes were assumed as similar thickness. In one eye 0.05 CC of Bevacizumab was injected interavitreally and laser treatment (MPC) was done after injection and laser therapy alone was performed in other eye. Six weeks post treatment visual acuity was measured and compared.
- **Results:** There was 76 patients with average age: 57.2 years. Male to female ratio was 0.95. 71 cases had type 2 diabetes and average of duration of disease was 11.3 years. In 58 patients right eye and in 18 patients left eye were treated by combined method of treatment and laser alone was applied in other eye of above. Six weeks post treatment visual acuity had a significant statistical difference between two eyes and combination method had (0.5 +/- 0.25) improvement compared to the laser alone method (0.36 +/- 0.19).
- **Conclusion:** Combined laser and anti VEGF is more effective for improving visual acuity in patients with diabetic macular edema than laser treatment alone.

Movahedan, Hosein

Limbal Stem Cell Transplantation for the Treatment of Gelatinous Drop-like Dystrophy of the Cornea

- **Authors:** Hossein Movahedan, Hamid R. Ardekani, Mohammad H. Nowroozzadeh
- **Affiliation:** Poostchi Ophthalmology Research Center, Shiraz University of Medical Sciences
- **Purpose:** To report 4 consecutive eyes with recurrent Gelatinous drop-like corneal dystrophy that were treated with allograft limbal stem cell transplant.
- **Methods:** In this non-comparative interventional case series, 4 eyes of 3 consecutive patients with recurrent Gelatinous drop-like corneal dystrophy were treated with allograft limbal stem cell transplant. Two eyes underwent concomitant penetrating keratoplasty and the other 2 underwent simultaneous superficial keratectomy. Main outcome measures were spectacle corrected visual acuity, intraocular pressure, and corneal clarity.
- **Results:** The patients’ age ranged from 28 to 63 years. The mean follow-up after surgery was 23±10 months (median, 22 months; range, 12-36 months). Mean logMAR visual acuity was improved from 2.70±0.61 preoperatively to 1.05±0.06 at the last follow-up after surgery (P=0.066). Intraocular pressure was normal in all eyes at baseline and remained within normal limits in all of them during the follow-up time. All corneas remained smooth and clear during the follow-up period with no episode of rejection or recurrence.
- **Conclusion:** The present study provides further evidence that limbal stem cell transplant may be an effective alternative in treating patients with Gelatinous drop-like corneal dystrophy.
**Naderi, Mostafa**

ICCR for Correction of Keratoconus – 24 Months Study

- **Authors:** Mostafa Naderi, Khosrow Jadidi, Shahab Shahverdi, Ali Agha Alishiri
- **Affiliation:** Bina Hospital
- **Purpose:** To evaluate the outcomes of intra corneal continuous ring (ICCR) implantation for keratoconus patients in a 24 month period after surgery
- **Methods:** 235 eyes suffering from moderate to advanced keratoconus without central scar were treated by implantation of ICCR. Patients were evaluated on first week, first month and months 3, 6, 9, 12, 18, 24 postoperatively. In each follow up visit UCVA (uncorrected visual acuity), BCVA (best spectacle corrected visual acuity), refraction and side effects were assessed. A keratometry was performed at month 3&12.
- **Results:** 235 eyes were evaluated from 216 patients (138 men and 78 women) with mean age of 28.42 +/- 2SD (Ranging from 18 to 54). Postoperatively UCVA improved by about 5 decimal lines. This value was about 4 decimal lines of improvement for BCVA. The mean spherical equivalent was 7.12 D before treatment which decreased to 2.25 D postoperatively. There was a 3.29 dioptres decrease in mean k-reading after operation (from 49.01 to 45.72). The main side effects were night vision disturbances and glare. 19 eyes needed further repositioning of the ring in order to achieve optimal results and 28 eyes needed change of ICR.
- **Conclusion:** Outcomes of ICCR implantation demonstrates safety and efficacy of the method for treating moderate to advanced keratoconus over a 24 months period

**Naderi Beni, Afsaneh**

Visual Outcome of Laser In-Situ Keratomileusis for Correction of Residual Astigmatism after Penetrating Keratoplasty: Tissue-Saving Versus Advanced Personalized Treatment

- **Authors:** Seyed Mohammad Ghoreishi, Afsaneh Naderi Beni, Zahra Naderi Beni
- **Affiliation:** Shahrekord University of Medical Sciences
- **Purpose:** To assess the efficacy, predictability, safety, higher-order aberrations (HOAs), and patient satisfaction after tissue-saving Laser in-situ keratomileusis (LASIK) and advanced personalized treatment laser for the correction of residual astigmatism after penetrating keratoplasty (PKP).
- **Methods:** In this Comparative case series sixteen eyes of 16 consecutive patients (spherical equivalent [SE], -6.42 +/- 0.97 diopters [D]) treated with tissue-saving algorithm (Zyoptix) LASIK and 18 eyes of 18 consecutive patients (SE, -3.94 +/- 1.1 D) treated with advanced personalized treatment LASIK, both for residual refractive error enhancement after penetrating keratoplasty. Uncorrected visual acuity (UCVA), best-corrected visual acuity (BCVA), manifest refraction and HOAs by means of Zywave aberrometry were evaluated preoperatively and 6 months after retreatment.
- **Results:** Efficacy indexes were 0.9 for tissue-saving patients and 1.21 for advanced personalized treatment patients. No eyes lost line of BCVA; in the tissue-saving group, 5 eyes gained 1 line and 4 eyes gained > or =2 lines; in the advanced personalized treatment group, 2 eyes gained 1 line and 12 eyes gained > or =2 lines. The advanced personalized treatment group obtained statistically significant lower values of root mean square (RMS) of HO w/o Z400 and Total aberration with 5- and 6-mm pupils compared with the tissue-saving group (P<.05). The level of satisfaction after surgery was the same in the 2 groups.
- **Conclusion:** Advanced personalized treatment LASIK seems to be better than tissue-saving LASIK for retreatments.
Naderian, Gholamali

Effect of Intravitreal Bevacizumab for Treatment of Retinopathy of Prematurity in Stage Progression

- **Authors:** Gholamali Naderian, Hamid Fesharaki, Valleh Sajjadi, Mohammad Ashkan Naderian
- **Purpose:** To investigate the effect and patient selection criteria of bevacizumab in the treatment of retinopathy of prematurity in premature infants in Isfahan
- **Methods:** 53 infants between 2011 and 2012 who received intravitreal injection of bevacizumab (0.625mg) for the treatment of ROP have been investigated. All patients had progression in ROP stage in the same zone during examinations. The effects and outcomes associated with this criteria for patient selection after at least 6 months follow up were analyzed
- **Results:** 64 eyes of 32 infants (21 male and 11 female) were included in the study. Mean gestational age was 28.66 and mean birth weight was 1139.063 g. All of the eyes received injection of IVB. The mean injection time was 37.29 weeks postmenstrual age. There were 32 eyes (16 patients) with zone 1, 68 eyes (34 patients) with zone 2, and 6 eyes (3 patients) with zone 3 which all had progressive ROP stage in those zones. 36 patients were followed up for at least 6 months. 3 eyes (4.1%) required additional injection and 4 eyes (5.5%) required additional laser treatment and all the others showed regression after first injection. There were no complications after injection at all.
- **Conclusion:** IVB injection for treatment of progressive ROP stages demonstrates brilliant outcomes especially in comparison with destructive complications of laser therapy.

Naraghi, Mohsen

Bilateral Blindness by Angiofibroma

- **Authors:** Mohsen Naraghi, Shabnam Mortazavi, Masoud Boroojerdi
- **Affiliation:** Rhinology and Facial Plastic Surgery in Department of Otorhinolaryngology, Head Neck Surgery, Otolaryngology Research center, Department of Ophthalmology, Tehran University of Medical Sciences
- **Purpose:** Juvenile nasopharyngeal angiofibroma (JNA) is a rare benign vascular neoplasm primarily arising from the nasopharynx mostly in adolescent male. The majority of juvenile nasopharyngeal angiofibromas are limited to nasopharynx cavity, but rare aggressive cases invaded the base of skull and orbit have been reported. This report presents the first description of bilateral blindness following the progressive juvenile nasopharyngeal angiofibroma.
- **Methods:** The young male patient was referred for headache, bloody nasal discharge, and visual loss. On examination, widening of nasal bridge and severe proptosis were found. Cranial nerves examination revealed no light perception in both eyes, bilateral VIth cranial nerve palsy and anosmia. CT scan a huge destructive mass eroding skull base and extending bilaterally into the anterior and middle cranial fossae, displacing frontal lobes. The patient underwent combined transtemporal and transoral transpalatal resection of tumor.
- **Results:** Proptosis was relieved and general condition of the patient was improved postoperatively. There was no improvement for I, II, and VIth cranial nerves abnormalities.
- **Conclusion:** Untreated angiofibroma has its potential for bilateral blindness, which is a clinical catastrophe. Late decompression of optic nerve may result in irreversible optic nerve atrophy in these cases.
Naraghi, Mohsen

Delayed Silent Sinus Syndrome and Enophthalmos Following Nasal Surgery

- **Authors:** Mohsen Naraghi, Shabnam Mortazavi, Masoud Boroojerdi
- **Affiliation:** Rhinology and Facial Plastic Surgery in Department of Otorhinolaryngology, Head Neck Surgery, Otolaryngology Research center, Tehran University of Medical Sciences
- **Purpose:** The term silent sinus syndrome was defined as unilateral progressive enophthalmos secondary to the maxillary sinus opacification. Silent sinus syndrome is a rare clinical entity that progresses gradually due to the osteomeatal complex obstruction. Osteomeatal blockage due to the damage of this complex is the most possible cause of maxillary sinus atelectasis.
- **Methods:** We present four patients developed chronic silent sinus syndrome following nasal surgery. There has been only one prior report of silent sinus syndrome presenting after nasal surgery. Despite of this prior report, silent sinus syndrome in our four patients is a first report of delayed silent sinus syndrome following nasal surgery that all were developed more than one year after procedure.
- **Results:** Lateral displacement of the end part of middle turbinate results in obstruction of the osteomeatal and accumulation of secretions in closed sinus cavity. All of the patients had nasal dressing after surgery.
- **Conclusion:** Our hypothesis is that the nasal dressing following nasal surgery may lead to lateralization of the end of middle turbinate. Silent sinus syndrome and enophthalmus can be a potential missed complication of septorhinoplasty which may present several years after surgery.

Naseripour, Masood

The Trend in the Survival of the Patients with Retinoblastoma

- **Authors:** M Naseripour, K Ghasemi Falavarjani, A Sedaghat, R Soudi, H Nazari, AR Irani
- **Affiliation:** Eye Research Center, Rassoul Akram Hospital, TUMS
- **Purpose:** To report the improvement in the survival of the patients with retinoblastoma during a 21 years period.
- **Methods:** Demographic data and survival rates of the patients with retinoblastoma treated from 2007 to 2012 were compared with those were treated during years 2001 to 2007 and 1991 to 2001.
- **Results:** 190 eyes of 139 patents from 1991 to 2001, 156 eyes of 105 patients from 2001 to 2007, and 60 eyes of 40 patients from 2007 to 2012 were studied. The 5-year cumulative survival rates were 69.69%, 83.1%, and 96.6%, respectively.
- **Conclusion:** The survival rate of the patients with retinoblastoma shows a prominent increase during recent years.
Automated Microaneurysm Detection in Fundus Fluorescein Angiography Images

**Authors:** Amir Norouzpour, Alireza Mehdizadreh

**Affiliation:** Eye Research Center, Khatam Al Anbia Eye Hospital, Mashhad University of Medical Sciences

**Purpose:** Early detection of Microaneurysms (MAs) is essential for screening of diabetic retinopathy (DR) and subsequently prevention of vision impairment and blindness.

**Methods:** This study presents a novel and different algorithm for automatic detection of MAs in fluorescein angiography fundus images, based on Radon transform (RT). Selected images consist of 35 training and 85 test images with different stages of DR used in this study. In preprocessing stage, top-hat transformation and averaging filter were applied. The result of top-hat and filtering were subtracted. The aim of processing stage was to detect and localize the vascular lesions related to DR by dividing the whole preprocessed images to multi overlapping sub images (windows) and RT of these sub-blocks. After detecting and masking retinal vascular tree, MAs candidate were detected and validated by using thresholding and application of RT on candidate sub-images.

**Results:** In this study, sensitivity of DR diagnosis was 94%, while sensitivity and specificity of precise MA localization was 92% and 75% respectively.

**Conclusion:** This study addresses a novel method to detect retinal landmarks and lesions for diagnosis of DR. Sensitivity and specificity of this algorithm may provide an acceptable method for screening of DR.

Eye Problems in Deaf Children; a Case-Control Study

**Authors:** Hadi OstadiMoghaddam, Hassan Hashemi, Hanieh Mirhajian Moghddam, Davood Sobhani Rad, AbbasAli Yekta, Javad Heravian, Farhad Rezvan, Mehdi Khabazkhoob

**Affiliation:** Mashhad University of Medical Sciences, Noor Ophthalmology Research Center, Noor Eye Hospital

**Purpose:** To compare the prevalence of refractive errors, amblyopia and strabismus between deaf and normal children.

**Methods:** In this case control study, cases were selected from deaf school children in Mashhad. The control group consisted of children with no hearing problem. The sampling was done utilizing the cluster sampling method. All of the samples underwent refraction, cover test and visual examinations.

**Results:** 254 children in case group and 506 children in control group were assessed. The mean spherical equivalent was 1.7±1.9 D in case group, which was significantly different from the control group (0.2±1.5) (p<0.001). The prevalence of hyperopia was 57.15 and 21.5% in case and control groups, respectively. But myopia was mostly seen in the control group (p=0.007). Mean cylinder was 0.65 ±1.3 D and 0.43±0.62 D in case and control groups, respectively. Logistic regression showed that the chance of Amblyopia was significantly greater in cases.

**Conclusion:** Comparing with children in the same ages, deaf children have much more eye problems; therefore there must be a possible relation between deafness and eye problems. Paying attention to assessing eye health in deaf children may prevent them from adding eye problems to deaf difficulties.
Pakdel, Farzad

Traumatic Optic Neuropathy after Septoplasty: A Case Report and Literature Review

- **Authors:** Farzad Pakdel, Rama Poormatin
- **Affiliation:** Ophthalmology Department, Ophthalmic Plastic Unit, Eye Research Center, Rassoul Akram Hospital, Tehran University of Medical Sciences
- **Purpose:** To report a traumatic optic neuropathy (TON) after attempted endoscopic septoplasty. There are few documented TON reports after endoscopic sinus surgeries. To the best of our knowledge there is no report of TON associated with septoplasty.
- **Methods:** This is a contemporary report of a 28-Year-old Male patient who was found to have no light perception (NLP) in right eye the day after attempted endoscopic septoplasty.
- **Results:** He showed bilateral periorbital echymosis, NLP in right and 20/20 visual acuity in left eye. Relative afferent pupillary defect was present in right eye. Slit lamp examination of anterior segment and dilated fundoscopy revealed no remarkable abnormal findings. Orbital CT scan revealed right ethmoid and sphenoid sinus opacity and optic canal fracture. The patient received intravenous erythropoietin. The patient did not improve in vision and remained NLP after 1 month follow-up.
- **Conclusion:** After this report optic nerve injury can be accounted as the most devastating ophthalmic complication of endoscopic septoplasty with poor prognosis.

