

OPHTHALMOLOGY- Medline

1. Indian J Ophthalmol. 2015 May;63(5):466-7. doi: 10.4103/0301-4738.159905.

[Re: Scleral fixation of one piece intraocular lens by injector implantation.](#)

[Can E](#)¹.

Author information:

· ¹Ondokuz Mayıs Üniversitesi, Tıp Fakültesi, Göz Hastalıkları Anabilim Dalı, Samsun, Turkey.

PMID: 26139817 [PubMed - in process]

2. Indian J Ophthalmol. 2015 May;63(5):464-5. doi: 10.4103/0301-4738.159900.

[Re: Long-term results after primary intraocular lens implantation in children operated less than 2 years of age for congenital cataract.](#)

[Sukhija J](#), [Ram J](#)¹, [Gupta N](#), [Sawhney A](#), [Kaur S](#).

Author information:

· ¹Advanced Eye Centre, Post Graduate Institute of Medical Education and Research, Chandigarh, India.

PMID: 26139816 [PubMed - in process]

3. Indian J Ophthalmol. 2015 May;63(5):438-44. doi: 10.4103/0301-4738.159882.

[Positional accommodative intraocular lens power error induced by the estimation of the corneal power and the effective lens position.](#)

[Piñero DP](#)¹, [Camps VJ](#), [Ramón ML](#), [Mateo V](#), [P Rez-Cambrodi RJ](#).

Author information:

· ¹Department of Optics, Pharmacology and Anatomy, Group of Optics and Visual Perception, University of Alicante, Alicante; Department of Ophthalmology, Medimar International Hospital, Alicante; Foundation for the Visual Quality (FUNCAVIS), Alicante, Spain.

Abstract

PURPOSE:

To evaluate the predictability of the refractive correction achieved with a positional accommodating intraocular lenses (IOL) and to develop a potential optimization of it by minimizing the error associated with the keratometric estimation of the corneal power and by developing a predictive formula for the effective lens position (ELP).

MATERIALS AND METHODS:

Clinical data from 25 eyes of 14 patients (age range, 52-77 years) and undergoing cataract surgery with implantation of the accommodating IOL Crystalens HD (Bausch and Lomb) were retrospectively reviewed. In all cases, the calculation of an adjusted IOL power (P IOLadj) based on Gaussian optics considering the residual refractive error was done using a variable keratometric index value (n kadj) for corneal power estimation with and without using an estimation algorithm for ELP obtained by multiple regression analysis (ELP adj). P IOLadj was compared to the real IOL power implanted (P IOLReal , calculated with the SRK-T formula) and also to the values estimated by the Haigis, HofferQ, and Holladay I formulas.

RESULTS:

No statistically significant differences were found between P IOLReal and P IOLadj when ELP adj was used ($P = 0.10$), with a range of agreement between calculations of 1.23 D. In contrast, P IOLReal was significantly higher when compared to P IOLadj without using ELP adj and also compared to the values estimated by the other formulas.

CONCLUSIONS:

Predictable refractive outcomes can be obtained with the accommodating IOL Crystalens HD using a variable keratometric index for corneal power estimation and by estimating ELP with an algorithm dependent on anatomical factors and age.

PMID: 26139807 [PubMed - in process]

4. Eye (Lond). 2015 Jul 3. doi: 10.1038/eye.2015.105. [Epub ahead of print]

[Stability and safety of MA50 intraocular lens placed in the sulcus.](#)

[Kemp PS](#)¹, [Oetting TA](#)².

Author information:

· ¹Department of Ophthalmology, University of Iowa Hospitals and Clinics, Iowa City, IA, USA.

· ²Department of Ophthalmology, University of Iowa Hospitals and Clinics, Iowa City, IA, USA [2]
Department of Ophthalmology, Veterans Administration Medical Center, Coralville, IA, USA.

