Point/Counterpoint:

Combining ECP and Cataract Surgery

In many glaucoma patients, endoscopic cyclophotocoagulation is an appropriate treatment option.

BY STANLEY J. BERKE, MD, FACS

US ophthalmologists perform more than 3 million cataract surgeries each year. For the many patients who are also receiving treatment for glaucoma, combining endoscopic cyclophotocoagulation (ECP) with cataract surgery is often an appropriate and effective means of managing the disease.

EVIDENCE

Before 1998, the options for treating patients with glaucoma and cataracts were limited to phacoemulsification or phacotrabeculectomy. Some of the patients on whom I performed phacoemulsification alone experienced a modest decrease in IOP, but most remained on the same number of glaucoma medications. Some patients experienced no change in IOP or even an increase in IOP, necessitating subsequent surgical trabeculectomy. My results are consistent with reports in the literature.[1,2]

Since 1998, my partners and I have performed more than 1,000 cases of combined phacoemulsification and ECP, primarily in patients with medically controlled glaucoma. We conducted an analysis of our first 25 consecutive cases with 1 year of follow-up.[3] In our analysis, 180° treatment of the ciliary processes resulted in a mean decrease in IOP from 20.2 to 17.2 mm Hg (15%) and a reduction in the mean number of glaucoma medications from 1.6 to 0.5 (68%). Patients experienced no visual loss postoperatively and no significant postoperative sequelae.

Another study involving over 1,000 eyes confirms our results and shows no difference in angiographic cystoid macular edema between eyes undergoing phacoemulsification/ECP and phacoemulsification alone (approximately

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There is insufficient evidence that endoscopic cyclophotocoagulation achieves a lasting decrease in IOP.

BY ALAN L. ROBIN, MD

The need for an alternative to filtration surgery is obvious. The problems associated with trabeculectomy include failure, flat chambers, choroidal effusions, endophthalmitis, bleb leaks, and hypotony. To date, however, I have not seen adequate controlled, scientific research in the peer-reviewed literature demonstrating that endoscopic cyclophotocoagulation (ECP) safely produces long-term, positive results with regard to decreasing IOP and, thus, facilitating the management of glaucoma in patients undergoing cataract surgery.

CYCLODESTRUCTION

We have destroyed the ciliary body for many decades in an effort to halt glaucomatous progression. We have burned this tissue with electrodes, frozen it with cryotherapy, and destroyed it with lasers. Among the first to use intraocular lasers in this capacity were Ronald G. Michels, MD; John T. Thompson, MD; and Arun Patel, MD, from the Wilmer Eye Institute at Johns Hopkins University in Baltimore. In patients with intractable glaucoma, they found it necessary to destroy 50% to 60% of the ciliary processes in order to lower pressure adequately.[1] Such damage to the ciliary body breaks down the blood-aqueous barrier, which maintains the homeostatic nature of the eye. Destroying this barrier can cause chronic inflammation and cystoid macular edema. Because of these significant adverse events, one normally reserves destructive procedures as final treatments for glaucoma. We try to be constructive, rather than destructive, in glaucoma therapy.

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2% in both groups).[4] Based on our analysis, a typical patient with an IOP of 20 mm Hg on three medications would experience a 3-mm Hg drop in IOP and need only one medication after combined ECP/phacoemulsification. As a result of needing fewer medications, the patient pays less for medication, is at less risk for side effects, and may adhere better to a less complex dosing regimen.

BENEFITS OF ECP

I consider ECP for any patient requiring glaucoma surgery who is a poor candidate for filtration surgery or the placement of a glaucoma drainage device. These patients include those with scarred conjunctivae or whose contralateral eye had trabeculectomy- or bleb-related problems (eg, a flat chamber, chronic choroidal detachment, hypotony).[5] ECP is also preferable to filtration surgery in eyes where an ocular fistula is undesirable due to elevated episcleral venous pressure, an intraocular tumor, contact lens wear, or blepharitis. The procedure is also more appropriate than filtration surgery in anticoagulated or monocular patients, because it can be performed with topical/intracameral anesthesia.

ECP is faster (adding only 2 to 4 minutes to phacoemulsification) and easier to perform than filtration surgery or the implantation of drainage devices. It involves far fewer postoperative visits and manipulations (eg, laser suture lysis, bleb needling, 5-fluorouracil injections). The procedure is particularly valuable for patients who are unable to make frequent postoperative visits or cooperate for laser suture lysis, suture removal, or other manipulations of the bleb.

The procedure is also titratable. No reports exist of hypotony or phthisis associated with the procedure in my extensive experience or in the 50,000 procedures performed worldwide over the past 10 years. Furthermore, ECP is repeatable. One can treat 360º of the ciliary processes, because only the tips are treated; the "valleys" in between are spared.

Finally, ECP is reimbursable. The CPT code 66711, ciliary body destruction, cyclophotocoagulation, endoscopic is a level II reimbursement, and it more than covers the costs associated with the procedure.

CANDIDATES FOR ECP

I do not perform ECP on every glaucoma patient undergoing cataract surgery. I still choose phacoemulsification alone or combined phacotrabeculectomy in many cases. Generally, I perform 40 cataract surgeries per month, and approximately 10 of the eyes have glaucoma. On average, 25% of the eyes with cataracts and glaucoma undergo phacoemulsification alone, 50% phacoemulsification/ECP, and 25% phacotrabeculectomy.

Generally, if a patient has mild, well-controlled glaucoma on a single, well-tolerated glaucoma medication, I perform phacoemulsification and IOL insertion through a clear corneal temporal incision. This approach preserves the conjunctiva superiorly, in case the individual needs a trabeculectomy in the future. If a patient has moderate glaucoma and is on two or more medications, I perform phacoemulsification/ECP through a clear corneal incision in an effort to lower the patient's IOP and reduce or eliminate the need for glaucoma medications. Finally, if a patient has advanced glaucomatous cupping and visual field loss on maximum medical therapy (two or more medications), I perform a phacotrabeculectomy with intraoperative mitomycin C.

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CONCLUSION

ECP should not be considered similar to the transscleral forms of cycloablation, which are "blind" procedures that can cause significant collateral tissue damage and result in the over- or undertreatment of the tips of the ciliary processes. In summary, ECP may not be indicated for some of our cataract patients with very mild or very advanced glaucoma. However, it is a simple and easy addition to our armamentarium to treat glaucoma patients with moderate glaucoma on two or more medications. ❑

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SUCCESS RATES

ECP does not always adequately lower IOP. Many patients with glaucoma who have undergone ECP still need additional IOP-lowering medications after combined ECP and cataract surgery. Due to problems with compliance and adherence, this reliance upon medication is not ideal.

> "Many patients with glaucoma who have undergone ECP still need additional IOP-lowering medications after combined ECP and cataract surgery."

CAVEATS

I have not performed ECP. Although I am rarely conservative about new procedures, I hesitate to use ECP, because the potential ill effects of chronic inflammation trouble me. Perhaps a patient with neovascular glaucoma or uveitic glaucoma, who would experience inflammation postoperatively anyway, may benefit from ECP. The procedure may be an acceptable alternative to filtration surgery for some patients, such as those with endophthalmitis in their opposite eye who need cataract surgery as well.

CONCLUSION

ECP is clearly inappropriate in patients with ocular hypotension who have not exhibited glaucomatous changes to their optic discs or visual fields. In these patients, the risk of any intervention is certainly not worth the therapy. Before considering the procedure for my practice, I would like to review prospective results (particularly with regard to safety) from unbiased reviewers in well-controlled studies that compare of combined ECP/cataract surgery with phacotrabeculectomy. ❑

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