Pakdel, Farzad

Immune System Evaluation in an Apparently Healthy Patient with Orbital Mucormycosis

- **Authors:** Farzad Pakdel, Vida Ilkhani, Mohammad Nabavi, Mohsen Bahmani Kashkouli, Niloofar Pirmarzdashty, Gholamhossein Aghaii, Betsa Parsa
- **Affiliation:** Ophthalmology Department, Ophthalmic Plastic Unit, Eye Research Center, Rassoul Akram Hospital, Tehran University of Medical Sciences
- **Purpose:** To report the immune system evaluation and clinical picture and course in a young and apparently healthy patient. The occurrence of orbital mucormycosis in a healthy subject has been very rarely reported. To the best of our knowledge there is no report of a comprehensive immune system evaluation in these subjects.
- **Methods:** A 37-year-old man was referred to our ophthalmic plastic clinic for progressive deterioration of a presumed orbital cellulitis unresponsive to intravenous antibiotics. He had proptosis and severely restricted eye movements in right eye 3 days prior to admission. He had no history of any recent or past for DM or any other systemic disease, drug abuse and medications.
- **Results:** Upon ethmoidal sinus biopsy tissue invasion by non-septate hyphae was detected. A comprehensive immunologic evaluation on oxygen burst system, T-cell and B-cell arms were performed. Serum IgG was found to be in lower limits. Disease was controlled after intravenous amphotericin and exenteration.
- **Conclusion:** Current report showed that invasive orbital mucormycosis can occur in apparently healthy subjects. Also, we showed that despite the absence of past immune deficient status orbital, a temporary immune deficiency may coincide with this fatal fungal infection.
Pakdel, Farzad

Bilateral Optic Nerve Lymphoma Masquerading As Posterior Ischemic Optic Neuropathy

- **Authors:** Farzad Pakdel, Roya Zolfaghari, Mostafa Sultan Sanjari, Mohsen Bahmani Kashkouli
- **Affiliation:** Ophthalmology Department, Rassoul Akram Hospital, Ophthalmic Plastic Unit, Eye Research Center, Tehran University of Medical Sciences
- **Purpose:** To report a very rare case of bilateral lymphomatous acute optic neuropathy, masquerading posterior ischemic neuropathy, with challenging diagnostic and management process.
- **Methods:** Comprehensive clinical, laboratory and imaging studies were performed for a 64 years old woman who was referred to our clinic for sequential sudden visual loss and impression of posterior ischemic optic neuropathy and giant cell arteritis.
- **Results:** At presentation her visual acuity was NLP in right and hand movement in left eye. Dilated fundoscopic exam revealed optic atrophy in right and normal optic disc in left side. Erythrocyte sedimentation rate, a wide array of serologic test, brain MRI and temporal artery biopsy showed no abnormal findings. Orbital MRI showed heretogenous signal abnormalities in the retrobulbar segment of optic nerve. Lumbar puncture and CSF analysis showed pleocytosis, low glucose and high protein. Optic nerve biopsy proved diffuse large B-cell lymphoma. The patient received chemotherapy and orbital radiotherapy. Vision improved to 20/200 in left eye after 1 month.
- **Conclusion:** Optic nerve lymphoma can be confused with a variety of inflammatory and vascular optic neuropathies. Optic nerve biopsy is valuable in diagnosis of optic nerve lymphoma if other diagnostic tests are unrevealing. However, the possibility of decreased vision should be reminded.

Panjtan Panah, Mohammad Reza

Comparison of Central Corneal Thickness Measured By Specular Microscopy and Ultrasound Pachymetry

- **Authors:** Mohammad Reza Panjtan Panah, Mohammad Javad Mohammadi, Ehsan Kazem Nezhad, Seyedeh Fatemeh Mirjani, Sahar Hajipour
- **Affiliation:** Eye research center, Guilan University of Medical Science
- **Purpose:** To compare the central corneal thickness (CCT) measured by Non-Contact Specular Microscopy (NCSM) and Ultra Sound Pachymetry (USP)
- **Methods:** Triplicate measurements of CCT for 146 eyes from 73 patients with normal eyes were taken with NCSM and USP by the same investigator at the same time. After gathering, the data was analyzed by paired T test and Bland & Altman test.
- **Results:** Mean CCT by NCSM and USP was 512.96 ± 30.17 μm and 539.88 ± 29.61μm, respectively that the difference was statistically significant. (p<0.0001) Interclass Correlation Confidence (ICC) and Pearson Correlation Confidence (PCC) of mean CCT by both instruments were 0.808 and 0.953 respectively which were statistically significant. (p<0.0001) Repeatability coefficient (RC) of NCSM and USP were 12.37 and 24.15, respectively, which was statistically significant with USP (p<0.0001), however that was not statistically significant with NCSM. (p<0.594 ) Agreement of two instruments measurements was 26.80 ± 9.53 μm (CI 95%, RC: 18.68) which was statistically significant with bias repeatability. (p<0.0001)
- **Conclusion:** The NCSM provides measurements of CCT that are less than those of USP and are more reproducible both instruments provide reliable measurements; however, they cannot be used interchangeably.
Peyman, Alireza

Visual, Refractive, Topographic, and Wavefront Changes after Pterygium Excision

- **Authors:** Alireza Peyman, Hasan Razmju, Hadi Vaezi
- **Affiliation:** Isfahan University of Medical Sciences
- **Purpose:** To evaluate the effect of pterygium excision on visual acuity, refraction, corneal topography, and wavefront analysis.
- **Methods:** 38 eyes with pterygium lengthier than 3 mm enrolled in this prospective study. Subjects underwent surgical excision of pterygium. Intra-operative application of Mitomycin-C 0.02 % for 60 seconds following irrigation made in all patients. Wound closure accomplished through repair of rotational conjunctival flaps with 8-0 silk stitches. 6 months after surgery patients evaluated regarding changes in visual acuity, refraction, Orbscan topography, and wavefront aberration.
- **Results:** Uncorrected and best corrected LMar acuity was 0.31 +/- 0.26 and 0.19 +/- 0.21 before surgery and 0.14 +/- 0.17 and 0.03 +/- 0.04 after surgery respectively (P<0.001). Spherical equivalent was 0.72 +/- 1.55 and 0.51 +/- 1.11 before and after surgery respectively (P=0.23) and cylinder was 1.89 +/- 1.69 and 0.77 +/- 0.58 diopters (P<0.001). Surgically induced astigmatism was 1.57 +/- 1.83. Orbscan 3mm irregularity was 2.74 +/- 1.18 and 1.70 +/- 0.80 before and after surgery (P<0.001). Higher order wavefront RMS aberration was 0.72 +/-0.46 and 0.38 +/- 0.25 before and after surgery (P<0.001).
- **Conclusion:** Excision of pterygium significantly improved corrected and uncorrected vision, reduced cylinder, and corneal irregularity, and improved wavefront higher order aberrations.

Peyman, Mohammadreza

Retinal Microcirculation and Gestational Diabetes Mellitus

- **Authors:** Mohammadreza Peyman, Azam Bakhtiarì, Visvaraja Subrayan, Alireza Peyman
- **Affiliation:** University of Malaya
- **Purpose:** To study the relation between gestational diabetes mellitus and retinal vessels diameter in pregnancy
- **Methods:** Included were 23 patients with gestational diabetes had been confirmed by Glucose Tolerance Test (GTT) and 28 normal pregnant women matched for age, gestational age and blood pressure. The diameter of the retinal arterioles was measured with a specific computer assisted program and retinal vascular caliber was summarized as central retinal artery (CRAE) and vein (CRVE) equivalents in all eyes.
- **Results:** No significant difference was found in mean (±SD) of CRAE (143.8±12.1 μm vs. 141.0±14.9 μm, P = 0.08) in patients with impaired GTT compared to normal pregnant women but increase in CRVE (224.5±18.9 μm vs. 207±19.4 μm, P = 0.039) in diabetic group was significant. A small reduction with borderline statistical significance in arteriolar diameter in patients with retinopathy in compare with diabetic but retinopathy-free patients (P=0.05).
- **Conclusion:** Dilation of the retinal venular caliber and reduction of arteriolar diameter in patients with gestational diabetes reflecting microvascular changes and may contribute to the pathogenesis of disease. Predictive value of retinal vessels diameter in progression of retinopathy in gestational diabetes mellitus and relation with birth parameters is under investigation.
Pir, Poopak

Photorefractive keratectomy (PRK) in High Myopia

- **Authors:** Hassan Hashemi, Soheila Asgari, Hamidreza Hassani, Poopak Pir
- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** To assess the safety and efficacy of PRK in patients with high myopia
- **Methods:** In this study, 42 Eyes from 21 patients with high myopia (spherical equivalent ≥7.0) underwent PRK. Patients were followed for one year, and the changes in refraction, vision, aberrometry, and contrast sensitivity were evaluated.
- **Results:** Best corrected visual acuity (BCVA) changed from 0.04±0.07 logmar to 0.02±0.05 logmar at the end of 12 months after surgery. This parameter showed meaningful statistical decrease just at the end of the first month after surgery, but not in the other follow-ups. The amount of Coma decreased from 0.65±0.35 to 0.19±0.11, but spherical aberration, Zernike RMS, higher order aberrations changed from 0.07±0.08, 0.33±0.12, and 0.33±0.12 to 0.39±0.18, 1.00±0.49, and 0.98±0.50, respectively (P<0.001). Changes in contrast sensitivity in all levels was not statistically meaningful after one year.
- **Conclusion:** Although Performing PRK in patients with high myopia may induce negative effects on visual quality by increasing higher order aberrations, it has acceptable safety and efficacy, whereas it does not have any negative consequence on BCVA and contrast sensitivity.

Pir, Poopak

Keratometry with 5 Different Techniques: a Study of Device Repeatability and Inter-Device Agreement

- **Authors:** Shiva Mehravaran, Sara Bigdeli, Soheila Asgari, Ashkan Shahnazi, Hassan Hashemi, Poopak Pir
- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** To determine and compare the repeatability of keratometry measurements with the Javal manual keratometer, Topcon automated keratorefractometer, IOLMaster, EyeSys Corneal Analysis System, and Pentacam Scheimpflug Topography System, and determine the agreement of measurements of the latter four devices with the Javal keratometer as the gold standard.
- **Methods:** In this cross-sectional study, 21 people with no history of ocular disease or surgery were examined twice with each device. Minimum, maximum, and average keratometry readings were recorded in diopters (D) for each eye and used in the analyses.
- **Results:** All repeatability coefficients were satisfactorily high. Best repeatability for minimum keratometry and maximum keratometry readings was seen with IOLMaster (95% LoA, -0.23D to 0.19D and -0.31D to 0.32D, respectively). Agreement with Javal manual keratometry was best with Topcon and IOLMaster (95% LoA, -0.67D to 0.28D and -0.57D to 0.38D, respectively) for minimum keratometry readings, and with Topcon for maximum keratometry readings (95% LoA, -0.85D to 0.63D).
- **Conclusion:** Keratometry readings with Topcon, IOLMaster, and Pentacam showed very good agreement with Javal measurements, and inter-device agreements were better than the repeatability of the manual gold standard. However, differences between Javal and EyeSys may not be clinically acceptable.
Evaluation of Anatomic Results and Visual Performance of Big-Bubble and Modified LK Deep Anterior Lammelar Keratoplasty (DALK) In Keratoconus Eyes

Authors: H Khakshoor, S Zarei Ghanavati, R Pourmazar, S Hasanzadeh
Affiliation: Khatam Al Anbia Eye Research Center
Purpose: This study was performed to compare visual outcomes of two techniques of DALK: modified and big-bubble methods.
Methods: In a prospective study, records of 80 eyes (80 patients) who had been undergone DALK between 2009 and 2011 using the Big-Bubble & Modified LK techniques were evaluated. Pre- and 6 months postoperative visual acuity, specular microscopy, orb scan, pentacam and aberrometry findings were assessed and the outcomes of two techniques were compared.
Results: The mean age of patients was 27.61±7.43 years. Six months after surgery, mean BCVA was not significantly different between two groups (p=0.328). After surgery, mean endothelial cell density was significantly higher for patient in modified group (p=0.001). Among orb-scan findings, mean anterior and posterior best fit sphere were different between two groups (p=0.014 and p<0.001 respectively).Abberometric findings showed a significantly lower mean total RMS for modified group in relation to big-bubble group (p=0.001).
Conclusion: Postoperative results of two incorporated DALK techniques showed overall similar visual outcomes. However it seems that modified LK technique provides better results for patients with severe keratoconus who undergo LK.

Corneal Biomechanical Response after Soft Toric Contact Lens Fitting

Authors: Somayeh Radaie Moghadam, Hassan Hashemi, Ebrahim Jafarzadehpur, Mehdi Khabazkhoob
Affiliation: Noor Ophthalmology Research Center, Noor Eye Hospital
Purpose: To determine corneal biomechanical responses one week, one month and three months after wearing soft toric contact lens (S.T.C.L) in normal astigmatic eyes.
Methods: Fifty four healthy subjects (mean age 23.18 ± 4.06) with at least 1D (-1.98 ± 0.808 SD) astigmatism were participated. Keratoconus was ruled out for all the subjects. S.T.C.L (Proclear TM) fitting criteria were fulfilled for the patients. They had not worn S.T.C.L. at all. Before contact lens fitting one week, one month and three months after first visit corneal hysteresis (CH) and corneal resistance factor (CRF) wear measured by Ocular Response Analyzer (ORA) machine.Corneal curvature, keratoconus prediction and evaluation criteria and central corneal thickness (CCT) was measured with Pentacam HR.
Results: One month after S.T.C.L. fitting, CH and CRF was significantly (p=0.013, p= 0.017) decreased from 9.99 ± 1.44 mmHg to 9.59 ± 1.54 mmHg and 9.96 ± 1.71 mmHg to 9.63 ± 1.73 mmHg respectively. However, no significant changes in mean keratometry and CCT were observed by the time.
Conclusion: It seems, S.T.C.L. does not change Mean keratometry and CCT in short term (three months) but, CH and CRF decrease significantly after one month. Therefore, corneal biomechanical parameters should be evaluated in long period of time and in precise manner after S.T.C.L. fitting.
Ramezani, Alireza

Outcomes of Diabetic Vitrectomy with Silicone Oil Injection

- **Authors:** Alireza Ramezani, Hamid Ahmadieh, Amin Rozegar, Masoud Soheilian, Morteza Entezari, Siamak Moradian, Homayoon Nikkhah, Mehdi Yaseri
- **Affiliation:** Ophthalmic Research Center, Shahid Beheshti University of Medical Sciences
- **Purpose:** To evaluate the anatomical and functional outcomes as well as the complications of the eyes with advanced diabetic retinopathy underwent vitrectomy plus silicone oil (SO) injection.
- **Methods:** 236 eyes were included. Mean follow-up time was 54 and 64 weeks in eyes with and without SO removal, respectively.
- **Results:** Complete retinal attachment was achieved in 92.2% and 75.6% of the eyes with and without SO removal. VA improved from 1.92 to 1.65 logMAR. Cataract and ocular hypertension were the most frequent complications.
- **Conclusion:** Although the anatomic outcomes of vitrectomy plus silicone oil injection in diabetic cases is good, visual outcome is not very satisfying. Keeping silicone oil for longer time would not make the prognosis worse. The outcome of diabetic vitrectomy with SO does not depend on the SO type and its time of removal. Having retinal breaks before or during the operation makes the prognosis worse.

