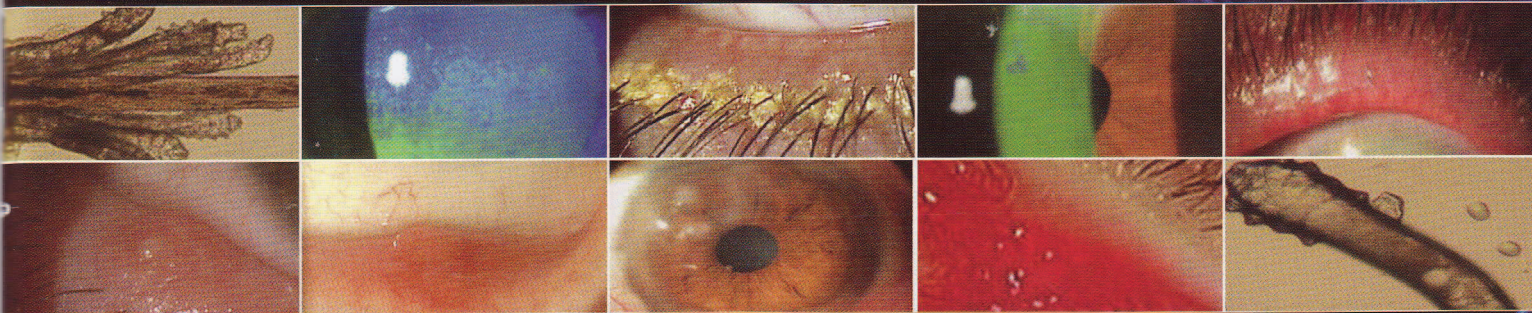


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Beating Blepharitis



The prevalence of lid disease may be higher than you think.
Brush up on this complex problem's diagnosis and treatment.

► **Anterior and Posterior Blepharitis**

By Katherine M. Mastrotta, MS, OD

► **Topical Azithromycin for the Treatment of Blepharitis**

By Jodi Luchs, MD

► **Hordeolum and Chalazion**

By Ben Gaddie, OD

► **The Importance of the Preoperative Evaluation**

By William B. Trattler, MD

► **Demodex Blepharitis**

By Jingbo Liu, MD, PhD;
Hosam Sheha, MD, PhD;
Yao Fu, MD, PhD; and
Scheffer C. G. Tseng, MD, PhD

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ALSO INSIDE:

- DSAEK With Retained ACIOLs
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DSAEK With Retained ACIOLs

Many surgeons currently recommend the implant's removal and the use of scleral-fixated IOLs. We asked, why perform an IOL exchange rather than retain the anterior chamber lens?

BY BARRY A. SCHECHTER, MD

Descemet's stripping automated endothelial keratoplasty (DSAEK) benefits both surgeons and patients, because it offers an alternative to open-sky surgery and is associated with less induced postsurgical astigmatism and faster visual rehabilitation. Most corneal surgeons currently recommend the removal of an anterior chamber intraocular lens (ACIOL) and replacement with a scleral- or iris-fixated IOL prior to or at the time of DSAEK to improve the survival of endothelial cells. An IOL exchange, however, may be associated with an increased risk of infection, tears in the iris and/or ciliary body, hemorrhage, cystoid macular edema, severe iritis, retinal detachment, or late dislocation of the IOL.¹

Careful preoperative assessment can identify patients who may safely undergo DSAEK with retention of their ACIOLs.

RETROSPECTIVE STUDY

At the World Cornea Congress in April, Salomon Esquenazi, MD, and I presented the pooled results from a

retrospective 2-year study at our two centers. The investigation included 25 patients who underwent DSAEK with a retained, well-centered ACIOL.² Before surgery, we performed Scheimpflug imaging with the Pentacam Comprehensive Eye Scanner (Oculus, Inc., Lynnwood, WA) to ensure that the distance from the ACIOL to the endothelium was greater than 3 mm, which we surmised would not compromise the graft's survival because of lens-endothelial touch. We also checked that the ACIOL was correctly centered and positioned with less than 5° of tilt.

Data were available for 25 eyes at 6 and 12 months and for 20 eyes at 24 months postoperatively. The patients' mean age was 69 ± 8 years (range, 45-90), and 74% were women. The etiology for DSAEKs being performed in this population were Fuchs' dystrophy (20%) and pseudophakic bullous keratopathy (80%). The mean time from the ACIOL's implantation to DSAEK was 15.1 years in this population, and all cases were performed under topical anesthesia.

TABLE 1. PREOPERATIVE DATA AND 1- AND 2-YEAR RESULTS FOR CENTRAL ENDOTHELIAL CELL DENSITY OF THE ENDOTHELIAL GRAFT AFTER DSAEK WITH RETAINED ACIOL. DATA STRATIFIED FOR FUCHS' ENDOTHELIAL DYSTROPHY AND PSEUDOPHAKIC BULLOUS KERATOPATHY.

