



Editorial

This issue at a glance



In this issue of JOCO, Moghimi et al present “Qualitative evaluation of anterior segment in angle closure disease using anterior segment optical coherence tomography”. In this prospective, cross-sectional study, one eye of 115 patients with angle closure disease was evaluated using anterior segment optical coherence tomography (AS-OCT). The patients were divided into three subgroups: fellow eye of acute angle closure (FAAC), primary angle closure glaucoma (PACG), and primary angle closure suspect (PAGS). They found a significant difference in the mechanism of this event in the three subgroups ($p = 0.03$). While the majority of FAAC and of PACS eyes had dominantly pupillary block mechanism in the PACG group, this phenomena was observed in only 48.7% of cases ($p = 0.03$). The percentage of exaggerated lens vault and plateau iris was higher in PACG group. FAAC group had the shallowest AC and greater iris curvature and lens vault which were statistically significant compared with the two other groups. The iris thickness was not significantly different in the three groups. They concluded that pupillary block was a major factor in the mechanism of primary acute angle closure glaucoma. Primary angle closure glaucoma is the most frequent cause of blindness in the world¹; therefore, AS-OCT imaging can indicate which eyes should be treated before angle closure occurs.

In the prospective, non-randomized, comparative case series, Tanbakouee and coworkers have presented their investigation “Photorefractive keratectomy for patients with preoperative low Schirmer test value”. They have compared lacrimal secretion with preoperative low and normal Schirmer cases after photorefractive keratectomy (PRK). The patients were divided in two groups. 36 eyes of 36 patients with low Schirmer test were compared with 40 eyes of 40 patients with normal Schirmer test. Post-operatively, the Schirmer values were significantly lower in both groups. However, deterioration was much greater in low Schirmer group ($p = 0.012$). The mechanisms for the post-PRK dryness can be multifactorial, but corneal sensory nerve damage could play a major role.² The authors propose that the patients with dry eye should be thoroughly assessed and treated before PRK.

Zhang and coauthors present “Corneal biomechanics after small-incision lenticule extraction versus Q-value-guided femtosecond laser-assisted in situ keratomileusis”. Their aim was to study the changes in corneal hysteresis and corneal resistance factors following small-incision lenticule extraction (SMILE) versus Q-value-guided femtosecond laser assisted in situ keratomileusis (Q-FS-LASIK). They included 80 eyes of 80 patients in each group. Corneal resistance factors were quantitatively assessed using Ocular Response Analyzer prior to operation and at 1 day, 2 weeks, and 1 and 3 months post-operatively. Both types of surgery were associated with statistically significant decrease in corneal biomechanical properties at day 1 (post-operative) $p < 0.01$, which remained constant during the following 4 months. They found no significant differences in the two techniques. However, SMILE is a new technique avoiding flap-related complications.³

Ghorbanhosseini and colleagues present “Comparison of the visual acuity after photorefractive keratectomy using Early Treatment Diabetic Retinopathy Study Chart and E-chart”. In this cross-sectional study, 70 patients (140 eyes) were included. The visual acuity was obtained after refractive surgery (PRK) by two methods E-chart and ETDRS chart with and without asymmetrical glare by three filters: red, green, and yellow. In all conditions, the visual acuity of both eyes were better with E-chart compared with ETDRS chart ($p < 0.0001$). Visual acuity is dependent on optical and neural perception.⁴ Via the E-chart, the patients detect the direction of the letter which is an optical phenomenon. In ETDRS chart recognition acuity which is a neural perception is added to optical perception which could explain this significant difference of visual acuity taken by two different charts. The authors conclude that the two charts cannot be used interchangeably.

Shokrollahzadeh et al present “Corneal aberration changes after rigid gas permeable contact lens wear in keratonic patients”. Rigid gas permeable (RGP) are believed to change corneal astigmatism by modifying the tear layers.⁵ Here, the authors have investigated the short-term effect of RGP contact lens on corneal aberration in 16 mild to severe keratonic patients. Different aberrations and individual Zernike coefficients have been assessed before and 3 months after fitting RGP lenses by using Pentacam Zernike Analyzer. The corneal aberrations remained unchanged during 3 months.