Rastegar, Mohammad Jafar

Enlargement of Micro Cornea

- **Author:** Mohammad Jafar Rastegar
- **Purpose:** Treatment of the micro cornea with amniotic membrane for congenital abnormalities of the cornea. For this method of treatment I used the stem cells of the limbus for growing on this amniotic membrane, after that transfer these cells with amniotic membrane to the surface of the eye after pritomy & scraping of the epithelium 360 degrees of the cornea.
- **Methods:** 10 patients has been operated during 3 years, (ages: 9 patients 8-28 years old and 1 patient 50 years old), procedure: 1. Pritomy 360 2. Scraping 3. M.M Graft 4. Measurement 5. Removed of Mucus Membrane graft after 15 days 6. Follow up till 6 mouthes.
- **Results:** Regarding Cosmetic appearance, satisfaction was achieved According to the Vision 2 Pts Hm 1 Pt 5/10 3 Pts 2/10 4 Pts 6ms (cf) Amblyopia one eye.
- **Conclusion:** The stem cells can be transferred with amniotic membrane to the cornea and enlarge the micro cornea.
Razmju, Hasan

Wavefront Guided Versus Tissue Saving Ablation Photorefractive Keratectomy for Treatment of Myopia and Myopic Astigmatism

- **Authors:** Hasan Razmju, Amin Masjedi, Alireza Peyman
- **Affiliation:** Isfahan University of Medical Sciences
- **Purpose:** To compare two methods of surface ablation: wavefront-guided versus tissue saving
- **Methods:** 130 eyes of 65 patients with myopia or myopic astigmatism included in the study. One eye was randomly assigned to tissue saving ablation (TS group) and the other eye to wavefront guided ablation (WF group). Six months after surgery visual acuity, refraction, corneal Haze, and wavefront aberrations were evaluated.
- **Results:** The post-operative mean sphere was -0.54 ± 0.49 and -0.6 ± 0.66 in TS and WF groups respectively and the cylinder was 0.61± 0.39 and 0.47 ± 0.33 (P-value = 0.04). The amount of post-op higher order aberration RMS increase in TS & WF group was 0.026±0.125 and 0.050+ 0.171 micrometer respectively (p = 0.35). The amount of increase of spherical aberration was 0.090 + 0.208 and 0.053 + 0.0148 micrometer in TS and WF groups (P = 0.25). The prevalence of corneal Haze was similar between two groups.
- **Conclusion:** The TS and WF methods are identical in improving the spherical error post operatively but the wavefront-guided PRK has marginally better outcome regarding treatment of astigmatism. The amount of change of coma, spherical aberration and higher order RMS in 5mm zone pupil were identical in two groups.

Razmju, Hasan

Mitomycin-C for Prevention of Corneal Haze after Myopic Photorefractive Keratectomy: A Comparison Between 1% And 2% Concentrations

- **Authors:** Hasan Razmju, Mohamadreza Kooshanmehr, Alireza Peyman
- **Affiliation:** Isfahan University of Medical Sciences
- **Purpose:** To compare Mitomycin-C with concentrations of 1% and 2% for prevention of corneal haziness after myopic photorefractive keratectomy (PRK)
- **Methods:** 85 patients enrolled and in each subject one eye randomly assigned to group 1 and the second eye to the group 2. Patients underwent surface ablation for treatment of myopia. In group 1 after ablation Mitomycin-C 1% (0.1mg/ml) solution applied to cornea, and in group 2 we used Mitomycin-C with concentration of 2% (0.2mg/ml) for 30 seconds before irrigation of the surface.
- **Results:** At 1 month post-operative visits 8.2% of patients in group 1 had grade 2 corneal haze compared to 4.7% in group 2. In months 2, 3, and 6 visits 7.1%, 0%, 0% patients in group 1, and 3.5%, 0%, 0% patients in group 2 had grade 2 of cornea haziness, respectively. No patients in each group had grade 3 or more score of haziness in every group. Although patients seemed to have marginally less corneal haze with 2% concentration of Mitomycin-C the difference between groups was not statistically significant (P>0.05 for all comparisons).
- **Conclusion:** There is no difference between 1% and 2% concentrations of Mitomycin-C regarding prevention of corneal haze formation after PRK.
Razmju, Hasan

Phakic Intraocular Lenses for Correction of Myopia: A Comparison between Iris Claw Rigid and Foldable Lenses

- **Authors:** Hasan Razmju, Erfan Mohamadesmail, Alireza Peyman
- **Affiliation:** Isfahan University of Medical Sciences

**Purpose:** To compare outcome of implantation of phakic intraocular lenses: rigid Artisan versus foldable Artiflex lenses

**Methods:** This prospective clinical study comprised 58 eyes of 29 patients. Eyes randomized to Artisan or Artiflex groups. In first group we had 34 eyes which implanted rigid Artisan phakic lens, and in second group 24 eyes implanted with foldable Artiflex phakic lenses. Patients followed at the 6 month post-op period regarding their refractive and visual outcome.

**Results:** At first post-operative week spherical error was -1.17 +/- 0.76 and -0.55 +/- 0.90 diopters in Artisan and Artiflex groups respectively, P<0.05. Astigmatic error at first week was 1.60 +/- 0.55 and 0.80 +/-0.38 diopters for Artisan and Artiflex groups (P<0.05). The difference for spherical error was still significant until second post-op month and for astigmatic error until third post-op month. At sixth month exam spherical error was -0.66 +/-0.47 and -0.62 +/-0.62 diopters and astigmatic error was 0.74 +/- 0.33 and 0.64 +/- 0.27 in Artisan and Artiflex groups respective (P>0.05).

**Conclusion:** Refractive outcome is better in first and second post-operative months in Artiflex lens but six months after surgery there is no difference regarding refractive outcome between Artisan and Artiflex phakic lenses.

Rezaee, Tahere

Finasteride for Central Serous Chorioretinopathy

- **Authors:** Tahere Rezaee, Masoudreza Ma’naviat
- **Affiliation:** Department of Ophthalmology, Shaheed Sadoughi University of Medical Sciences, Yazd

**Purpose:** To evaluate the safety and efficacy of finasteride, an antiandrogenic medication, as a treatment of chronic ad recurrent central serous chorioretinopathy

**Methods:** Ten patients with chronic and recurrent central serous chorioretinopathy were prospectively enrolled in the case series. Patients were administered finasteride 5 mg finaseride for 3 months after which sudy medication was withheld and patients were observed for 3 months. main outcome measures includede best corrected visual acuity, central macular thickness and subretinal fluid volume as assessed by optical coherence tomography.

**Results:** In seven patients best corrected visual acuity increased, central macular thickness and subretinal fluid volume reached within normal limits. visual acuity improvement was stated by patients two to for weeks after treatment was initiated. visual acuity improvement was parallel to optical coherence tomography (OCT) changing. in other three patients no changes was seen in visual acuity and OCT findings. now we are following them up for 2 months after medication is sopped and no return in symptoms has been found.

**Conclusion:** Finasteride might be considered as a new medication for chronic and recurrent central serous chorioretinopathy. larger and more valid clinical trials are needed to approve or disapprove this hypothesis.
Rezaei, Leila

Fraser Syndrom with Unnecessary Lids Operation

- **Authors:** Leila Rezaei, Hassan Razmju, Feraidoon Farrahi, Farid Daneshgar, Ahmad Jahanbakhshi
- **Affiliation:** Emam Khomeini Eye Research Center, Kermanshah
- **Purpose:** Fraser syndrome (FS) is a very rare autosomal recessive disorder characterized by cryptophthalmos (88%), syndactyly (bilateral 31.6%, unilateral 62%), and kidney malformations (45.3%). Postnatal, most FS individuals die in the first year because of kidney failure and/or upper airway atresias, another feature of the syndrome. We present the first case of complete FS in Iran that survived longer than previous reported cases in literature (age of 14).
- **Methods:** A 14 years old girl with bilateral cryptophthalmos, syndactyly of upper and lower limbs referred to us. In physical examination we noted absent of eyelashes/eyebrows, covering of eyeballs by skin and two oblique line of scar in her lids. Her past medical history was positive for urogenital and cardiac malformation.
- **Results:** She had two stages surgery for opening of fused digits of hands and cryptophthalmus at age 5. In our ocular ultrasonography anterior–posterior diameter of both globs were about 18 mm. Both globs were seen as cavities, lens and anterior segment were not visible and recognizable from posterior segment.
- **Conclusion:** Interestingly, this patient was the first case of complete FS in Iran that survived longer than previous reported cases in literature. This girl has had an unnecessary oculoplastic operation in childhood. We also noted ocular anomalies (for example, small disorganized globs) that are found in complete syndromes and associations with cryptophthalmos, suggesting that imaging modalities may prevent some of unnecessary operation in Fraser syndrome.

Rezaei Kanavi, Mozhgan

Short Term Effects of Extremely Low Frequency Pulsed Electromagnetic Field on Corneas with Alkaline-Burns in Rabbits

- **Authors:** Mozhgan Rezaei Kanavi, Farzin Sahebjam, Faraj Tabeie, Paniz Davari, Aminpasha Samadian, Mehdi Yaseri
- **Affiliation:** Ophthalmic Research Center, Shahid Beheshti University of Medical Sciences
- **Purpose:** To investigate the short term effects of extremely low frequency pulsed electromagnetic fields (ELF-PEMF) on healing of alkaline-burnt corneas in rabbits
- **Methods:** 56 alkaline-burnt corneas from 56 rabbits were categorized into 4 groups: ELF-PEMF therapy with 2mili Tesla (mT)-intensity (ELF 2) for 30 minutes twice daily, ELF-PEMF therapy with 5mT-intensity (ELF 5) for 30 minutes twice daily, medical therapy (MT) and control. Clinical examinations on days 0, 2, 7, and 14, and histopathologic evaluation of the affected corneas were performed and the results were compared between groups.
- **Results:** None of cases developed limbal ischemia, symblepharon formation, Descemetocoele or corneal perforation. Although corneal defect area in ELF groups on day 2 was significantly less than MT, it was not significantly different from MT on days 7 and 14. Rate of significant corneal neovascularization on days 7 and 14 was not statistically different between groups. Keratocyte loss in MT was significantly higher than ELF groups. Mild stromal scar formation was observed more frequently in ELF-PEMF groups than control.
- **Conclusion:** Short term ELF-PEMF therapy is a safe, noninvasive and markedly effective method in healing of alkaline-burnt corneas and its therapeutic results are comparable with those of MT.
Rezaei Shokooh, Ali

Isoametropic Amblyopia in Highly Myopic Children

- **Authors:** Ali Rezaei Shokooh, Abdolhamid Najafi, Farhad Adhami Moghadam
- **Affiliation:** Islamic Azad University, Tehran Medical Sciences Branch
- **Purpose:** To determine the prevalence of isoametropic amblyopia among children with bilateral symmetric high myopia
- **Methods:** 13 children (mean age 6.2 years) with 5-14 D spherical equivalent myopia and < or =1.5 D anisometropia and < or =1.5 D cylinder in both eyes were selected. Children who had VA of < 0.8 (Snellen chart) in both eyes were defined as amblyopia. Best corrected visual acuity (BCVA) in both eyes and other data collected with questionnaire and analyzed statistically to estimate the rate of amblyopia.
- **Results:** Among 13 children who met the criteria, 8 cases (61.50%) showed bilateral isoametropic amblyopia. Two cases (15.38%) had monocular deep amblyopia. Three children (23%) showed no amblyopia in both eyes.
- **Conclusion:** Isoametropic (bilateral symmetric) amblyopia is relatively prevalent in children with bilateral symmetric high myopia, and periodical examination, correction of ametropia and well-timed follow up, is necessary. Keywords: Isoametropia, Amblyopia, ametropic amblyopia, Isoametropic amblyopia.

Rezaeian, Esmaeil

Stevens Johnson Syndrome: Toxic Epidermal Necrolysis Type – A Case Report in Hospital University Kebangsaan Malaysia

- **Authors:** E Rezaeian, AF Sujan, AT Azita, H Norhafizah, M Muhaya
- **Affiliation:** Hospital University Kebangsaan Malaysia
- **Purpose:** To report a case of Stevens Johnson syndrome, a toxic necrolysis type, in a 44 year old gentleman with ocular involvement.
- **Methods:** Case Report
- **Results:** This patient was referring to us by medical department with complaints of eyes redness, discharge, and crusted and peeled eyelids skin. He was unable to open his both eye perfectly. He was admitted to the high dependency ward with symptoms of high grade fever and generalized pruritic skin eruption involving his face, both eyes, mouth, trunk, upper and lower extremities, and genitalia. The skin lesions were starting developed after taking medications from clinic for his fever and cough prior to admission. There was progressive worsening of the rashes with formation of blister and vesicular lesions. There were no previously ocular problems or any history of drugs allergy. In the high dependency ward, he developed severe systemic and ocular complications, including severe mucopurulent discharge, conjunctival pseudomembrane, symblepharon, and corneal epithelial defect. He was treated with topical steroid, antibiotics, lubricants and daily rodding to prevent conjunctival adhesion and symblepharon due to the conjunctival necrotic. He was discharge well with no significant eye problems. A series of photos will be presented showing the progression and the severity of the disease.
- **Conclusion:** Stevens-Johnson syndrome is an episodic, variable, self limited, often recurrent inflammatory disorder and has variable presentation affecting the skin and mucous membrane, which may cause fatal complications. Early referring and ophthalmic evaluation and management are mandatory.
Riazi, Abbas

Introduction a Logarithmic E Chart to Measure Visual Acuity at Any Test Distances

- **Authors:** Abbas Riazi, Behruz Maleki, Fatemeh Riazi
- **Affiliation:** Department of Ophthalmology, School of Medicine, Baqiyatallah University of Medical Sciences
- **Purpose:** E is a commonly used letter for illiterates or those who could not read English to measure visual acuity. The E charts are the mainly used charts in Iran. However, they do not have the standards. They are in different format, fixed for 6 meter test, with or without lighting, with unequal number of letters in each line and different contrasts. As a result, there is an essential need for a standard E chart representing all the standard criteria’s.
- **Methods:** The new design E chart has been developed with CorelDraw® Software. Progression of the letter size is changed geometrically (0.1 Log Unit). Visual acuity rating is given with logarithm of minimum angle of resolution (LogMAR).
- **Results:** This chart consists of 10 rows and each row contains five E in four directions. The space between two letters in each row is equal to the width of the letter at that row, and the distance between two rows is equal to the height of the letter in the row below. This chart is provided on paper based with nearly 100% contrast. Chart can be moved to any distances. To adjust chart scale at other distance there is a table at the bottom of the chart which shows measured vision at that distance. The LogMAR notation also can be converted into traditional snellen notation using another table at the bottom of the chart.
- **Conclusion:** This chart has the same facilities as other standard charts such as Bailey-Lovie, EDTRS and McMonnies.