Abstract

PurposeTo describe the safety and stability of sulcus placement of the MA50 intraocular lens (IOL).
Patients and methodsConsecutive patients with MA50 IOLs placed in the sulcus at the University of Iowa Hospitals and Clinics, Iowa City, Iowa, USA, from 1997 to 2012 were identified. Inclusion criteria included patients with over 4 weeks of follow-up data. AEL was compared with incidence of IOL decentration using a two-tailed Student's t-test.
ResultsFifty eyes of 49 patients meeting the inclusion criteria were identified. Four weeks post-operatively, the average best-corrected visual acuity was 20/30. IOL decentration occurred in 14% of patients; patients with decentered IOLs had a significantly longer average AEL (25.37 mm) than patients whose IOL remained centered (23.94 mm, $P=0.017$). Other complications included uveitis-glaucoma-hyphema syndrome

(12%), iritis (8%), and glaucoma (6%). There were no cases of pigment dispersion syndrome or need for lens exchange. Twelve eyes (24%) had intra-operative optic capture by the anterior capsule, none of which had post-operative decentration. Conclusion The MA50 IOL is a reasonable, stable option for placement in the sulcus, with a low-risk profile; however, in eyes with longer AEL and presumably larger anterior segment, surgeons should consider placing an IOL with longer haptic distance than the MA50 to maintain centration. Optic capture of the MA50 IOL by the anterior capsule should be considered for longer eyes, as it is protective against decentration. Eye advance online publication, 3 July 2015; doi:10.1038/eye.2015.105.

PMID: 26139047 [PubMed - as supplied by publisher]

5. Biomed Opt Express. 2015 Apr 16;6(5):1738-48. doi: 10.1364/BOE.6.001738. eCollection 2015.

[Assessment of imaging with extended depth-of-field by means of the light sword lens in terms of visual acuity scale.](#)

[Kakarenko K](#)¹, [Ducin I](#)¹, [Grabowiecki K](#)², [Jaroszewicz Z](#)³, [Kolodziejczyk A](#)¹, [Mira-Agudelo A](#)⁴, [Petelczyc K](#)¹, [Skladowska A](#)⁵, [Sypek M](#)⁶.

Author information:

- ¹Faculty of Physics, Warsaw University of Technology Koszykowa 75, 00-662 Warsaw, Poland.
- ²CIM-mes Projekt sp. z o.o., Al. Jerozolimskie 125/127 loc. 503, 02-017 Warsaw, Poland.
- ³Faculty of Physics, Warsaw University of Technology Koszykowa 75, 00-662 Warsaw, Poland ; Institute of Applied Optics, Kamionkowska 18, 03-805 Warsaw, Poland.
- ⁴Grupo de Óptica y Fotónica, Instituto de Física, Facultad de Ciencias Exactas y Naturales, Universidad de Antioquia UdeA, Calle 70 No. 52-21, Medellín, Colombia.
- ⁵Faculty of Physics, Warsaw University of Technology Koszykowa 75, 00-662 Warsaw, Poland ; Laboratory of Visual System, Department of Neurophysiology, Nencki Institute of Experimental Biology, Pasteura 3, 02-093 Warsaw, Poland.
- ⁶SKA Polska sp. z o.o., Al. Jerozolimskie 125/127 room 406, 02-017 Warsaw, Poland.

Abstract

We present outcomes of an imaging experiment using the refractive light sword lens (LSL) as a contact lens in an optical system that serves as a simplified model of the presbyopic eye. The results show that the LSL produces significant improvements in visual acuity of the simplified presbyopic eye model over a wide range of defocus. Therefore, this element can be an interesting alternative for the multifocal contact and intraocular lenses currently used in ophthalmology. The second part of the article discusses possible modifications of the LSL profile in order to render it more suitable for fabrication and ophthalmological applications.

PMID: 26137376 [PubMed]

6. Genet Mol Res. 2015 Jun 18;14(2):6617-24. doi: 10.4238/2015.June.18.4.

[Clinical features and treatment of endophthalmitis after cataract surgery.](#)

[Zhu J](#)¹, [Li ZH](#)².

Author information:

- ¹Department of Ophthalmology, The First Affiliated Hospital of Chinese PLA General Hospital, Beijing, China.
- ²Department of Ophthalmology, PLA General Hospital of Beijing Haidian District, Beijing, China
zhaohuilcn@126.com.

Abstract

The aim of this study was to investigate the clinical features and treatment results of endophthalmitis after cataract surgery. Five patients with endophthalmitis after phacoemulsification with intraocular lens implantation were enrolled in this study. The pathogenesis, clinical manifestation, and surgical outcomes of 5 patients were compared. Three patients were surgically treated with anterior chamber irrigation and vitrectomy with intravitreal injection. The remaining two patients were medically treated with an intravitreal injection of vancomycin and ceftazidime. Treatment results of the five patients were analyzed. Four patients had positive cultures for bacteria (two cases *Staphylococcus epidermidis*, one case *Enterococcus faecalis*, and one case head-like *Staphylococcus*). The culture of the fifth patient did not have bacterial growth. One year following treatment, four patients had restored visual acuity and a clear vitreous cavity. Retinal detachment and other complications were not observed. The remaining patient had a visual acuity of index at 30 cm one year following treatment. For patients with endophthalmitis after cataract surgery, a biochemical laboratory examination should be promptly performed and should include a bacterial culture and drug sensitivity test. When necessary, vitrectomy combined with an intravitreal injection of vancomycin should be performed to treat the infection early and to help retain useful vision.