	Fuchs' Endothelial Dystrophy			Pseudophakic Bullous Keratopathy		
	Preoperatively n = 5	1 Year Postoperatively n = 5	2 Years Postoperatively n = 5	Postoperatively n = 20	1 Year Postoperatively n = 20	2 Years Postoperatively n = 15
Mean ECD	2,792	1,955	1,769	2,683	1,848	1,742
Range ECD	2,848-2,319	2,364-1,247	2,184-931	3,138-2,283	2,437-1,217	2,231-841
% cell loss	N/A	35	40	N/A	36	41
Range of cell loss from baseline	N/A	Aug-49	15-63	N/A	Sep-51	16-62

Abbreviations: ECD, endothelial cell density

REFRACTIVE RESULTS

The patients' refractive results were analyzed 2 years postoperatively. We found the mean UCVA was 0.16 log/MAR (range, 0.10-0.50), the mean BSCVA was 0.38 log/MAR (range, 0.25-0.80), and the mean spherical equivalent was +0.55 D (range, -2.25 to +2.00). The mean amount of induced astigmatism was 0.40 D (range, 0.00-1.50).

In terms of endothelial cell density, the results split by preoperative endothelial pathology (Fuchs' dystrophy vs pseudophakic bullous keratopathy) are presented in Table 1. There was no statistically significant difference between the two groups analyzed (35% at 1 year and 40% at 2 years in the Fuchs' dystrophy patients vs 36% at 1 year and 41% at 2 years in patients with pseudophakic bullous keratopathy). Therefore, our study demonstrated that DSAEK for endothelial failure in the presence of an ACIOL is safe with endothelial survival rates that are comparable to those previously reported of DSAEK surgery in the presence of a posterior chamber IOL, which show a mean loss of cells of 34% and 35%, respectively, at 6 months and 1 year postoperatively.³

STUDIES ON DEEP LAMELLAR ENDOTHELIAL KERATOPLASTY

The surgical technique used in this investigation did not differ from our standard DSAEK technique (Figure 1). None of the 25 cases studied required increased manipulation of the endothelial graft tissue. Our use of an anterior chamber maintainer and a pulling insertion technique that reduces endothelial trauma were likely beneficial, because unfolding a graft in the presence of an ACIOL is technically more challenging than our pulling technique. We did not attempt DSAEK in the presence of an ACIOL in eyes with an anterior chamber depth of less than 3 mm, which would have increased procedural difficulty. In these eyes, an IOL exchange might be preferable.

CELLULAR LOSS

The multicenter Corneal Donor Study (CDS) examined cellular loss after standard penetrating keratoplasty to treat endothelial dysfunction. It showed a cumulative rate of endothelial cell loss of 70% after 5 years.⁴ Our data seem to compare favorably thus far to these results. The presence of an ACIOL is almost always due to the

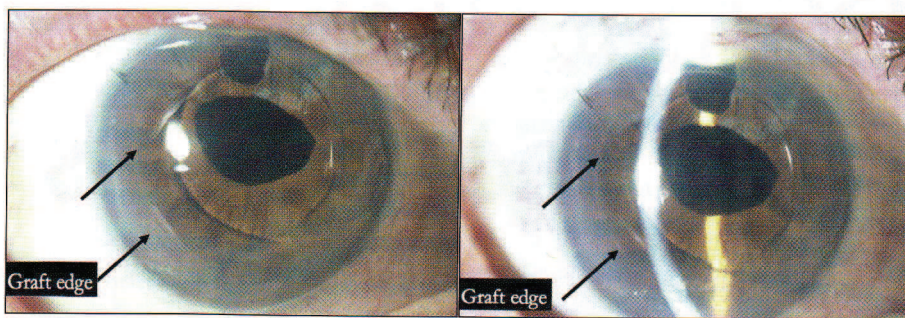


Figure 1. A slit-lamp photograph and diffuse lighting show a clear, well-centered DSAEK graft in front of a well-centered ACIOL.

patient's having a history of vitrectomy and a loss of an intact lens-iris diaphragm, which makes retention of an air bubble during surgery more difficult. Fortunately, we did not encounter problems with retaining the air bubble in our series. We attributed this to the presence of a well-centered ACIOL and maintenance of proper head position intraoperatively and postoperatively in these patients despite patent iridectomies.

CONCLUSION

The number of DSAEK procedures performed worldwide has increased 1,000% since 2005.⁵ Little is known about the long-term survival rates of endothelial cells, however, because the procedure has only been performed for 5 years. Although the long-term (>5 years) results of DSAEK with an ACIOL remain unknown, the inherent advantages of retaining the IOL versus exchanging it make this option attractive. This is particularly true for patients with sufficient ACIOL-to-endothelium clearance (>3 mm) and endothelial failure in the presence of well-centered ACIOLs. Further studies with longer follow-up should be performed to compare the amount of endothelial cell loss over time in this group compared with eyes that undergo DSAEK with posterior chamber IOLs. ■

Barry A. Schechter, MD, is director of the Department of Cornea and External Diseases at Florida Eye Microsurgical Institute, Boynton Beach, Florida. Dr. Schechter may be reached at (561) 737-5500; baschechter@gmail.com.



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