Toric Intraocular Lenses for Post-Transplant Astigmatism

By Matthew Wade, MD

Corneal transplants can be very successful at replacing diseased or damaged corneas. However, vision after a corneal transplant is often limited by high amounts of astigmatism. Treating this astigmatism is often difficult. Typically the amount of astigmatism is higher than can be corrected with glasses. Rigid contact lenses are often required. LASIK, PRK and astigmatic incisions in the cornea (astigmatic keratotomy) have all been tried with varying success.

This month, doctors at the Gavin Herbert Eye Institute at the University of California, Irvine, published a paper describing the use of commercially available, FDA approved toric (astigmatism correcting) intraocular lenses (IOL) during cataract surgery in patients with previous corneal transplant surgery.

Good candidates for this procedure are those who have had all transplant sutures removed and had corneal astigmatism that was stable, and for the most part symmetric and regular. (Image 1A shows topography that is both regular and symmetric. Image 1B is regular but not symmetric and image 1C is irregular.)
The study showed improvement in uncorrected vision (post-treatment average 20/40) and vision corrected with glasses only (post-treatment average 20/25). (Image 2 illustrates how toric intraocular lenses are positioned along the axis of corneal astigmatism.)

While any intraocular surgery after corneal transplant can decrease the life expectancy of the graft, no complications or graft failures were seen during the course of the study. Not all types of astigmatism can be treated with this procedure. This study highlights an effective treatment for regular symmetric corneal astigmatism after corneal transplant in patients needing cataract surgery.

Dr. Wade is an Assistant Professor of Ophthalmology at the University of California, Irvine Gavin Herbert Eye Institute. He studied applied physics at Brigham Young University before medical school at The George Washington University in Washington D.C. He completed his ophthalmology residency and cornea/external disease fellowship at the Gavin Herbert Eye Institute. He specializes in cornea, cataract and refractive surgery. Other interests include corneal crosslinking, the implantable miniature telescope and corneal infections. His research focus is on astigmatism correction after corneal transplantation with corneal (LASIK/P RK) and lens (toric intraocular lens) based refractive surgery.
Boston KC Research Study: Enrollment Still Open

Massachusetts General Hospital, Wellman Center for Photomedicine, and Massachusetts Eye and Ear Infirmary continue to enroll volunteers for a research study on imaging of the cornea. Eligible individuals include:

- healthy subjects with normal cornea
- patients diagnosed with keratoconus
- subject who underwent LASIK surgery without complications
- subjects who have developed ectasia after the LASIK surgery

The research study consists of an initial, standard eye exam (time commitment 2 hours), an imaging session (time commitment 1 hour). You will receive $75 for successfully completed imaging session. For more information, please call 617-768-8705 or email Dr Giuliano Scarcelli directly at Scarcelli.Guiliano@mgh.harvard.edu.

For more information click here.

(IRB APPROVED)

Bausch + Lomb Supports NKCF

Many thanks to Bausch+Lomb for their generous grant to reprint the sixth edition of the NKCF’s Spanish KC booklet ¿Que es Queratocono?
Bausch + Lomb has been a loyal sponsor of the NKCF since it was established in 1986 and has supported the printing costs of the KC booklets since the very first edition.

Thank You!

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GP contact lenses

Blink Patterns: Computer Screen vs Hard Copy

Computer use is hard on the eyes...whether you have KC or not. Past studies have reported a reduced blink rate during computer use and suggested that this may account for some of the symptoms, particularly dry eye.

To determine whether it is computer screen viewing that produces the change in blink rate, a new study by Drs. Chu, Rosenfield, and Portello at the State University of New York, College of Optometry in New York, compared blink patterns when reading from either a desktop computer monitor or a hard copy printed text under equivalent viewing conditions.

Subjects were required to perform a continuous 20-minute reading task from either a desktop computer screen or a printed hard copy page at a viewing distance of 50 cm. Identical text, matched for size and contrast, was used in the two sessions. Target viewing angle and lighting were similar for both computer screen and hard copy. Subjects were videotaped during the task to determine their blink rate and amplitude. Immediately after the task, subjects completed a questionnaire regarding ocular symptoms experienced during the trial.
They found that the mean blink rates for the computer and hard copy conditions were 14.9 and 13.6 blinks per minute, respectively. However, a significantly higher percentage of incomplete blinks was observed while using the computer (7.02% vs. 4.33%). No significant correlation was found between the symptom score and the percentage of incomplete blinks.

When compared with an equivalent hard copy control condition, blink rates were not reduced during computer use. It is proposed that the previously observed differences in blink rate are more likely to be produced by changes in cognitive demand rather than the method of presentation. However, a higher percentage of incomplete blinks was noted during computer use, which may have been associated with visual fatigue.

For more information about the importance of blinking and eye comfort read:

The Art and Science of Blinking by Dr. Bezalel Schendowich

Source: Optom Vis Sci. 2014 Mar Blink Patterns: Reading from a Computer Screen versus Hard Copy.Chu CA1, Rosenfield M, Portello JK

In Memory

Dr. Donald Hersh, 86, of Bernardsville, NJ, passed away on March 20, 2014 after a brief illness. Born in Newark, NJ, “Dr. Donald” graduated Columbia University in 1951 and then attended the Columbia School of Optometry. He lived in and practiced optometry in Maplewood for nearly 50 years, directed the contact lens divisions of Rutgers-New Jersey Medical School and the Cornea and Laser Eye Institute in Teaneck, working with his son, ophthalmologist Peter Hersh. He specialized in the contact lens management of corneal diseases, with a particular interest in keratoconus. He attended and often spoke at the NKCF’s NJ Patient Ed Seminars and was a member of the NKCF Referral Program. He will be missed by all who knew him.
Support the NKCF

You can help us continue to provide the information and services that help those with KC and their families better understand and live with keratoconus by making a tax-deductible gift - of any amount - today.

Donate Now
Secure donations through Network for Good

Thank you for your support!

I hope you find this month's E-Update informative. Visit the NKCF website at www.nkcf.org for more information about keratoconus and the treatment options available.

Catherine Warren
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