PMID: 26125869 [PubMed - in process]

7. Case Rep Ophthalmol. 2015 Jun 2;6(2):164-9. doi: 10.1159/000431251.

[Anterior Chamber Iris Claw Lens for the Treatment of Aphakia in a Patient with Megalocornea.](#)

[Saffra N](#)¹, [Rakhamimov A](#)¹, [Masini R](#)², [Rosenthal KJ](#)³.

Author information:

- ¹ Department of Ophthalmology, Maimonides Medical Center, Brooklyn, N.Y., USA.
- ²Department of Medical Photography, New York Eye and Ear Infirmary, New York, N.Y., USA.
- ³Department of Ophthalmology, New York Eye and Ear Infirmary, New York, N.Y., USA.

Abstract

Megalocornea in isolation is a rare congenital enlargement of the cornea greater than 13 mm in diameter. Patients with megalocornea are prone to cataract formation, crystalline lens subluxation, zonular deficiencies and dislocation of the posterior chamber intraocular lens (PCIOL) within the capsular bag. A 55-year-old male with megalocornea in isolation developed subluxation of the capsular bag and PCIOL. The PCIOL and capsular bag were explanted, and the patient was subsequently implanted with an anterior chamber iris claw lens. An anterior chamber iris claw lens is an effective option for the correction of aphakia in patients with megalocornea.

PMCID: PMC4478314 [Free PMC Article](#)

PMID: 26120314 [PubMed]



8. Acta Ophthalmol. 2015 Jun 27. doi: 10.1111/aos.12784. [Epub ahead of print]

[Primary angle-closure glaucoma: an update.](#)

[Wright C](#)¹, [Tawfik MA](#)¹, [Waisbourd M](#)¹, [Katz LJ](#)¹.

Author information:

· ¹Wills Eye Hospital, Philadelphia, PA, USA.

Abstract

Primary angle-closure glaucoma is potentially a devastating disease, responsible for half of glaucoma-related blindness worldwide. Angle closure is characterized by appositional approximation or contact between the iris and trabecular meshwork. It tends to develop in eyes with shallow anterior chambers, anteriorly positioned or pushed lenses, and angle crowding. Risk of primary angle-closure glaucoma is high among women, the elderly and the hyperopic, and it is most prevalent in Asia. Investigation into genetic mechanisms of glaucoma inheritance is underway. Diagnosis relies on gonioscopy and may be aided by anterior segment optical coherence tomography and ultrasound biomicroscopy. Treatment is designed to control intraocular pressure while monitoring changes to the angle and optic nerve head. Treatment typically begins with medical management through pressure-reducing topical medications. Peripheral iridotomy is often performed to alleviate pupillary block, while laser iridoplasty has been found effective for mechanisms of closure other than pupillary block, such as plateau iris syndrome. Phacoemulsification, with or without goniosynechialysis, both in eyes with existing cataracts and in those with clear lenses, is thus far a viable treatment alternative. Long-term research currently underway will examine its efficacy in cases of angle closure in early stages of the disease. Endoscopic cyclophotocoagulation is another treatment option, which can be combined with cataract surgery. Trabeculectomy remains effective therapy for more advanced cases.

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9. Am J Ophthalmol. 2015 Jun 24. pii: S0002-9394(15)00331-1. doi: 10.1016/j.ajo.2015.05.029. [Epub ahead of print]

[Protocols for Studies of Intraocular Lens Formula Accuracy.](#)

[Hoffer KJ](#)¹, [Aramberri J](#)², [Haigis W](#)³, [Olsen T](#)⁴, [Savini G](#)⁵, [Shammas HJ](#)⁶, [Bentow S](#)⁷.

Author information:

· ¹Stein Eye Institute, University of California, Los Angeles, St Mary's Eye Center, Santa Monica, California.

Electronic address: KHofferMD@AOL.com.

· ²Clínica BEGITEK, San Sebastian, Spain.