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Ghassemi and coauthors present “Outcomes of vitrectomy, membranectomy and internal limiting membrane peeling in patients with refractory diabetic macular edema and non-tractional epiretinal membrane”. In this non-comparative, prospective case series, they evaluated the efficacy of vitrectomy, membranectomy, and internal limiting membrane peeling in 12 eyes of 11 patients with refractory diabetic macular edema. All patients had at least two intravitreal injection of bevacizumab and one injection of intravitreal triamcinolone prior to surgery. The mean post-op follow-up of the patients was 13.5 ± 4.48 months. In these cases, although a significant reduction in macular edema was obtained, the visual acuity did not improve significantly. Some authors believe that internal limiting membrane is a contributing factor in development of macular edema in diabetic maculopathy, and its ablation can help to reduce edema.⁶ The reduction of macular edema should be followed by the improvement of visual acuity in apparently normal and non-affected macula. In this case series, the macula of the patients were apparently normal on OCT and ophthalmoscopy, but no significant improvement of the visual acuity was observed, which could be explained by microscopic elements not detectable by SD-OCT.

In this single-blind, prospective clinical trial, Fazel et al have presented “Comparison of subthreshold diode laser micropulse therapy versus conventional photocoagulation laser therapy as primary treatment of diabetic macular edema”. They have compared subthreshold diode laser micropulse with conventional laser photocoagulation in treating 68 eyes (34 in each group) with significant diabetic macular edema. The mean central macular thickness, the mean central macular volume, and the best corrected visual acuity were measured before and 4 months after intervention. They showed that in short terms, subthreshold diode laser was significantly more effective in all the above mentioned parameters.

Rajabi and coworkers present “A novel technique for full thickness medial canthal reconstruction; playing with broken lines”. In this prospective study on 58 patients of mean age of 72.8 years, they introduced a transposition flap technique for reconstruction of the medial canthal region. The patients had all extensive basal cell carcinoma at the medial canthus, and in 30 cases, the lacrimal apparatus was involved which was excised. They applied a modified rhomboid flap⁷ which is used for small defects of less than 1 cm², but here the defects were much larger. Therefore, the reconstruction of the posterior lamella was performed by periosteal flaps and tarsoconjunctival grafts, with the reconstruction of anterior lamella by transposition of multiple full-thickness skin flaps. After 24 months of follow-up, the results were fully acceptable.

Rajavi and coauthors have introduced “The role of Interactive Binocular Treatment system in amblyopia therapy”. They investigated the role of Interactive Binocular Treatment (I-BiTTM)⁸ as a complementary method of patching in amblyopic eyes. I-BiTTM consist of applying red/green filters

by moving targets to induce more foveolar stimulation in amblyopic eyes. 50 unilaterally amblyopic children between 3 and 10 years old were divided into two groups of 25. One group (control) received only patching, and the other (case) received both patching and I-BiTTM. At one month, the improvement of visual acuity was significant in both groups ($p < 0.001$ for case, $p = 0.024$ for control). One month after cessation of I-BiTTM, the difference between the two groups was not significant. They conclude that I-BiTTM seems to be effective in treating amblyopic eyes.

Aghai and coworkers have presented “Behavior disorders in children with significant refractive errors”. Their aim was to evaluate behavioral disorders in patients with various significant refractive errors and compare them with emmetropes. The study was performed in children between 5 and 12 years old. Behavior and childhood mental disorders have been reported in 10–20% of children worldwide.⁹ Here, the authors used the translated Rutter A Scale test¹⁰ to evaluate their cases. 101 children with significant refractive error of all types and 82 emmetropic children were compared. 44 patients (24%) of all these children had behavioral disorders (29.7% with significant refractive errors and 16.9% emmetropes) ($p = 0.043$). The scoring was higher in patients with hyperopia and hyperopia-astigmatism compared to emmetropes ($p = 0.019$, $p = 0.04$, respectively).

Hormoz Chams, MD

Senior Editor

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