Riazi Esfahani, Mohammad

Evaluation of Corneal Biomechanical Properties Following Scleral Buckling Using the Ocular Response Analyzer

- **Authors:** Mohammad Riazi Esfahani, Ebrahim Jafarzadehpur, Hassan Hashemi, Elina Ghaffari
- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** To evaluate corneal viscoelastic and intraocular pressure (IOP) changes measured by an Ocular Response Analyzer (ORA) after scleral buckling.
- **Methods:** 56 eyes scheduled for scleral buckling surgery were included. Corneal hysteresis (CH), corneal resistance factor (CRF), corneal-compensated intraocular pressure (IOPcc) and Goldmann-correlated IOP (IOPg) were measured by ORA 3 month postoperatively. In each group, unoperated eye was the control eye.
- **Results:** 27 eyes underwent buckling with encircling elements (group 1) and 29 eyes with segmental sponge (group 2). The mean CRF in group 1 was 8.74 +/-2.05 in cases and 9.19 +/-1.96 in controls. In group 2 the mean CRF was 8.14 +/-2.1 in cases and 9.38 +/-2.1 in controls and the difference was statistically significant (p=0.024). Also, in group 1 there was no significant difference between mean CH of cases and controls, but statistically significant difference between mean CH of cases and controls in group 2(p=0.044).
- **Conclusion:** It would appear that hysteresis and CRF may measure different biomechanical aspects of ocular rigidity and are likely to be useful additional measurement in the assessment of ocular rigidity when measuring intraocular pressure (IOP). This may be of particular importance when trying to correct IOP measurements for increased or decreased ocular rigidity.
**Saber Moghaddam Ranjbar, Ali Akbar**

Prevalence of “Eye Deviations” in Mashhad Population

- **Authors:** Ali Akbar Saber Moghaddam Ranjbar, Mehran Alirezaei
- **Affiliation:** Eye Research Center of Mashhad University of Medical Sciences
- **Purpose:** To determine the incidence of different types of eye deviation in mashhad population
- **Methods:** Prospective population based study
- **Results:** The Detail Will Be Presented.
- **Conclusion:** The Detail Will Be Presented.

**Sabouri, Mohammad Rasul**

Rifampin for Treatment of Acute ICSC

- **Authors:** Mohammad Rasul Sabouri, Kazemnejad
- **Purpose:** Rifampin an-anti TB drug has ability to decrease endogenous steroid production. For this reason, it is being looked at as a possible treatment for ICSC. The aim was to evaluate the efficacy of 4-6 weeks oral Rifampin for the treatment of the lesion.
- **Methods:** A Quasi-experimental clinical trial including 38 PTs with acute ICSC were evaluated. After initial examination including BSCVA, FFA, OCT, 21 PTs were treated with Rifampin 600 mg per day for maximum 42 days (case-group) and 17 PTs were not given any drug (control-group). The patients were reexamined at approximately weeks 2, 4, 6 and OCT was repeated at weeks 4, 6 and if needed, earlier.
- **Results:** In case-group, the difference in best-clear VA at initial and last-visit was significant (P<0.0001) but this difference wasn’t significant in control — group. Whereas mean change in VA between two group was slightly significant (P<0.07). Also mean central macular thickness (CMT) in case-group at initial and last visit was 335.3±39.8 µm and 281.5±70.7 µm (P=0.01) and in control — group 316.06 ±33.9 µm and 294.5 ±16.8 µm (P<0.02) respectively, but in two group, mean change in CMT wasn’t significant.
- **Conclusion:** Rifampin may be of some potential benefit for patients with acute ICSC. These early findings suggest further studies with more samples.

**Sabouri, Mohammad Rasul**

Atypical ICSC

- **Author:** Mohammad Rasul Sabouri
- **Purpose:** To describe a case of Simultaneous Bilateral Bullous Variant of Idiopathic central serous chorioretinopathy (ICSC). In a 26-years old girl
- **Methods:** BSCVA, SLE, Fundus exam, FFA, ICG, and OCT was done at Initial exam and then, OCT was used to re exam the PTs during follow up period
- **Results:** Spontaneous resolution of the lesion occurred within 4-months of Follow up.
- **Conclusion:** A severe variant of ICSC characterized by multiple posterior exudation and bullous RD may affect otherwise healthy young aged female. Recognition of this atypical presentation is important to avoid inappropriate treatment.
Sabzevari, Araz

Comparing Two Pharmaceutical Products of Riboflavin Available in Iran in Terms of Active Materials and Formulation for Corneal Collagen Cross-Linking

- **Authors:** Araz Sabzevari, Hassan Hashemi, Soheila Asgari
- **Affiliation:** Department of Pharmaceutics, Faculty of Pharmacy, Tehran University of Medical Sciences, Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** This research was the first step of a comprehensive study for comparing the effect and efficiency of two formulations of riboflavin 0.1% ophthalmic solution by Sina Darou, Iran, and MedioCross, Medio-Haus Medizinprodukte, Germany, for corneal collagen cross-linking with riboflavin-UVX.
- **Methods:** The amount of active material (riboflavin) of these two products was compared with each other using two methods of fluorometry and high performance liquid chromatography (HPLC). The fluorometry method was carried out precisely based on USP XXX monograph. In the HPLC method, the two products were injected to an HPLC system equipped with C18 column (Macherey-Nagel), UV detector with 70% buffer mobile phase (a solution of sodium salt of hexane sulphonic acid) and 30% HPLC grade methanol five times on 3 different working days.
- **Results:** After calculating AUC of the absorption level of the active materials available in the two products, a statistical comparison was made between the results of the two products through independent sample student’s t-test and the no significant difference was observed.
- **Conclusion:** These two pharmaceutical formulations were the same in terms of the amount of active materials. Currently, to definitely prove the equal effect of these two products, a clinical trial is being conducted on the patients suffering from keratoconus.

Sahihi Oskooei, Mir Ghafar

An Applied Study of Internal Eye Shape of the Iranian Spectacles since the Fourth Millennium B.C. in the Museums of Iran and the World

- **Authors:** Mir Ghaffar Sahihi Oskooei, Mohammad Ghassemi Broumand, HaleH Kangari, Maryam Heydarpour Meymeh, Seyed Mahmoud Tabatabaei Far
- **Affiliation:** Faculty of Rehabilitation Sciences, Shahid Beheshti University of Medical Sciences
- **Purpose:** Since the beginning of history, human has always been facing optical problems & has tried to overcome these problems. By experiences, human learns to use opening, split, shade. This also causes the invention of spectacles with specific eye shape. This study identifies the Iranian spectacles manufactured since the fourth millennium B.C., kept in the museums of Iran and the world to makes a study of their internal eye shapes.
- **Methods:** It was necessary to have a review of books, which represent the artistic works of Iran since ancient time up the present.
- **Results:** Different studies show that in different historical period from the fourth and third millenniums B.C. up to the early millennium A.D., in accordance with the human’ needs, different instruments had been invented such as spectacle, magnifying glass and artificial eye.
- **Conclusion:** Iranians have a long history of familiarity with optical sciences, the eye shapes of the eyeglasses designed since the fourth millennium B.C. onwards had essential features to eradicate optical problems, which eyes may encounter with.
Sakhaee, Mehdi

The Effects of Different Mitomycin-C Exposure Times on the Corneal Endothelium

- **Authors:** H Khakshoor, T Banaei, N Shoeibi, M Sakhaee, S Davoudi, H Ghooshkhanei
- **Affiliation:** Mashhad Eye Research Center, MUMS
- **Purpose:** To assess the effects of different Mitomycin-C exposure times on the corneal endothelial cells
- **Methods:** This cohort study evaluated 160 eyes underwent photorefractive keratectomy (PRK). Patients classified in five groups according to their exposure time to intraoperative Mitomycin-C (10, 20, 30, 45, 60 seconds). The exposure time determined based on ablation depth (<60, 60-80, 81-100, 101-120 and >120 micrometer, respectively). Specular photomicroscopy was taken before operation, 1, 3 and 6 months after PRK. Endothelial cell count and morphologic changes, corneal haze and epithelial healing were assessed outcomes.
- **Results:** 74.1% of patients were female, mean age was 29.07 year. Mean preoperative uncorrected visual acuity (UCVA) was 1.057 LogMAR. UCVA improved to -0.013 LogMAR 6 months postoperative. Spherical equivalent improved from a preoperative mean of -3.30 diopter 0.14 D respectively. A decrease in mean endothelial cell density and an increase in average cell volume were seen 1 month postoperative. (P<0.001) But these changes were not observed at 3 and 6 month follows up, and also such a trend was irrelevant to subgroups (eg. Mitomycin C exposure time). Despite coefficient of variation(CV) which hadn’t change, Pleomorphism showed statistically significant change at all follow up visits compared to preoperative values. But this change was not related to mitomycin exposure time.
- **Conclusion:** Transient change in endothelial cell quantitative and morphologic indices is expected following Mitomycin C exposure. Adjustment of mitomycin exposure time is recommended according to ablation depth.

Sakhaee, Mehdi

Migratory Behavior of Aspergillus Keratitis; a Case Report

- **Authors:** MR Sedaghat, A Fata, M Sakhaee
- **Affiliation:** Mashhad Eye Research Center, MUMS
- **Purpose:** To report a superficial fungal keratitis with migratory behavior
- **Methods:** This presentation describes clinical course and response to different managements of fungal keratitis in a young male.
- **Results:** Our patient was a 33 years old, otherwise healthy Caucasian male who had foreign body sensation on his right eye since 2 days before coming to emergency medical service. There was a metallic foreign body over the corneal infiltration site. After foreign body removal topical antibiotic prescribed, but there was no clinical response. Also, topical fortified drop yield no response. Empirical anti fungal treatment showed mild improvement, but the lesion was crossing over the cornea, then intrastromal voriconazole applied and followed by topical voriconazole 1%. The clinical response was satisfactory and sight saving.
- **Conclusion:** In some cases fungal keratitis may appear as a superficial migrating lesion like dermatologic lesions with active margin. It seems that this presentation may have benign course without involvement of deep ocular tissues.
Sakhaee, Mehdi

Orbital Cellulitis as Initial Clinical Manifestation of Primary Tuberculosis

- **Authors**: AA Saber, M Farzadnia, M Sakhaee
- **Affiliation**: Mashhad Eye Research Center, MUMS
- **Purpose**: To report a case of orbital tuberculosis in a child without pulmonary involvement
- **Methods**: Description of clinical course, diagnostic measures, and response to medication in a child with orbital Tuberculosis.
- **Results**: Our patient has been referred for evaluation of orbital cellulitis. Lack of significant improvement follow in intravenous antibiotic therapy suggested more important pathologies. Incisional biopsy answered all questions; the result in combination with specific tissue staining was compatible with tuberculosis.
- **Conclusion**: Orbital cellulitis may be the first presenting site of tuberculosis. According to this case response to standard anti-TB regimen is expected in orbital tuberculosis

Salehi, Ali

Avastin Drop Effect in Dacryocystorhinostomy (DCR) Failure Rate Prevention

- **Authors**: Ali Salehi, Alireza Zandy
- **Affiliation**: Isfahan University of Medical Sciences
- **Purpose**: Acquired nasolacrimal duct obstruction (NLDO) is one of the most common diseases in ophthalmology. DCR is treatement of choice, fibrovascular tissue formation in osteotomy site is responsible of failure rate. Avastin is antifibrovascular agent.
- **Methods**: 60 case with NLDO. 30 case-30 control-with DCR-In case group avastin+steroid+antibiotic drop and in control G. only steroid and antibiotic drop was used 2 weeks (q6h).
- **Results**: In case group after 3 months was not tearing or mucopurulent discharge and in control group 3 cases had failure (10%).
- **Conclusion**: Avastin drop is an effective drug in DCR failure rate prevention.
Salouti, Ramin

Comparison of Horizontal Corneal Diameter Measurements Using the Orbscan IIz and the Pentacam HR Systems

Authors: Ramin Salouti, Mohammad H Nowroozzadeh, Mohammad Zamani, Maryam Ghoreyshi, Amir R. Khodaman

Affiliation: Poostchi Ophthalmology Research Center, Shiraz University of Medical Sciences, Salouti Eye Research Center, Salouti Private Eye Clinic, Shiraz

Purpose: To compare 2 automated devices for measuring the horizontal corneal diameter (white-to-white [WTW] distance).

Methods: In 101 eyes of 101 healthy refractive surgery candidates, the WTW distance was measured independently by 2 examiners using the Pentacam HR and the Orbscan IIz. Statistical evaluation was performed using paired t-test, Pearson correlation, and the Bland-Altman method for comparison of measurement techniques.

Results: The mean WTW distance measurements were 11.76±0.38 mm with the Pentacam HR, and 11.66±0.37 mm with the Orbscan IIz (P<0.001). The measurements were highly correlated (Pearson correlation coefficient = 0.948; P<0.001). The 95% limits of agreement for Pentacam HR vs. Orbscan IIz were -0.14 to 0.33 mm.

Conclusion: The observed differences in WTW distance readings between the Pentacam HR and the Orbscan IIz is not clinically relevant, and the two devices could be used interchangeably in clinical practice.

Salouti, Ramin

6 Months Results of Femtoassisted DALK using Melles Technique in Keratoconus Patients (Decagonal Versus Mushroom Rim Pattern)

Authors: Ramin Salouti, Mohammad Hosein Nowroozzadeh, Mohammad Zamani, Ali Reza Haftronande, Maryam Ghoreyshi

Affiliation: Department of Ophthalmology, Poostchi Ophthalmic Research Center, Shiraz

Purpose: To evaluate the Early clinical results of deep anterior lamellar keratoplasty (DALK, Melles technique) in keratoconus patients with two different rim patterns

Methods: 25 eyes from 25 patients who underwent Femto-assisted DALK with Decagonal and 25 eyes from 25 keratoconus patients with Mushroom pattern were included in this study. Main outcome measure were patients’ demographics, preoperative and postoperative best spectacle–corrected visual acuities (BSCVAs), Corneal and refraction astigmatism.

Results: Will Present Soon

Conclusion: Deep anterior lamellar Keratoplasty using Melles technique with Femtosecond is safe and effective in treating patients with keratoconus
Samaeili, Azadeh

Comparison between Microscopic & Macroscopic Traumatic Hyphema Due to Blunt Ocular Trauma

Authors: Fereydoun Farrahi, Mostafa Feghhi, Foad Haghi, Ali Kasiri, Aazadeh Samaeili

Affiliation: Department of Ophthalmology, Imam Khomeini Hospital, Ahvaz Jundishapur University of Medical Sciences, Ahvaz

Purpose: To compare complications and clinical course of microscopic and macroscopic hyphema resulting from blunt ocular trauma.

Methods: In a prospective observational case series during the period 21 March 2010 to 20 March 2011 all referred patient with traumatic hyphema to ophthalmic emergency hall of Ahvaz, main city of southwest of Iran that met inclusion criteria were introduced in the study and followed for at least one year.