- ³Department of Ophthalmology, University of Würzburg, Würzburg, Germany.
- ⁴University Eye Clinic, Aarhus Hospital, Aarhus, Denmark.
- ⁵G.B. Bietti Eye Foundation-IRCCS, Rome, Italy.
- ⁶Keck School of Medicine, University of Southern California, Los Angeles, California.
- ⁷Abbott Medical Optics Inc, Santa Ana, California.

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10. Colloids Surf B Biointerfaces. 2013 Nov 1;111:15-23. doi: 10.1016/j.colsurfb.2013.05.002. Epub 2013 May 21.

[Sulfadiazine modified PDMS as a model material with the potential for the mitigation of posterior capsule opacification \(PCO\).](#)

[Amoozgar B](#)¹, [Morarescu D](#)¹, [Sheardown H](#)².

Author information:

- ¹School of Biomedical Engineering, McMaster University, 1280 Main St. West, Hamilton, ON L8S 4L7, Canada.
- ²School of Biomedical Engineering, McMaster University, 1280 Main St. West, Hamilton, ON L8S 4L7, Canada; Department of Chemical Engineering, McMaster University, 1280 Main St. West, Hamilton, ON L8S 4L7, Canada. Electronic address: sheardown@mcmaster.ca.

Abstract

Cataract surgery, while the most common surgical procedure performed, leads to posterior capsule opacification in approximately 30% of cases. Transforming growth factor beta 2 (TGF- β 2) and matrix metalloproteinases (MMPs) have been shown to play important roles in the cellular processes leading to posterior capsule opacification. Delivery of inhibitors to MMPs may have the potential to inhibit the initial cascade of events that lead to PCO. However, delivery of these molecules via tethering has proven difficult. In this work, sulfadiazine was tethered to polydimethylsiloxane (PDMS) via a polyethylene glycol (PEG) spacer as a potential MMPI mimic. Surface characterization using a variety of methods demonstrated successful modification with the antibiotic. The surfaces were examined with lens epithelial cells to determine their effect on these cellular processes, including cell transdifferentiation and production of extracellular matrix components. The presence of TGF- β 2 in the cell culture media was found to stimulate the production of ECM components such as collagen, fibronectin, and laminin, as well as alpha smooth muscle actin (α -SMA), and the migration marker Rho by HLE-B3 and FHL124 cells. In all cases, these effects were decreased but not completely eradicated by the presence of sulfadiazine on the PDMS surfaces. While the level of inhibition necessary for inhibition of PCO in vivo is unknown, these results suggest that IOL surface modification with sulfadiazine has the potential to reduce cellular changes associated with PCO. Furthermore, the results demonstrate for the first time that changes consistent with inhibition of fibrosis may be elicited by surfaces modified with sulfadiazine.

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11. Biochemistry. 2015 Apr 21;54(15):2500-7. doi: 10.1021/bi5013194. Epub 2015 Apr 7.

[Comprehensive analysis of maillard protein modifications in human lenses: effect of age and cataract.](#)

[Smuda M](#)¹, [Henning C](#)¹, [Raghavan CT](#)², [Johar K](#)³, [Vasavada AR](#)³, [Nagaraj RH](#)², [Glomb MA](#)¹.

Author information:

· ¹†Institute of Chemistry-Food Chemistry, Martin-Luther-University Halle-Wittenberg, 06120 Halle/Saale, Germany.

· ²‡Department of Ophthalmology and Visual Sciences, Case Western Reserve University School of Medicine, 2085 Adelbert Road, Cleveland, Ohio 44106, United States.

· ³§Iladevi Cataract and IOL Research Center, Gurukul Road, Memnagar, Ahmedabad, Gujarat 380052, India.

Abstract

In human lens proteins, advanced glycation endproducts (AGEs) originate from the reaction of glycating agents, e.g., vitamin C and glucose. AGEs have been considered to play a significant role in lens aging and cataract formation. Although several AGEs have been detected in the human lens, the contribution of individual glycating agents to their formation remains unclear. A highly sensitive liquid chromatography-tandem mass spectrometry multimethod was developed that allowed us to quantitate 21 protein modifications in normal and cataractous lenses, respectively. N(6)-Carboxymethyl lysine, N(6)-carboxyethyl lysine, N(7)-carboxyethyl arginine, methylglyoxal hydroimidazolone 1, and N(6)-lactoyl lysine were found to be the major Maillard protein modifications among these AGEs. The novel vitamin C specific amide AGEs, N(6)-xylonyl and N(6)-lyxonyl lysine, but also AGEs from glyoxal were detected, albeit in minor quantities. Among the 21 modifications, AGEs from the Amadori product (derived from the reaction of glucose and lysine) and methylglyoxal were dominant.

