

Combining ECP With Presbyopic Correction

Implanting a multifocal IOL during combined ECP/cataract surgery can benefit patients.

BY JON WESTON, MD

I have been performing endoscopic cyclophotocoagulation (ECP) for almost 10 years and have found it to be consistently successful in my glaucoma patients. The procedure lowers IOP, it reduces the amount of medication they need, and its effect lasts more than 5 years.¹ Initially inaccurately equated with external ciliodestructive procedures, ECP has proven to be a useful addition to cataract surgery. The procedure adds approximately 5 to 10 minutes to the total surgical time.

I have had some success with ECP's use in conjunction with the implantation of presbyopia-correcting IOLs. There is concern with these lenses' use in the setting of significant nerve damage and field loss and, even in mild cases, loss of contrast sensitivity may adversely affect visual function. This article provides an overview of combined phacoemulsification, ECP, and multifocal IOL implantation, and presents a case history of the cataract/ECP/multifocal "triple" procedure with good results.

PATIENT SELECTION

If patients are candidates for a multifocal IOL, I further screen them to determine which IOL best fits their lifestyle. I find that the AcrySof Restor IOL +4.0 D (Alcon Laboratories, Inc., Fort Worth, TX) best suits patients who prize their near vision. I recommend the ReZoom lens (Abbott Medical Optics Inc., Santa Ana, CA) to individuals who are more concerned with their intermediate vision, such as those who work at a computer or who are avid readers. I have generally limited my use of the Crystalens (Bausch & Lomb, Rochester, NY) to patients whose near visual needs can be satisfied with a mini-monovision approach. I expect to use the Tecnis Multifocal IOL (Abbott Medical Optics Inc.) and the

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AcrySof Restor IOL +3.0 D (Alcon Laboratories, Inc.) in the near future. There has been much progress in presbyopia-correcting IOL technology since I implanted my first Array IOL more than 10 years ago. Recent modifications have begun to address the limitations of the more recent IOLs. The AcrySof IQ Restor IOL +3.0 D addresses both the lack of intermediate function and visual distortions commonly reported with the original version. Whether the Tecnis Multifocal IOL replaces the ReZoom remains to be seen, but the early results I am seeing with improved near function may make it my go-to IOL. The Crystalens HD moves this product from a less-than-ideally-predictable mini-monovision IOL to one with which I am more comfortable.

If a glaucoma/cataract patient strongly desires a multifocal IOL, ECP allows me to address three conditions at once. The ideal candidates have medically controlled glaucoma and no significant visual field loss. This combined surgery works best for typical cataract patients who have chronic open-angle glaucoma.

HOW ECP WORKS

ECP destroys the ciliary epithelium, thus reducing the production of aqueous humor and lowering the IOP. After meticulous cortical cleanup, I inject a 20-gauge endoscope through the cataract surgery incision. Next, I

empty the capsular bag and inject an ophthalmic viscosurgical device over the bag to collapse it, which permits me a better view of the ciliary processes. The laser then photocoagulates the ciliary processes. The goal is to completely whiten each process in the treatment zone. With the curved ECP probe, I can access 270° to 300° of the ciliary processes, although many surgeons suggest a second incision for a full 360° treatment. Most patients require a 270° to 360° treatment to obtain lasting, effective results. I then reinflate the bag in order to place the IOL. The video monitor for endoscopy takes some adjustment, although the learning curve is short. For those not familiar with the technique, I suggest visiting an experienced ECP surgeon, and they can also read my article in *Techniques in Ophthalmology*.¹

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CLINICAL RESULTS

Combined ECP/phacoemulsification produces consistent results and lowers patients' IOP and the number of glaucoma medications they need. Tyson reported a 16% reduction in IOP at 5 years in 125 eyes. In that study, 76% of treated eyes required one or more fewer medications, and 61% required no medication.² These results are consistent with those of many studies on the combined procedure.^{3,4}

In a study of 5,824 eyes at an average follow-up period of 5.2 years, the most common problems were postoperative IOP spikes resulting from retained viscoelastic (14.5% of eyes) and a transient intraocular hemorrhage (3.8% of eyes).⁵ These complication rates are far lower than with trabeculectomy. Nevertheless, I do monitor these patients more closely and extend anti-inflammatory use to 6 weeks.

CASE REPORT

A 67-year-old female patient was referred to me for visually significant cataracts that interfered with her reading and computer work. She had significantly asymmetric cups with mild inferior thinning confirmed on optical coherence tomography testing. Visual field testing with the Humphrey Atlas corneal topographer (Carl Zeiss Meditec, Inc., Dublin, CA) was normal. She was

highly motivated to reduce her dependence on spectacles. After an extensive discussion of the risks and benefits of combined surgery, she elected to undergo ECP and cataract surgery. The newer versions of our current presbyopia-correcting IOLs were not available. I elected to use the ReZoom because I felt the 2-mm central distance zone would be least likely to cause contrast or visual problems for distance compared to the available AcrSof Restor, and I thought the Rezoom would provide more reliable near function than the Crystalens. Although I usually perform surgery on patients' second eye after 2 weeks, I waited 4 weeks in this case to be sure that there was no prolonged inflammation or other problem after the initial surgery.

The patient's uncorrected vision at 7 weeks postoperatively was 20.25- and J2 in each eye with binocular vision of 20/20 and J1+. Her maximum IOP on no drops was 12 mm Hg OU, reduced from a range of 18 to 20 mm Hg preoperatively.

CONCLUSION

Combining cataract/multifocal IOL implantation with ECP can benefit patients in terms of improved visual function at distance and near. Patients will be pleased with their improved visual quality as well as the control of their glaucoma with less medication. ■

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