Results: Of 197 patients with traumatic hyphema 37 patients were excluded by exclusion criteria. 160 patients who completed examinations and follow up protocol were enrolled in the study, 99 patients (61.9%) had microscopic and 61 patients (38.1%) had macroscopic hyphema. In microscopic group 89 patients were male and in macroscopic group 46 patients were female. Clearing the anterior chamber was longer in macroscopic type (P = 0.0001). Intraocular pressure was significantly higher in macroscopic hyphema (P = 0.007). 4 (6/5%) cases of macroscopic hyphema required surgery, but no patient needed surgery in microscopic hyphema (P = 0.02). Concomitant injuries to ocular structures like commotion retina, vitreous hemorrhage, retinal hemorrhage, macular hole and corneal epithelium defects were significantly less in macroscopic group than microscopic group (P = 0.006).

Conclusion: Despite a higher incidence of microscopic hyphema due to blunt ocular trauma, secondary complications are rare and doesn’t need close observation and frequent follow up but require attention to concomitant ocular injury.

Sedaghat, Mohammad Reza

Assessment of the Biomechanical Properties of Form Fruste Keratoconus with Ocular Response Analyzer and its compression with Normal Cornea

Authors: Mohammad Reza Sedaghat, Mehran Zarei Ghanavati, Nafise Bloorian

Affiliation: Eye Research Center, Khatam Al Anbia Eye Hospital, Medicine Faculty, Mashhad University of Medical Sciences

Purpose: In this study ORA measurement in Form Frusta keratoconus patients and normal group were compared with topography and pentacam measurements.

Methods: A case-control study were performed in Toos clinic of Mashhad from 2009 to 2010

Results: There was a positive correlation between CRF with anterior BFS and posterior BFS and a negative correlation with anterior elevation and posterior elevation. There was no correlation between CH with anterior BFS and Post BFS but there was a negative correlation with anterior elevation. There was a positive correlation between CRF with anterior BFS and posterior BFS and a negative correlation with anterior elevation and posterior elevation. There was no correlation between CH with anterior BFS, posterior BFS and posterior elevation but there was a negative correlation with anterior elevation. We found formulas with regression analysis to predict CH and CRF. The mean of CH and CRF was lower in suspected group.

Conclusion: According to the relationship between CH and CRF with some of the topography and Pentacam factors we can use ORA to diagnose the Form Fruste Keratoconus.
Sedghipoor, Mohammad Reza

Corneal Biomechanical Changes after Cross-Linking For Keratoconus

- **Authors:** Mohammad R Sedghipour, Behzad Fallahi Motlagh, Roghaye Pezeshki, Zakaria Pezeshki
- **Affiliation:** Tabriz University of Medical Sciences
- **Purpose:** To investigate the effect of collagen cross-linking (CXL) on the corneal biomechanical properties
- **Methods:** As a prospective study 25 eyes of 20 patients with progressive keratoconus treated by CXL. UDVA, CDVA, SE, CH & CRF were measured
- **Results:** The study showed statistically significant improvement in UDVA & SE, Stable CDVA & reduced keratometry. There was significant decrease in CH, but CRF didn't change.
- **Conclusion:** CXL halts the progression of KC. It also decreases CH

Seyedian, Mohammad Amin

One Year Results of Photorefractive Keratectomy with the Application of Mitomycin-C in the Treatment of Mild to Moderate Hyperopia

- **Authors:** Alireza Habibollahi, Hassan Hashemi, Mohammad Amin Seyedian, Shiva Mehravaran, Soheila Asgari, Sam Habibollahi
- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital, Faculty of Medicine, Tehran University of Medical Sciences
- **Purpose:** To assess the results of photorefractive keratectomy with the application of mitomycin-C in the treatment of mild to moderate hyperopia
- **Methods:** We enrolled 21 patients with up to +5.50 diopters (D) of hyperopia. All 42 eyes were treated with the Concerto (WaveLight) or the Technolas 217z (Bausch & Lomb) excimer lasers.
- **Results:** The mean age of the patients was 44.8 ±11.13 years. Preoperatively, mean manifest refractive spherical equivalent (MRSE) was +2.00 ±0.76 D and mean spherical refractive error was +2.57 ±0.87 (range, +1.25 to +5.50) D. At 12 months after surgery, mean MRSE reached +0.1 ±0.61 D. MRSE was within ±0.50 D of emmetropia in 29 eyes (69%), and 18 eyes (43%) had 20/20 uncorrected distant visual acuity. The best spectacle corrected distant visual acuity (BSCDVA) increased by 2 lines or more in 3 eyes (7.1%) and one line in 2 eyes (4.7%); 31 eyes showed no change, 3 eyes (7.1%) lost 1 line, and 3 other eyes (7.1%) lost 2 lines of BSCDVA. Complications included grade 2 peripheral haze in 2 eyes which was cleared by the end of 12 months.
- **Conclusion:** PRK-MMC appeared as a safe and predictable method for the correction of mild to moderate hyperopia.
Shaeri, Mehdi

Modified Lateral Tarsorrhaphy in Management of the Facial Nerve Paralysis

- **Author:** Mehdi Shaeri
- **Affiliation:** Kashan University of Medical Sciences
- **Purpose:** Patients with complete facial nerve palsy are at risk for complication from exposure of the cornea includes exposure keratitis corneal abrasion and even the loss of vision. A number of surgical techniques have been proposed to manage the eyelid closure. Including gold weight eyelid implant, because of gold weight complications, we propose modified tarsorrhaphy for eyelid paralysis.
- **Methods:** This retrospective study includes 16 eyes of 16 patients from 2004 to 2010. The surgical technique was marking of lateral tarsorrhaphy. Gray line splited and anterior lamella (lash border) excised, suturing of upper and lower limbs of lateral ends of tarsal plates and reformation of canthal angle.
- **Results:** Ten patients of 16 were women and mean age was 42 years (range 21-55) and mean age of men was 44 years (range 23-58). The mean follow up time was 32 months. Exposure keratitis resolved, visual acuity improved and most patients could dispense artificial tears drops and ointments. There were no complication of surgical technique but 4 cases appear recurrence keratitis after 4-6 months.
- **Conclusion:** The modified tarsorrhaphy technique was an effective and simple way in the treatment of facial nerve paralysis.

Shafiee, Masoud

Sixth Nerve Palsy Associated with Cutaneous Leishmaniais: A Case Report

- **Authors:** Mohammad Etezad Razavi, Masoud Shafiee
- **Affiliation:** Khatam Al Anbia Hospital, Mashhad University of Medical Science
- **Purpose:** To describe an unusual presentation of Leishmaniais which have been never reported before
- **Methods:** Case report
- **Results:** A 1.5 years old girl referred to our hospital because of newly onset right eye deviation since several days before. She was suffered from infection to cutaneous leishmaniasis and received several times of local injection of the drug “Glucantime” several days before the ocular symptoms. On examination; there was a healthy child with manifest eye deviation and head rotation to right side. There was a 15 prism diopter of right eye esodeviation. Up to these findings the diagnosis was isolated right sixth nerve palsy with ET about 15 prism diopter on cover and prism test in a child with cutaneous leishmaniasis under the treatment of intralesionally prescribed Glucantime.
- **Conclusion:** This is the first report of 6th nerve palsy in such a case as the complication of treatment with glucantime so neurotoxic side effects of Glucantime should be reevaluated.
Shafiee, Masoud

Measurement of Angle Kappa in Dominant and Nondominant Eye

- **Authors:** Ramin Daneshvar, Masoud Shafiee, Mohammad Khalifeh
- **Affiliation:** Khatam Al Anbia Hospital, Mashhad University of Medical Sciences
- **Purpose:** To measure the angle kappa using Orbscan II in dominant and non dominant eyes in the normal young population
- **Methods:** 100 cases were entered in an observational cross-sectional study. Patients aged 19-41 years referred to the Khatam Eye Hospital were included. Exclusion criteria were history of any intraocular or corneal disease or anomaly or surgery. All measurements were done by the same operator using Orbscan II.
- **Results:** 200 eyes of 100 cases (56 female, 67.9%) with mean age of 28.01±4.97 were evaluated. The averages angle kappa was 4.9±1.23 mm and 4.8±1.16 in dominant and non dominant eye respectively. (P value = 0.397)
- **Conclusion:** There is not a significant difference in angle kappa values in dominant and non dominant eyes and this factor may not play a role in eye dominancy

Shafiee, Masoud

Correlation between Vessel Tortuosity and Central Macular Thickness in Central Retinal Vein Occlusion

- **Authors:** Tooka Banaee, Masoud Shafiee
- **Affiliation:** Mashhad University of Medical Sciences
- **Purpose:** To measure the vessel tortuosity (VT) index automatically in eyes with central retinal vein occlusion (CRVO) and evaluate the relationship of VT and central macular thickness (CMT) in OCT.
- **Methods:** Documents of 11 cases of treatment naïve CRVO who had fluorescein angiography (FAG) and optical coherent tomography were retrieved retrospectively. Then VT index was measured based on Non Subsampled Contourlet Transform (NSCT). Major vessels and their directional information are extracted using NSCT in the first step. Then local vessel curvature is computed using obtained NSCT information and entire vessel network tortuosity is computed by combination of these local curvature values. Then CMT and VT correlation was evaluated using bivariate correlation test.
- **Results:** Mean age of patients was 63.72±7.48. Vessel tortuosity index was from 0.1602 to 0.2987 (0.2418±0.03), and CMT was from 354 to 653 (501.81±104.15). Pearson’s correlation coefficient was 0.692.
- **Conclusion:** There is a correlation between vessel tortuosity index and CMT in CRVO.
Sharifi, Nouraldin

Result Comparison of Sequential Vs Same-Day Simultaneous Collagen Cross-Linking and Topography-Guided PRK for Treatment of Keratoconus

- **Author:** Nouraddin Sharifi
- **Affiliation:** Urmia University of Medical Sciences
- **Purpose:** To evaluate the safety and efficacy of corneal collagen cross-linking (CXL) and topography-guided photorefractive keratectomy (PRK) using a different sequence and timing in consecutive keratoconus cases.
- **Methods:** In this study 325 eyes with keratoconus were divided into two groups. The first group (127 eyes) underwent CXL with later (6 months) topography-guided PRK and the second group (198 eyes) underwent CXL and PRK at the same time. Statistical differences were examined for pre- to postoperative changes in UCVA-BCVA, manifest refraction spherical equivalent (MRSE), keratometry, topography, central corneal thickness, corneal haze, and ectatic progression. Mean follow-up was 36+/−18 months (range: 24 to 68 months).
- **Results:** Statistically, the simultaneous group did better in all fields evaluated, with improvement in UCVA and BSCVA, reduction in spherical equivalent refraction and keratometry, and less corneal haze. In the sequential group all criteria are nearly same as simultaneous group except of spherical equivalent refraction (2.50+/−1.20 D.) that is greater than simultaneous group.
- **Conclusion:** Same-day simultaneous topography-guided PRK and CXL is better than sequential CXL with later PRK in the visual rehabilitation of progressing keratoconus.

Sharifpour, Farideh

Spontaneous Scleral Perforation and Optic Nerve Dural Ectasia in Marfan Syndrome; A Case Report

- **Authors:** Farideh Sharifpour, Mahmoodreza Panahi Bazaz, Mohamad Malekahmadi, Akbar Takhtaeian
- **Affiliation:** Department of Ophthalmology, Ahvaz Jundishapur University of Medical Sciences, Ahvaz
- **Purpose:** To report a patient with Marfan syndrome who had bilateral spontaneous scleral thinning and perforation, and also showed dural ectasia of both optic nerves.
- **Methods:** An 11-year-old girl was referred with progressive myopia and decreased visual acuity. Slit lamp examination revealed an area of scleral thinning measured 1.5×5 mm in supranasal quadrants of both eye adjacent to limbus leading to perforation and spontaneous bleb formation in the left eye. Anterior chamber was extremely shallow especially on the left side and upward subluxations of microspherophakic lenses were observed in both eyes after dilation of the pupils. The optic discs had average size and seemed normal. B scan was performed which showed bilateral cystic dilation of the optic nerves. Orbital MRI revealed bilateral optic nerve dural ectasia.
- **Results:** She underwent lensectomy and vitrectomy with iris fixation IOL implantation in both eyes. After surgery the bleb decreased in size.
- **Conclusion:** Marfan syndrome may be associated with rare or new presentations like optic nerve dural ectasia. This report warrants performing B scan and/or MRI even in the presence of apparently normal optic discs in these patients.
Sharifipour, Farideh

Diurnal Variation in Retinal Thickness Measurement by Optical Coherence Tomography and Corneal Thickness in Diabetics and Normal Individuals

- **Authors**: Farideh Sharifipour, Fereidoon Farrahi, Alireza Moghaddasi, Mehdi Yaseri
- **Affiliation**: Department of Ophthalmology, Ahvaz Jundishapur University of Medical Sciences, Ahvaz
- **Purpose**: To evaluate diurnal variation in macular and nerve fiber layer (NFL) thicknesses, corneal thickness (CCT) and intraocular pressure (IOP) in diabetic patients and normal individuals.
- **Methods**: Eleven diabetic patients aged 45 to 65 years (mean, 54) and 11 normal individuals aged 37 to 71 years (mean, 48) were studied. Several measurements including IOP, macular and NFL thicknesses by Optical coherence tomography (OCT), CCT by ultrasonic pachymeter were done over a single day every 3 hours between 9 AM and 6 PM.
- **Results**: At 12 O’clock IOP was non-significantly lower than other clock hours in both groups. CCT was non-significantly lowest at 6PM in non-diabetics (from 563 to 547 μ) and at 3 PM in diabetics (from 573 to 571). Mean NFL thickness showed non-significant decrease during the day (from 100 to 94 μ in non-diabetics and from 95 to 87 μ in diabetics). Central macular thickness also showed a non-significant diurnal decrease in both groups (from 214 to 205 μ in non-diabetics at 3 PM and from 291 to 264 in diabetics at 6 PM).
- **Conclusion**: In spite of slight decreases in retinal thickness and CCT during the day, the changes are not meaningful between 9 AM and 6 PM.

