

Is Earlier Cataract Surgery Best for Treating Glaucoma?

Glaucoma is second only to cataract among visual disorders. Population-based glaucoma prevalence models estimate that the disease will affect approximately 79.6 million people worldwide by the year 2020. Approximately 5.9 million people with open-angle glaucoma and 5.3 million people with angle-closure glaucoma are expected to suffer from bilateral blindness at that time.¹ Considering the high cost of medication, the relatively modest long-term efficacy of laser trabeculoplasty, and the frequent complications of current incisional glaucoma operations, how do we best manage this growing epidemic?

Not long ago, cataract surgery's place in the management of glaucoma patients was widely questioned. We deemed the procedure inflammatory and potentially deleterious to the trabecular meshwork's performance. In addition, numerous clinical studies demonstrated that cataract surgery negatively affected the filtration bleb's function. Compared to patients who had filtration surgery alone, those undergoing combined cataract surgery and trabeculectomy achieved worse results as far as their glaucoma. Conjunctival scarring from the scleral tunnel of cataract surgery often compromised the success of future filtration surgery. Moreover, complications such as capsular rupture, vitreous loss, endophthalmitis, retinal detachment, cystoid macular edema, posterior capsular opacification, chronic inflammation, and corneal compromise occurred more frequently than we found acceptable.

Fortunately, cataract surgery has dramatically improved over the past several decades. Clear corneal surgical techniques have replaced scleral tunnels. Cataract incisions are now routinely smaller than 2.5 mm. Better fluidics and more efficient phacoemulsification technologies reduce trauma. Conscientious cortical cleanup, better viscoelastics, superior IOL designs, and more potent steroids speed patients' visual recovery and minimize postoperative inflammation. Femtosecond lasers and intraoperative aberrometers enhance surgical precision such that patients' UCVA is com-

monly 20/20 or better even on the first day postoperatively. These advances and many others have allowed us to drastically reduce the risk of complications related to cataract surgery.

Moreover, recent clinical trials now challenge our earlier view of cataract surgery's impact on glaucoma. Poley and colleagues found that, performed alone, the procedure achieved a sustained reduction of 6.5 mm Hg in eyes with a preoperative IOP ranging from 23 to 31 mm Hg. The investigators calculated the rate of glaucoma conversion to be 1.1% at 10 years,² significantly better than the 4.4% 5-year conversion rate reported in medically treated eyes evaluated in the Ocular Hypertension Treatment Study (OHTS).³ Poley et al proposed that cataract surgery mechanically restores trabecular out-

flow in eyes predisposed to glaucoma, whereas medication does not directly address the root of the problem. Phacoemulsification may also result in better long-term IOP outcomes than laser iridotomy in cases of angle-closure glaucoma. Reay Brown, MD, reported that cataract surgery lowered IOP in 90% of 83 patients with anatomically narrow angles or chronic angle closure.⁴ Despite these observations, other forms of incisional glaucoma surgery almost certainly will be necessary to adequately treat eyes that have advanced glaucomatous disease and extensive synechial angle closure as well as those without lenticular opacity.

This issue of *Glaucoma Today* examines the management of glaucoma associated with developmental disorders. Interestingly, some of these conditions may benefit from earlier lens extraction as well (eg, Marfan syndrome, Weill-Marchesani syndrome, angle closure related to retinopathy of prematurity). Although earlier cataract surgery is certainly not a panacea, we would be wise to avoid underestimating its potential value in appropriate clinical situations. As IOL technology continues to advance, refractive lens exchange may prove to be a first-line glaucoma therapy for many patients. ■



1. Quigley HA, Broman AT. The number of people with glaucoma worldwide in 2010 and 2020. *Br J Ophthalmol*. 2006;90:262-267.
 2. Poley BJ, Lindstrom RL, Samuelson TW. Long-term effects of phacoemulsification with intraocular lens implantation in normotensive and ocular hypertensive eyes. *J Cataract Refract Surg*. 2008;34:735-742.
 3. Kass MA, Heuer DK, Higginbotham EJ, et al. The Ocular Hypertension Treatment Study: a randomized trial determines that topical ocular hypotensive medication delays or prevents the onset of primary open-angle glaucoma. *Arch Ophthalmol*. 2002;120(6):701-713.
 4. Brown RH, Lynch MG, Whitman A. Cataract surgery reduces intraocular pressure in patients with narrow angles and chronic angle closure glaucoma. Paper presented at: American Glaucoma Society 19th Annual Meeting; March 6, 2009; San Diego, CA.

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