PMCID: PMC4467907 **Free PMC Article**

PMID: 25849437 [PubMed - indexed for MEDLINE]

12. J Vis. 2015 Jun 1;15(8):23. doi: 10.1167/15.8.23.

[Crowding is proportional to visual acuity in young and aging eyes.](#)

[Yehezkel O](#), [Sterkin A](#), [Lev M](#), [Polat U](#).

Abstract

Spatial crowding decreases object recognition and conscious visual perception in clutter. In a previous study we used brief presentation times to reveal the effects of a crowded presentation in the fovea. Here we aimed to test the relationships between varying visual acuity (VA) and crowding in the fovea, under the assumption that in uncorrected presbyopia, the processing is relatively normal, whereas the retinal input is blurred. We tested whether normal participants whose near VA is gradually reduced due to age-related deterioration (presbyopia, or "aging eye") will show an acuity-dependent increase in foveal crowding. We used brief presentations and acuity-threshold letter targets in order to magnify the crowding-effect amplitude in the fovea. A total of 195 participants with an age range of 20-68 years and an average of 44.3 ± 11.7 years ($M \pm$

SD) were divided into four age groups, all without any optical correction for the near distance. Our findings show that crowding is proportional to VA. This proportionality is affected by VA-age dependency, with a nonlinear S-shaped pattern: A steep VA reduction begins to develop, which is compatible with the normal onset age of presbyopia symptoms and a saturation in the VA-age dependency in the oldest age group, for which we propose a VA-eccentricity account. Finally, there is a high variance in the crowding amplitude in the young, even before the onset age of presbyopia symptoms, suggesting crowding conditions with limited presentation times as a highly sensitive measure of VA, which predicts visual performance in complex tasks, such as reading.

PMID: 26129861 [PubMed - in process]



13. Br J Ophthalmol. 2015 Jun 29. pii: bjophthalmol-2015-306641. doi: 10.1136/bjophthalmol-2015-306641. [Epub ahead of print]

[Corneal inlay implantation complicated by infectious keratitis.](#)

[Duignan ES](#)¹, [Farrell S](#)¹, [Treacy MP](#)², [Fulcher T](#)², [O'Brien P](#)¹, [Power W](#)¹, [Murphy CC](#)³.

Author information:

- ¹Royal Victoria Eye and Ear Hospital, Dublin, Ireland.
- ²Mater Misericordiae University Hospital, Dublin, Ireland.
- ³Royal Victoria Eye and Ear Hospital, Dublin, Ireland Department of Ophthalmology, Royal College of Surgeons in Ireland, Dublin, Ireland.

Abstract

BACKGROUND/AIMS:

To report five cases of infectious keratitis following corneal inlay implantation for the surgical correction of presbyopia.

METHODS:

This was a retrospective, observational case series. Five eyes of five patients were identified consecutively in two emergency departments during a 1-year period, from November 2013 to November 2014. Patients' demographics, clinical features, treatment and outcomes are described.

RESULTS:

There were four female patients and one male, aged 52-64 years. Three patients had the KAMRA inlay (AcuFocus) and two had the Flexivue Microlens inlay (Presbia Coöperatief U.A.) inserted for the treatment of presbyopia and they presented from 6 days to 4 months postoperatively. Presenting uncorrected vision ranged from 6/38 to counting fingers. One patient's corneal scrapings were positive for a putatively causative organism, *Corynebacterium pseudodiphtheriticum*, and all patients responded to broad-spectrum fortified topical antibiotics. All patients lost vision with final uncorrected visual acuity ranging from 6/12 to 6/60 and best-corrected vision ranging from 6/7.5 to 6/12. Two patients' corneal inlays were explanted and three remained in situ at last follow-up.

CONCLUSIONS:

Infectious keratitis can occur at an early or late stage following corneal inlay implantation. Final visual acuity can be limited by stromal scarring; in the cases where the infiltrate was small and off the visual axis at the time of presentation, the final visual acuity was better than those patients who presented with larger lesions affecting the visual axis. Though infection may necessitate removal of the inlay, early positive response to treatment may enable the inlay to be left in situ.

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