Shoeibi, Nasser

Retinal Etinal Photoreceptor Dysfunction in Patients with Psoriasis and Vitiligo

- **Authors**: Nasser Shoeibi, Ahmad Reza Taheri, Arash Omid Tabrizi
- **Affiliation**: Vitreous and Retina Research Center, Khatam Al Anbia Eye Hospital, Medicine Faculty, Mashhad University of Medical Science
- **Purpose**: To assess the retinal electrophysiological function in patients with psoriasis and vitiligo
- **Methods**: Standard electroretinogram was performed with RETIport32 ERG device in 38 patients suffering from psoriasis or vitiligo before PUVA therapy.
- **Results**: Seventy-six eyes of 38 patients were evaluated [22 females and 16 males, with the mean age of 31.6±11.5 years (16-54)]. Twenty one patients suffered from vitiligo and 17 from psoriasis. There were statistically significant decrease in the mean amplitude of the scotopic, mesopic and photopic b-wave responses compared to the lower limits of normal population (p<0.01). Mean a-wave photopic response amplitude was significantly higher than the lower limit of normal population (P=0.01). Also N1-P1 interval in 30 Hz flicker response was significantly shorter in the study eyes.
- **Conclusion**: It can be proposed that there is a relation between vitiligo and subclinical retinal cell dysfunction and abnormal ERG recordings because cellular pigment of RPE cell is affected in this entity, however we didn’t expect the psoriatic patients to show this abnormality. Regarding the immunologic basis of both these disorders, it may be unknown factors that can damage retinal/RPE cells in the affected patients. Further investigation is necessary to detect these potential factors.
Soleymani, Abbas

A Case Report of External Ophthalmomyiasis

- **Authors:** Abbas Soleymani, Elham Tayebi, Sajede Omidbakhsh
- **Affiliation:** Babol University of Medical Sciences
- **Purpose:** Ophthalmomyiasis is a very rare disease of the human eye due to the presence of fly larva, where most cases have been reported in the developing countries. External Ophthalmomyiasis is commonly caused by presence of fly larvae Oestrus ovis.
- **Methods:** A forty year old rural woman with good hygiene referred to Rouhani Hospital in June 2011 with red eye, tearing, itching and FB sensation. In slit lamp examination, several fly larvae were seen and all of them have been removed. Topical antibiotic and corticosteroid were prescribed.
- **Results:** Two days later, in the follow up, the eye was asymptomatic.
- **Conclusion:** Timely diagnosis and treatment can reduce the complications, especially internal Ophthalmomyiasis, fly swarm control and use of window screen netting can reduce the disease.

Tabatabaei, Ali

Compare Treatment with IV Ceftazidim-Vancomycin and Oral Ciprofloxacin to Prevention of Endophthalmitis in Patients with Open Globe Injury

- **Authors:** A Tabatabaee, AR Pakrah, H Jafari, M Safizadeh, MR Mansoori, Maserat H
- **Affiliation:** Eye Research Center, Farabi Eye Hospital, Tehran University of Medical Science
- **Purpose:** To compare the efficacy of treatment IV ceftazidim-vancomycin and oral ciprofloxacin to prevent endophthalmitis in patients with open globe injury
- **Methods:** In this prospective comparative randomized interventional study since september 2007 to may 2012 1255 patients with open globe injury were enrolled and divided into 2 groups( IV and oral medication).only patients over 18y , no sign of endophthalmitis, no usage of any medication before admission, no pregnant or breast feeding mothers and no immune compromise patients were included. Follow up visits were scheduled for 1, 2, 3 days and 1week after primary repair.
- **Results:** In this study 2.14 percent-14 from 654-in group IV and 2.16 percent-13 from 601-were diagnosed endophthalmitis over 1 week follow up.
- **Conclusion:** According to these results no difference between IV ceftazidim-vancomycin and oral ciprofloxacin treatments were observed in prevention of endophthalmitis in patients with open globe injury.
Tajbakhsh, Zahra

High Plus Add Prescription for Visually Impaired People Shouldn’t Be Ignored

- **Authors:** Zahra Tajbakhsh, Abbas Riazi, Sherafat Javaheri, Fatemeh Riazi
- **Affiliation:** Poostchi Ophthalmology Research Center, Shiraz University of Medical Sciences, Shiraz
- **Purpose:** The impact of low vision aid to improve vision function has been well appreciated in the current literatures. Since low vision aid is usually not familiar for visually impaired people, therefore the only low vision aid which is more acceptable is microscope (high plus addition). This very simple low vision aid is very effective in performing near tasks. The prescription of high plus addition is usually ignored by eye practitioners in Iran. The Purpose of this study is to highlight the importance of high plus add prescription for near task.
- **Methods:** Patients with vision impairment who referred to Postchi low vision clinic went through eye examination. The visual acuity was measured with and without high plus adds to investigate the impact of this vision aid on functional vision.
- **Results:** Two hundred and sixteen patients aged 37.23±23.42 (79 female, 137 male) attended to this clinic during October 2011-August2012. Of 216 patients, 91 needed addition prescription. The mean of near visual acuity without add was 0.7±0.4 LogMAR. Visual acuity with appropriate add was 0.3±0.2 LogMAR. The improvement of near visual acuity with near addition was significant (P<0.05)
- **Conclusion:** The high plus add is an acceptable and effective low vision aid among visually impaired people. Attention should be paid to prescription of this vision aid.

Tajdini, Afshin

Intraorbital Langerhans Cell Histiocytosis Lesions in Children

- **Authors:** Afshin Tajdini, Mohammad Pipelzadeh, Shervin Ghavami Lahiji
- **Affiliation:** Damascus University, SYRIA
- **Purpose:** Langerhans cell histiocytosis is an uncontrolled monoclonal proliferation of abnormal Langerhans cells, which may infiltrate nearly any tissue or organ. Orbital involvement was reported between 11-20% of LCH cases.
- **Methods:** A retrospective descriptive cross sectional study was done on Langerhans Cell Histiocytosis (LCH) children cases during January 2006 to December 2011, in the Al-Atfal (children) Hospital of Damascus University in Syria. Orbital involvement was studied by multiple radiologic examinations.
- **Results:** Of the sixty seven cases of LCH there were 48 males and 19 females with the male-female ratio of 2.5 and age duration of one month to twelve years old (Average age 2.7 years). Proptosis was seen in 9% and palpebral edema in 4.5% of our cases and in standard AP and lateral skull x-rays only one orbital bones lesion was detected. On CT scan and MRI examinations right intra orbital mass was seen in 6 cases with bone destruction and in 2 cases both sides were involved without bone destruction and overall orbital involvement was 10.4%.
- **Conclusion:** It seems that Orbital Langerhans cell histiocytosis lesions is more common on the right side.
Talebnejad, Mohammad Reza

Botulinum Toxin Injection for the Management of Acute Traumatic Superior Oblique Muscle Palsy

- **Authors:** MR Talebnejad, M Tahmian
- **Affiliation:** Poostchi Ophthalmology Research Center, Shiraz University of Medical Sciences
- **Purpose:** To assess the effectiveness of botulinum toxin (BTA) injection of the inferior oblique muscle for management of acute traumatic superior oblique muscle palsy.
- **Methods:** Ten patients with acute traumatic superior oblique muscle palsy of less than one month duration were treated by the injection of 10-20 units Dysport into the inferior oblique muscle without EMG guidance. The subjective torsion, vertical deviation and inferior oblique muscle overaction were measured before and after the procedure.
- **Results:** The mean age of patients were 25 years old. The cause of palsy was traffic accident in all patients. The mean hypertropia in primary position decreased from 10.6Δ to 2Δ at 6 months after injection. The mean subjective torsion decreased from 5.4Δ to 1.9Δ and means inferior oblique overaction decreased from +2.7 to +0.8. Eight (80%) patients had good results after 6 months and 2 (20%) patients responded poorly and underwent strabismus surgery 6 months later.
- **Conclusion:** In addition to decreased need for further surgical intervention, botulinum toxin injection of the inferior oblique muscle in patients affected by acute traumatic superior oblique palsy of less than one month’s duration may be effective in reducing patient’s complaints such as diplopia in the recovery time.

Talebnejad, Mohammad Reza

A Study of Surgical Results of Monocular Elevation Deficiency

- **Authors:** Mohammadreza Talebnejad, Gholamabbas Roustaei
- **Affiliation:** Poostchi Ophthalmology Research Center, Shiraz University of Medical Sciences
- **Purpose:** The goal of surgery in Monocular Elevation Deficiency (MED) is to improve the position of the affected eye in primary gaze, thereby increasing the field of binocular vision.
- **Methods:** A computer database review was performed among 4773 strabismus patients and 14 with diagnosis of double elevator palsy were enrolled.
- **Results:** Among 14 patients, 10 had only hypotropia and 4 had also horizontal deviation. Preoperative vertical deviation was between 15 and 60 PD (mean 26.1 ± 12.0 PD). 10 patients had positive FDT on elevation. 13 patients had ptosis (6 true and 5 pseudoptosis). Mean postoperative follow up was 28.4 months. 4 patients were underwent Knapp procedure, 9 inferior rectus recession and 1 combined. Mean postoperative outcomes was 6.6 ± 8.9 PD vertical deviation. 9 of them were corrected to ≤ 5 PD of vertical deviation.
- **Conclusion:** Evaluation of FDT at operating room for determination of surgical procedure has principal role.. Transposition procedure can reduce or eliminate the vertical deviation both for distance and near, and has an increased effect over time. The surgical effect of transposition surgery may be enhanced by inferior rectus recession.
Vaezi, Mohammad Hadi

The Effect of Pterygium Surgery on Wavefront Analysis

- **Authors:** Hasan Razmju, Mohammad Hadi Vaezi, Alireza Peyman, Nima Koosha, Zahra Mohammadi, Maryam Alavirad
- **Affiliation:** Isfahan Eye Research Center, Isfahan University of Medical Sciences, Isfahan
- **Purpose:** Pterygium is a common disorder of the ocular surface. It causes vision impairment - usually irregular type astigmatism - through different mechanisms. In addition, it is believed that surgical excision of the pterygium improves visual problems. The appropriate method to investigate irregular astigmatism is using wavefront analysis. This study was aimed to evaluate wavefront analysis pre and post pterygium surgery.
- **Methods:** This study was performed on 32 patients who underwent surgical excision of pterygium in January 2012. Data were recorded and compared after pre and postoperative comprehensive ophthalmologic examinations including uncorrected and best corrected visual acuity, Orbscan, wavefront analysis and autorefraction to figure out the effects of surgery on different parameters.
- **Results:** Comparison of pre and post operative parameters showed that surgical treatment of the pterygium improves numerous parameters significantly including uncorrected and best corrected visual acuity, spherical and cylinder refractive error, higher order aberration, quadrafoli (Z440) and 3 and 5 mm central zone corneal irregularity (all p-values <0.0001). In addition, it improves vertical coma (p=0.003), secondary astigmatism (Z420) (p=0.004) and maximum SimK (p=0.008).
- **Conclusion:** Surgical excision of the pterygium improves visual acuity, refractive errors and most of the corneal topographic indices and wavefront analysis parameters.

Validad, Mohammad Hossein

Comparison of Visual Threshold in Visual Fields of Pre and Post Myopic Photorefractive Keratectomy

- **Authors:** Mohammad Hossein Validad, Hamid R Barkhordari
- **Purpose:** To compare the visual threshold in visual fields of pre and post myopic photorefractive keratectomy.
- **Methods:** 40 patient with inclusion criteria was examinated with slit lamp and pentaacam. Visual field of all patient was done with Humphery visual field II analyser 750 (zeiss) and data registered in computer then all patient have myopic photorefractive keratectomy with standard prk protocol and follow up to 3 month for refraction stability.then patients have another visual field analysis. Data pre and post operation was analysed with paired student t test.
- **Results:** Pre Operation Post Operation P Value Mean Deviation -1.62±0.69 -1.91±0.5 0.054 PSD +1.41±0.17 +1.55±0.28 0.058 Fixation Loss 1.08±0.12 1.23±0.68 0.074 False Pos Error 3.61±0.24 4.01±0.22 0.062 False Neg Error 6.29±0.19 9.86±0.42 0.061 SQ -4.82±1.58 -0.685±0.02 0.005 UCVA 0.35±0.28 0.72±0.21 0.004 BCVA 0.95±0.05 0.98±0.02 0.056.
- **Conclusion:** Uncorrected and best corrected visual acuity post PRK improved which was statistically significant. Central visual acuity showed improvement but mean deviation post PRK deteriorated that shows the post PRK visual field deterioration, although it was not statistically significant.
Vejdani, Amir Hossein

Neglected Advanced Retinoblastoma

- **Authors**: Mohammad Sharifi, Amir Hossein Vejdani
- **Affiliation**: Khatam Al Anbia Eye Research Center, Mashhad University of Medical Science
- **Purpose**: To report late presentation of bilateral retinoblastoma.
- **Methods**: Case report; A 3 years old girl presented with huge orbital mass enlarging over her face on left side. She underwent exentration and histopathologic evaluation. A diagnosis of retinoblastoma was made. This patient had leukocoria of right eye and another intraocular mass. This patient represents a rare form of bilateral retinoblastoma with extensive progression.
- **Results**: To report late presentation of bilateral retinoblastoma.
- **Conclusion**: Although most of bilateral retinoblastoma cases are diagnosed early, there are neglected cases who present at advanced stage.

Vejdani, Amir Hossein

Bilateral Terrien’s Marginal Degeneration and Descemet Detachment

- **Authors**: Hamid Khakshoor, Alireza Eslampoor, Amir Hossein Vejdani
- **Affiliation**: Khatam Al Anbia Hospital, MUMS
- **Purpose**: To report an interesting case of concomitant bilateral Terrien’s marginal Degeneration and spontaneous descemet detachment in a girl with juvenile rheumatoid arthritis.
- **Methods**: It is a case report
- **Results**: A 16-year-old girl with history of juvenile rheumatoid arthritis presented with unilateral decreased vision since one month ago. Slit lamp examination revealed bilateral circumferential peripheral corneal thinning and bulging with vascularization and descemet’s membrane detachment and corneal edema. Corneal lesions were compatible with bilateral circumferential Terrien’s marginal degeneration concomitant with descemet detachment. After intracameral gas injection, descemet reattachment was occurred and corneal edema resolved
- **Conclusion**: To our knowledge, this is the first report of concomitant bilateral Terrien’s marginal degeneration with spontaneous descemet detachment in a patient with juvenile rheumatoid arthritis. Bilateral circumferential involvement, younger age at presentation and total peripheral corneal ectasia as observed in this case are not typical for classic Terrien’s marginal degeneration.
Yaghoubi, Gholamhossein

Methadone Abuse and Retinal Vascular Occlusion

- **Authors:** Gholamhossein Yaghoobi, Behrouz Heydari, Mohammad Hossein Davari, Abbas Hosseini Rad
- **Affiliation:** Birjand University of Medical Science
- **Purpose:** To present two cases of retinal vascular occlusion with addiction of methadone abuse.
- **Methods:** Case report
- **Results:** The first case was a 28-year-old woman complaining of cloudiness over the eye lens and reduced vision in his right eye 3 days before decreasing vision (following cloudiness over the eye lens) she had dizziness and foreign body sensation in her right eye. The patient did not have any pain but after 2 days of starting symptoms she had pain in her right eye. Ophthalmic examination showed central retinal vein occlusion. In her history she reported addiction and using oral methadone for 6 month. The second case is a 56-year-old man with sudden sight loss since the day before. The patient had been on a stable dose of methadone (one tablet per day) from 6 month ago and he reported a 15-year history of cigarette smoking which had quit for 8 month. Ophthalmic examination showed central retinal artery occlusion.
- **Conclusion:** Drug abusers should be screened for vascular retina complications specially, central retinal artery and vein occlusion because of the important role of these vessels in vision.

Yazdani, Shahin

Endothelial Cell Loss Following Trabeculectomy with Mitomycin-C Application before Versus After Scleral Flap Dissection; A Randomized Clinical Trial

- **Authors:** Shahin Yazdani, Saeed Rezai, Mohammad Pakravan, Mohsen Afrouzifar
- **Affiliation:** Ophthalmic Research Center, SBUMS
- **Purpose:** To compare trabeculectomy with MMC application before versus after scleral flap dissection in terms of corneal endothelial cell loss and outcomes of surgery.
- **Methods:** In this RCT, MMC was applied before (group A) or after (group B) scleral flap dissection during trabeculectomy for POAG, PACG, JOAG and PXFG. All procedures were performed using a similar surgical technique and the same concentration of MMC.
- **Results:** 99 eyes of 99 subjects including 72 male and 27 female subjects were operated and followed for 6 months. The study groups were comparable in terms of baseline parameters. Endothelial cell density was significantly but comparably (2±7% versus 1±6%, P=0.182) decreased from baseline in both study groups. Outcomes of surgery were comparable in terms of final IOP (12±6 versus 12±5 mmHg, P=0.459), number of medications (0.2±0.6 versus 0.1±0.4, P=0.334), overall success (87.8 versus 86%, P=0.796) and rate of complications (14.3 versus 16%, P=0.784). Although hypotony was more prevalent in group B (8 versus 2%), the difference failed to reach statistical significance (P=0.376).
- **Conclusion:** MMC application before versus after scleral flap dissection are comparable in terms of corneal endothelial cell damage following trabeculectomy. The outcomes and complications of both types of surgery were also comparable.
Zahedi, Hamid

Ocular Anesthesia

- **Author:** Hamid Zahedi
- **Affiliation:** Tehran University of Medical Sciences, Farabi Eye Hospital
- **Purpose:** Techniques of ocular anesthesia via power point
- **Methods:** Topical anesthesia, Subtenon block, peribulbar block, retrobulbar block
- **Results:** Topical anesthesia is safest than subtenon than peribulbar than retrobulbar block
- **Conclusion:** Topical anesthesia is safest technique in ocular anesthesia

Zahiroddin, Alireza

Eye Movement Desensitization Reprocessing treatment in PTSD patients

- **Authors:** Alireza Zahiroddin, Parvin Dibajnia, Zahra Gheidar
- **Affiliation:** Shahid Beheshti University of Medical Sciences, Tehran, Iran, Behavioral Sciences Center
- **Purpose:** Post Traumatic Stress Disorder (PTSD) is a condition marked by the development of symptoms after exposure to traumatic life event. The impact of PTSD on the patients is widely reported. Among the many treatments, the Eye Movement Desensitization and Reprocessing (EMDR) is a therapy used specifically to treat PTSD. The purpose of this study was to explore EMDR treatment effectiveness in decreasing of tragic events reminding in PTSD patients.
- **Methods:** According to DSM IV criteria 71 PTSD patients in Imam Hossein Hospital of Shahid Beheshhti University of Medical Science were selected. Treatment sessions took place once a week, and the average number of EMDR therapy sessions was five. Treatment ended when the patient reported not having the typical PTSD symptoms on his/her daily life.
- **Results:** EMDR Therapy has caused 66% blurriness in harmful event, 93% getting far and 14% cleared harmful event from mind, 89% mentioned that are senseless about event, 40% said this harmful memory comes to their mind in a scrawl mood.
- **Conclusion:** Our results indicate that this type of therapy is effective to treat many of the PTSD symptoms.
Intraocular Pressure Values Obtained by Three Different Tonometers in Patients with Congenital Glaucoma

**Authors:** M Reza Razeghinejad, Athar Zareei, Yadollah Mehraby, Mohamad Aghazadeh Amiry

**Purpose:** To evaluate the agreement among the measurements of the Ocular Response Analyzer (ORA) and airpuff tonometer with the Goldmann Applanation Tonometer (GAT) and to examine corneal biomechanical properties in primary congenital glaucoma patients with central corneal thickness (CCT).

**Methods:** In this case-control study, IOP was measured with three tonometers in 47 eyes of 25 congenital glaucoma patients. The mean ORA and airpuff IOP values were compared with the GAT-IOP values. Univariate and multiple regression analyses were used to evaluate the associations between IOP and CCT, corneal hysteresis (CH), and corneal resistance factor (CRF).

**Results:** The values obtained by IOPcc (P=0.0001), and IOPg (P<0.0001) were significantly greater than GAT values, on the other hand, the measurements acquired by air-puff compared with GAT was insignificant (p= 0.67). The mean difference for air-puff, IOPcc, and IOPg were 0.397, 5.367, and 4.100 mm Hg, respectively. In multiple regression models, there was no correlation between CCT and IOP readings with air-puff and GAT, suggesting an independence of the measured IOP from corneal thickness. In contrast to CCT, IOP reading of all tonometers were associated with CRF and CH in the multiple regression analysis.

**Conclusion:** Air-puff seems to be the most suitable alternative for measuring IOP in Congenital glaucoma patients where GAT readings are difficult to obtain. With respect to the results of the multiple regression analysis, the CRF was related to the measured IOP.

Correlation between Intraocular Pressure, Corneal Biomechanics and Central Corneal Thickness in Children with Congenital Glaucoma

**Authors:** M Reza Razeghinejad, Ramin Salouti

**Purpose:** To evaluate corneal resistance factor (CRF), corneal hysteresis (CH) and central corneal thickness (CCT) with intraocular pressure (IOP) in children with primary congenital glaucoma in order to exact estimation of IOP.

**Methods:** In this study, 49 eyes of 26 patients (15 boys, 11 girls) in the age group of 6-18 years old was evaluated. Corneal biomechanics, IOPcc and IOPg was measured by ORA, Furthermore CCT and GIOP was evaluated by ultrasonic pachimetry and Goldman application tonometer respectively. In advance, normalization of data was evaluated by kolmogroph-smirenof and then we used pearson correlation and regression analysis.

**Results:** In multiple regression models, there was no correlation between CCT and IOP readings with goldman application tonometer and ORA, suggesting an independence of the measured IOP from corneal thickness. In contrast to CCT, IOP reading of all tonometers were associated with CRF and CH in the multiple regression analysis.

**Conclusion:** It was shown that IOP has weak correlation with CCT in children with congenital glaucoma. With respect to the results of the multiple regression analysis, the CRF was related to the measured IOP. Perhaps CRF and CH should be mentioned as two important factors besides CCT, for exact estimation of IOP.
Zareei, Athar

Comparison between Corneal Biomechanics, Central Thickness and Intraocular Pressure in Patients with Congenital Glaucoma and Aphakic Glaucoma

- **Authors:** M Reza Razeghinejad, Ramin Salouti, Mohammad Banifatemi, Athar Zareei
- **Purpose:** To compare and analyze the correlation between the biomechanical properties of the cornea, intraocular pressure and central Corneal thickness (CCT US) in patients with congenital glaucoma (CG), aphakic glaucoma (AG) and normal controls (N)
- **Methods:** The study population was divided into 3 groups: normal (n=34), congenital glaucoma (n=40) and aphakic glaucoma (n=36) and 3 groups was matched by age and gender. Corneal hysteresis (CH), corneal resistance factor (CRF), IOP corneal-compensated (IOPcc) and goldmann-correlated IOP (IOPg) were provided by the ORA device. CCT US were also measured in each eye by ultrasonic pachymeter.
- **Results:** The CRF and CCT in CG group and AG group was more than normal, on the other hand, The CH in normal group was more than other ones. The Analysis of the mean difference between CH and CRF in all groups showed significant difference between 3 groups (p<0.001).
- **Conclusion:** Although CCT in CG and AG was more than normal group, mean difference between CH and CRF in these two groups were more than normal group.

Zarei Ghanavati, Siamak

Elevated IOP in Patients with Microbial Keratitis

- **Authors:** Siamak Zarei Ghanavati, Masoud Jahani Hivechi, Elmira Baghdasaryan, Arturo Ramirez-Miranda
- **Purpose:** To determine the incidence, risk factor and outcomes of elevated intraocular pressure (IOP) during active microbial keratitis.
- **Methods:** One hundred eighty-four patients with culture- proven microbial keratitis examined from January 2003 through December 2007 were included. High IOP was defined as IOP of 22 mm Hg or higher measured during the episode of active keratitis. The control group consisted of eyes with microbial keratitis whose IOP remained less than 22 mm Hg. Twelve factors were evaluated by univariate and multivariate analyses to determine whether any were associated with increased IOP. The incidence, risk factors, microbial profile, the necessity of therapeutic surgery, time to resolution, and final visual acuity were compared between the high IOP group and the control group.
- **Results:** High IOP (mean, 29.1 mm Hg; range, 22 to 51 mm Hg) occurred in 52 (28%) of 184 patients with active corneal infection. Prior ocular surgery, diabetes mellitus, and ulcer size of 4.0 mm or larger were associated with IOP elevation (P<.013). Surgical interventions were necessary in 19 (39%) of 49 patients in the high IOP group and in 14 (11%) of 129 patients in the control group (P < .001). Time to ulcer resolution was longer in the high IOP group (mean, 50.1 - 53.2 days) than in the control (mean, 31.6 - 42.0 days; P = .005). Final visual acuity of 20/40 or better was achieved by more patients in the control group (47%) than in the high IOP group (20%; P < .001).
- **Conclusion:** Elevated IOP was detected in a significant proportion of patients with active microbial keratitis and was associated with poorer outcomes. Routine IOP check should be performed to avoid possible optic nerve damage.
Zarei Ghanavati, Siamak

Interferon Drop as a Safe Mode of Treating 360 Degrees Conjunctival Insitu Neoplasia (CIN)

- **Authors:** Siamak Zarei Ghanavati, Reza Alizadeh
- **Affiliation:** Khatam Eye Research Center and Hospital
- **Purpose:** To report the effectiveness of interferon drop on 360 degree conjunctival insitu neoplasia (CIN)
- **Methods:** Interventional case series
- **Results:** Five patients (3 Male and 2 female) with an average age of 56 suffering from CIN affecting 360 degrees of limbus were treated by interferon drop four times a day and were evaluated for clinical response and possible side effects. The diagnosis was confirmed with pathology specimens. All cases show complete resolution of symptoms and signs within a month. No side effects were reported, including flu like symptoms. No sign of limbal stem cell deficiency (LSCD) was found in any case.
- **Conclusion:** Many possible options have been proposed for treating CIN and excision is on the top of the list. Facing a 360 degrees CIN is a challenging case where excision will definitely lead to LSCD and dry eye symptoms. Our study results show that interferon drops are noninvasive safe mode of treatment of these cases which can prevent LSCD and is extremely effective in curing these cases.

Zarei Ghanavati, Siamak

Limbal Lacuna: Possible Stem Cell Niche

- **Authors:** Siamak Zarei Ghanavati, Farshid Mohammadi, Arturo Ramirez-Miranda, Sophie X. Deng
- **Affiliation:** Khatam Eye Research Center and Hospital
- **Purpose:** To report a novel structure in limbus
- **Methods:** Observational case series
- **Results:** We found limbal lacunae-like structures in four eyes of four cases, two healthy subjects and two patients with sectoral limbal stem cell deficiency, using the Heidelberg Retina Tomograph III Rostock Corneal Module laser scanning confocal microscope (Heidelberg Engineering GmbH, Dossenheim, Germany). The ages of the healthy subjects were 71 and 79 years, and the ages of the patients with limbal stem cell deficiency were 49 and 80 years. Confocal imaging was performed in all four quadrants: superior, nasal, temporal, and inferior. The causative etiology of sectoral limbal stem cell deficiency was Stevens–Johnson syndrome in one eye and multiple ocular surgeries (cataract surgery with superior main wound and two trabeculectomies) in the other. In these two eyes, the area of vortex keratopathy associated with late fluorescein staining and epithelial thinning was limited to the superior peripheral cornea and the central and inferior cornea epithelia appeared normal.
- **Conclusion:** The presence of limbal lacunae containing normally appearing limbal epithelial cells suggests that this structure serves as an alternative niche for limbal stem cells.
Zarei Ghanavati, Siamak

P16 Gene Methylation as a Marker for Conjunctival Insitu Neoplasia (CIN) diagnosis

- **Authors**: Siamak Zarei Ghanavati, Reza Alizadeh, Neusha Barakati
- **Affiliation**: Khatam Eye Research Center and Hospital
- **Purpose**: To evaluate the sensitivity of P16 gene methylation in CIN cases
- **Methods**: Observational case series
- **Results**: Tissue specimens from 5 cases of CIN were evaluated to detect p16 tumor suppressor gene methylation by polymerase chain reaction (PCR). Patients mean age was 56 and 3 were male. Diagnosis was confirmed by pathology in all cases along with clinical diagnosis. PCR gel running for methylation of p16 gene was positive in all cases.
- **Conclusion**: As long as p16 methylation was positive in all cases with CIN, our study results show that it can help in equivocal cases where diagnosis is in question in order to confirm the diagnosis. It is a non-invasive and precise way to perform PCR on specimens.

Zarei Ghanavati, Siamak

ORA Analysis in Keratoconic versus Post-Femtosecond Laser LASIK

- **Authors**: Siamak Zarei Ghanavati, Habib Jafari, Arturo Ramirez-Miranda, Fei Yu, D. Rex Hamilton
- **Affiliation**: Mashhad Eye Research Center, Khatam Hospital
- **Purpose**: To evaluate and compare corneal biomechanical waveform parameters between keratoconic and post-femtosecond laser in situ keratomileusis (LASIK).
- **Methods**: Comparative case series. The Ocular Response Analyzer was used to obtain the corneal hysteresis (CH), corneal resistance factor (CRF), and 39 biomechanical waveform parameters in manifest keratoconic eyes and post-femtosecond LASIK eyes. Univariate tests were used to assess the difference in each parameter between the 2 groups of eyes. After controlling for central corneal thickness (CCT) and age, a logistic regression model was used to select the parameters most useful in distinguishing between the 2 groups.
- **Results**: After statistically controlling for the differences in CCT and age, 7 parameters were found to be the most useful in distinguishing between groups: aplhf (high frequency noise in the region between peaks [P1 and P2]; P<.0001), w2 (width of P2 at base; P<.0001), dslop1 (down-slope of P1 of wave; P<.0001), aindex (degree of “non-monotonicity” of rising and falling edges of first peak of wave, P<.0001), uslope1 (upslope of the P1 of wave; P<.0001), CH (P<.035), and P1area (area under P1 of wave; P<.006). The area under the receiver operating characteristic curve for the model using these parameters was 0.932.
- **Conclusion**: Differences in multiple biomechanical waveform parameters between the keratoconus and post-LASIK groups suggests that waveform analysis may be useful to differentiate between healthy and diseased biomechanical conditions.
Ziai Ghahnavieh, Hamidreza

Clinical Outcomes after Myoring Implantation in Keratoconic Eyes Using the Femtosecond Technology

- **Authors**: Hamidreza Ziai, Mohammad Ghoreishi, Mohadeseh Mohammadinia, Bahodoran Maryam

- **Affiliation**: Persian Eye Clinic

- **Purpose**: To evaluate the clinical outcomes after implantation of the MyoRing (Dioptex) by means of femtosecond laser technology in eyes with keratoconus.

- **Methods**: Eight eyes of 12 patients with keratoconus (8 male and 4 female), with ages ranges from 20 to 49 years were included in this study. All cases presented with reduced best corrected visual acuity, contact lens intolerance or discomfort, and central corneal thickness of more than 350 μm. MyoRing inserts of 320 μm in thickness and 5 mm in diameter were implanted in all cases into an intrastromal corneal pocket created by means of femtosecond technology. (Uncorrected distance visual acuity) UDVA and Corrected distance visual acuity (CDVA), refraction and corneal topography changes were evaluated during a 6-month follow-up.

- **Results**: A significant improvement in UDVA and CDVA was observed 6 months after surgery, which was consistent with the significant reduction in sphere and cylinder. Furthermore, a significant corneal flattening of a mean value of 6.21 ± 4.35 diopters (D) was found.

- **Conclusion**: Myoring implantation using femtosecond technology is a useful option for the treatment of keratoconus.
Bahmani Kashkouli, Mohsen

Smoothening of Glabellar Lines in Upper Blepharoplasty

- **Authors:** Mohsen Bahmani Kashkouli
- **Affiliation:** Eye Plastic Unit, Eye Research Center, Rassoul Akram Hospital, Tehran University of Medical Sciences
- **Purpose:** To do less or no Botulinum Toxin injection for the frown lines after upper blepharoplasty
- **Conclusion:** A partial long-lasting muscle inactivation is achieved. Temporary forehead numbness should be discussed pre-operatively.

Bahmani Kashkouli, Mohsen

Vector Guided Endoscopic Upper Face Lift

- **Author:** Mohsen Bahmani Kashkouli
- **Affiliation:** Eye Plastic Unit, Eye Research Center, Rassoul Akram Hospital, Tehran University of Medical Sciences
- **Purpose:** To present different vectors of Endoscopic upper face lift.
- **Conclusion:** The main vector of upper face lift should be considered in surgical planning to achieve a higher patients' satisfaction.

Behrouzi, Zohreh

Report of Congenital Iris Cysts in Iran

- **Authors:** Zohreh Behrouzi, Nooshin Khazaei, Omid Azimaraghi
- **Affiliation:** Ophthalmic Research Center of ShahidBeheshti University, Medical Campus
- **Purpose:** To report 21 cases of congenital iris cysts in Iran during the last 15 years
- **Methods:** Under general anesthesia using high magnification of microscope Ethanol irrigation was done for candidate patients. Post operative atropine 0.5% were used for them. follow up intervals were the next day, at 2 to 3 weeks and after 1 month.
- **Results:** Most of the patients have large cysts, and also extension to pupillary area were seen in 12 patients out of 21 cases, 3/21 were observed because of extension to posterior segment, cystectomy was done in one out of 21 cases, Ethanol irrigation was done in 15/21 cases, 2/21 with sever photophobia and tearing and huge iris cyst. For the latest group avastin injections were done.
- **Conclusion:** Congenital iris cysts increased in recent 10 years in Iran comparing to the previous 2 decades, and also they are more resistant to treatment.
Heavy Silicone Oil Removal without Suction Pump; A Surgical Technique

**Authors:** Khalil Ghasemi Falavarjani, Mehdi Modarrezadeh

**Affiliation:** Eye research center, Rassoul Akram Hospital, TUMS

**Purpose:** To present a new surgical technique for heavy silicone oil removal.

**Methods:** In this technique the perfluorocarbone liquid is injected into the eye beneath the silicone oil, and heavy silicone oil is pushed out from the sclerotomy site without using suction pump.

**Results:** This technique was successful for heavy silicone oil removal in our patients. No complications occurred.

**Conclusion:** Using this technique, heavy silicone oil may be removed safely from the eye without the need for suction pump.

A Corneal Inlay for Presbyopia

**Author:** Hassan Hashemi

**Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital

**Purpose:** This video demonstrates Kamra inlay Surgery procedure. Corneal inlays are quickly becoming a mainstay of presbyopic treatment in the recent years. The Kamra inlay (AcuFocus Inc.) is the most favorite inlay, clinically tested and proven to be safe and effective. It has a 1.6 mm central annulus that acts as a pinhole. This small aperture allows unbent rays to filter through the lenticule, providing a broad depth of focus. The surgical technique includes a pocket created by femtosecond laser in the non-dominant eye.

Femtosecond Assisted Lamellar Keratoplasty

**Author:** Hassan Hashemi

**Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital

**Purpose:** This video demonstrates femtosecond laser use in penetrating keratoplasty. The initial application of femtosecond laser was limited to corneal flap creation in LASIK. But advances in both software and hardware technology, enabled pulses to create Different patterns in full thickness cuts. Now femtosecond assisted PK has improved traditional outcomes in transplantation.
Hashemian, Seyed Javad

Femto Laser Assisted DALK

- **Authors:** Seyed Javad Hashemian, Mohammad Ebrahim Jafari
- **Affiliation:** Eye Research Center, Rassoul Akram Hospital, Tehran University of Medical Sciences

Hashemian, Seyed Javad

Phaco+ Toric PCIOL+ Trabectome

- **Authors:** Seyed Javad Hashemian, Mohammad Ebrahim Jafari
- **Affiliation:** Eye Research Center, Rassoul Akram Hospital, Tehran University of Medical Sciences

HodjatJalali, Kamran

Five-Port Bimanual 23-Gauge Vitrectomy for Patient with Complicated Diabetic Retinal Detachment

- **Author:** Kamran Hodjat Jalali
- **Affiliation:** Noor Ophthalmology Research Center, Noor Eye Hospital
- **Purpose:** To describe a surgical method for the treatment of severe complicated diabetic eyes. Combined traction retinal detachment (TRD) and rhegmatogenous retinal detachment (RRD) are among the most challenging scenarios related to proliferative diabetic retinopathy (PDR). Recent development of self-retaining illumination system allows the surgeon to use both hands for instruments and facilitates the dissection of membranes.
- **Methods:** Left eye of a diabetic patient who suffered from PDR complicated by combined TRD-RRD, four sclerotomies created at 10, 2, 4 and 8 o’clock and a self-retaining Xenon chandelier endoillumination fixed at 12 o’clock. Surgery performed with 23 gauge and wide-angle viewing system. The superior sclerotomies were used for surgeon’s hand, the 8 o’clock for infusion line and 4 o’clock for hand-held illumination (was held by an assistant). In this surgical method, use of hand held endoillumination combined with self-retaining endoillumination offer a clear view of retina and also allows the surgeon to use his both hands for surgery.
- **Results:** Anatomical success was achieved in this diabetic eye with minimum intra-operative complication and the operation time decreased.
- **Conclusion:** Diffuse illumination during bimanual 23-gauge vitrectomy enhanced with local illumination is a safe and effective alternative to standard vitrectomy for severe complicated diabetic cases.
Hosseini Tehrani, Mehdi

AMT for Treatment of Giant Fibrocystic Bleb

- **Author:** Mehdi Hosseini Tehrani
- **Purpose:** 62 years old, male, underwent Trabeculectomy 8 years ago. During this period cystic bleb gradually progressed irritation. Patient felt FB Sensation Tear dysfunction and recurrent conjunctivitis were also seen. This video is shown how we can use AMT for Treatment of Giant Fibrocystic bleb.

Jabbarvand, Mahmood

Annular Intracorneal Inlay (A-ICI) Implantation in Rabbit

- **Authors:** Ahmad Salamat Rad, Mahmood Jabarvand
- **Affiliation:** Farabi Eye Hospital
- **Purpose:** A-ICI is a novel inlay designed for treatment of high astigmatism and increasing biomechanical properties of cornea in keratoconus patients. In order to evaluate its safety and biocompatibility, we implanted this device in rabbit cornea using a modified Melles technique.

Khakshour, Hamid

Modified Deep Lamellar Keratoplasty for Treatment of Advanced-Stage Keratoconus with Steep Curvature

- **Authors:** Hamid Khakshoor, Alireza Eslampoor, Amir Hossin Vejdani
- **Affiliation:** Khatam Al Anbia Hospital, MUMS
- **Purpose:** Modified Deep Lamellar Keratoplasty for Treatment of Advanced-Stage Keratoconus with Steep Curvature
Moosavi, Mir Naghi

Excellent Visual Outcome of Magnetic Intraocular Foreign Body Removal in Selected Cases; A Safe and Simple Procedure: 2 Case Reports

- **Authors:** MN Mousavi, M Khalifeh, A Omidtabrizi
- **Affiliation:** Eye research center, Khatam Al Anbia Eye Hospital, Medicine Faculty, Mashhad University of Medical Sciences
- **Purpose:** To report 2 cases of IOFB floating in the vitreous without attachment to retina using magnetic device without pars planavitrectomy
- **Methods:** A 4mm long pars planasclerotomy tangential to the limbus was created at the site of the FB. Magnet was palced so that it was aligned with the largest diameter of the FB and removed it. Wound vitrectomy was done before and after FB removal. Sclerotomy was closed with silk 8-0.
- **Results:** After 3 months, the patients 1 and 2 had a BCVA of 20/20 and 20/25 respectively. The retina was completely attached and no evidence of PVR was seen.
- **Conclusion:** Although pars planavitrectomy is the choice method of the IOFB removal in most of cases, in selected cases that the FB is just close to the eye wall and not attached or imbedded into the retina, and also if it's position is anterior enough so that it is accessible with magnet at pars plana, IOFB removal using magnet can be considered as a safe and simple procedure while it is a very less time and instrument consuming than classic pas planavitrectomy.

Moradian, Khodadad

Lacrimal Gland Repositioning and Blepharoplasty

- **Author:** Khodadad Moradian
- **Affiliation:** Mashhad Branch, Islamic Azad University
- **Purpose:** To evaluate lacrimal gland repositioning and blepharoplasty outcome in a young woman with prolapsed lacrimal gland and dermatochalasia.
- **Methods:** A 26 year old woman underwent lacrimal gland repositioning and blepharoplasty
- **Results:** There was no change in the postoperative result of schirmer’s No.1 test and the patient has been very satisfied
- **Conclusion:** Lacrimal gland repositioning and blepharoplasty is safe, if its done precisely by correct technique and can make the patient feelsatisfied.
Movahedan, Hosein


- **Authors:** Hossein Movahedan, Latifeh Yaqubi, Asadolah Movahedan, Hoodad Movahedan
- **Affiliation:** Poostchi Ophthalmology Research Center, Shiraz University of Medical Sciences
- **Purpose:** To describe a new technique for performing deep anterior lamellar keratectomy (DALK)
- **Methods:** 30 eyes with moderate to severe keratoconus and anterior corneal opacity underwent DALK by this technique from 2007 to 2012. The study is now at the stage of data collection for final result and analysis.
- **Results:** Firstly the cornea trephined through 75 to 80 percent of its thickness at 8 to 8.50 mm zone based on Pentacam thickness map further depending of groove made by trephination achieved by crescent knife from superior part with extreme caution and high magnification to find the deepest possible plane of dissection appearance of fine whitish deep stromal fibers between stroma and descemet membrane is a good guideline simultaneous traction of the corneal button away from the bed will help safe dissection up to the end, the donor issue of the same size sutured in place.
- **Conclusion:** This technique is a safe and effective method with a low risk of perforation due to direct visualization of corneal depth during dissection. There is no risk of cataract and endophthalmitis because it is totally an extra-ocular procedure.

Naraghi, Mohsen

The Easiest Method to Perform Endonasal Endoscopic Dacryocystorhinostomy

- **Authors:** Mohsen Naraghi, Sayed Ziaeddin Tabatabaii
- **Affiliation:** Rhinology and Facial Plastic Surgery in Department of Otorhinolaryngology - Head Neck Surgery, Otolaryngology Research center, Department of Ophthalmology, Tehran University of Medical Sciences
- **Purpose:** In this video, a simple technique on endonasal endoscopic DCR will be presented with results, mentioning the main advantages of it.
- **Methods:** By the final trim of flap up to the remaining sac wall, fine approximating of the edges is done. The latter step is very important in preventing post operative granulation and should be done meticulously. The procedure needs no tenting by lacrimal probe and no stenting of the lacrimal system.
- **Results:** In follow up of patients, ninety five percent of patients feel free of symptoms.
- **Conclusion:** This simple technique diminishes the expenses of powered or laser instrumentation with comparable results. It seems that preserving normal tissues and creating a patent rhinostomy with least surgical trauma and less subsequent scar, plays the most important role to achieve desirable results.
Naraghi, Mohsen

Endoscopic Management of Medial Orbital Abscess

- **Author:** Mohsen Naraghi
- **Affiliation:** Rhinology and Facial Plastic Surgery in Department of Otorhinolaryngology - Head Neck Surgery, Otolaryngology Research Center, Tehran University of Medical Sciences
- **Purpose:** Subperiosteal and intraorbital abscesses are serious complications of paranasal sinus inflammations that are best managed by combination of medical and surgical approaches. Surgical management is mandatory in the case of orbital abscess. Other indications of surgery include loss of visual acuity, gross collection, clinical deterioration and failure to improve within 48 hours of antibiotic treatment. In the absence of these criteria a trial of intravenous antibiotic treatment can be considered with close monitoring of the patient.
- **Methods:** This video presents details of endoscopic management of extensive abscess of the medial orbit of an adolescent with severe swelling of eyelid and chemosis. Obstructed ostiomeatal complex was managed at first to help permanent drainage of involved sinuses. Pearls to success and avoidance of pitfalls will be described in the video.
- **Results:** Post operative recovery was uneventful with very fast resolution of symptoms and signs, so that in 48 hours the eye movements and vision was normal with improvement of chemosis and eyelid swelling.
- **Conclusion:** Endoscopic management of medial abscess has considerable advantages when compared with traditional external approach. Treatment of underlying sinus diseases could cause decrease in recurrence rate. absence of facial scar and fast improvement are other advantages of this method.

Pakdel, Farzad

Endoscopic DCR in Adults and Children

- **Author:** Farzad Pakdel
- **Affiliation:** Ophthalmology Department, Ophthalmic Plastic Unit, Rassoul Akram Hospital, Eye Research Center, Tehran University of Medical Sciences
- **Purpose:** This video shows the endonasal-endoscopic DCR technique specificities in adults and children.

Vejdani, Amir Hossein

DMEK; SCUBA Technique

- **Authors:** Siamak Zarei Ghanavati, Amir Hossein Vejdani
- **Affiliation:** Khatam Al Anbia Hospital, MUMS
- **Purpose:** DMEK; SCUBA technique
Zarei Ghanavati, Siamak

Triple DMEK Procedure: Simultaneous Cataract Surgery and Descemet Membrane Endothelial Keratoplasty (DMEK): Video and Surgical Technique

- **Authors**: Siamak Zarei Ghanavati, Reza Alizadeh
- **Affiliation**: Khatam Eye Research Center and Hospital
- **Purpose**: To show the technique of Triple DMEK, reverse big bubble technique
- **Methods**: Surgical technique and video: Triple DMEK, reverse big bubble technique
- **Results**: Patient is a 45 years old female with a history of Herpes Simplex (HSV) endothelitis and Fuchs like slit lamp examination which was treated for HSV by oral acyclovir 2 gr per day and topical corticosteroid for 2 weeks and was on maintenance treatment by oral acyclovir 400 mg two times per day for 3 months. She suffered from near mature cataract at the same time. Due to the clinical presentation, Triple DMEK procedure was performed for the patient.
- **Conclusion**: Due to our knowledge and literature review, this is the first case of Triple DMEK procedure in Iran and we wish to share our experience with other colleagues.