

CATARACT SURGERY

On Patients With Advanced Glaucoma

Special considerations for this population.

Ophthalmologists in Italy often tell their patients, “Having cataract surgery is like drinking a good espresso.” This comment, however, may not apply to patients who have advanced glaucoma. Cataract surgery can offer them an excellent chance at improved vision, but it also comes with risks that must be carefully considered and thoroughly explained to them before proceeding. It is also important to recognize that many patients with glaucoma think that cataract surgery will reverse visual field loss, so it is essential for surgeons to set realistic expectations (see *Preoperative Discussion*).

CATARACT PREVALENCE, VISUAL POTENTIAL, AND SURGICAL TIMING

Knowing the prevalence of cataract formation in patients with glaucoma and gauging their visual potential can help surgeons make crucial decisions about timing cataract surgery appropriately.

Prevalence. Advances in the medical and surgical treatment of glaucoma have made it possible to achieve IOP control in many patients with advanced disease. The prevalence of cataracts increases with age,^{1,2} and the use of hypotensive drugs³ and glaucoma surgery⁴ can accelerate the development and progression of cataracts. It is therefore not surprising that the prevalence of cataracts rises as glaucoma

progresses; 59.2% of patients with advanced glaucoma had cataracts in one study.⁵

Visual potential. Even an insignificant cataract can greatly reduce visual acuity by decreasing the contrast sensitivity of an eye already compromised by glaucomatous damage. Several studies have demonstrated that patients with glaucoma can experience a significant improvement in visual function after cataract surgery despite visual field defects.^{6,7} Moreover, quality of life seems to improve after cataract surgery in terms of increased motility and improved mental state, probably because of fewer limitations on social activities and reduced dependence on others. When it increases near visual acuity, cataract surgery can improve advanced glaucoma patients’ ability to care for themselves by allowing them to read materials such as labels and newspapers.⁷

Unfortunately, cataract surgery does not achieve these results in every patient with advanced glaucoma, and these patients may experience postoperative depression as a result.⁸ It is therefore important to have a balanced preoperative discussion of the risks and benefits of cataract surgery and to be ready to provide counseling to patients who do not experience improved visual function after the procedure.

Surgical timing. Cataract surgery does not have to be performed immediately in this population. One reason that cataract

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PREOPERATIVE DISCUSSION

Cataract surgery can be challenging in patients with advanced glaucoma for many reasons:

- ▶ The pupil may be small;
- ▶ The zonules may be weak, particularly in eyes with pseudoexfoliation or traumatic glaucoma;
- ▶ There may be synechiae;
- ▶ The capsule may be damaged (traumatic glaucoma); and
- ▶ There may be an increased risk of postoperative inflammation (uveitic glaucoma).

Before proceeding with surgery, it is important to explain to patients how their disease can alter the intra- and postoperative course of cataract surgery. For example, more surgical manipulation may be required in the anterior chamber, which can result in a slower postoperative visual recovery.

It is also important to explain to patients that their advanced glaucoma affects their IOL options. Multifocal IOLs, for example, are contraindicated because they may further reduce contrast sensitivity. Results with extended depth of focus IOLs may also be suboptimal. Toric IOLs are an option in patients with advanced glaucoma and astigmatism, but these lenses should be avoided if the zonules are weak.

surgery may be postponed in patients with advanced glaucoma is that it can be difficult to ascertain the visual potential in these patients. How much is glaucoma contributing to their reduced visual acuity? There are several approaches to making this determination, but most of the time physicians can rely on their clinical judgment.

A second reason that cataract surgery may be delayed in patients with advanced glaucoma is that the surgeon is concerned about wiping out their remaining central vision. Patients with advanced glaucoma are at high risk of reduced visual function from disease

progression because of elevations or fluctuations in IOP.⁹ Many times, the choice is made to delay cataract surgery and continue with conservative glaucoma treatment.

Wipeouts are more common after traditional filtering surgery, but they have also been reported after cataract surgery in patients with advanced glaucoma.^{10,11} In this situation, the main cause of the complication is thought to be a sudden variation in IOP during or immediately after surgery. Fortunately, current phaco techniques rarely cause an abrupt and significant decrease in IOP and a subsequent wipeout in patients

with previously well-controlled IOP. Nevertheless, surgeons should take care to avoid sudden drops in IOP and ensure that all cataract incisions are watertight at the end of the procedure.

A more frequent cause of visual acuity loss after cataract surgery is an IOP spike immediately postoperatively. Elevated IOP has been reported in up to 8.9% of eyes after uncomplicated cataract surgery.^{12,13} IOP generally peaks between 5 and 7 hours postoperatively.¹²⁻¹⁴ Careful OVD removal usually prevents IOP increases. In patients with advanced glaucoma, however, it is advisable to administer IOP-lowering medication. The ophthalmologist can also consider combining cataract surgery with MIGS.¹⁵⁻¹⁷

CLOSELY MONITOR PATIENTS

Close monitoring of patients with advanced glaucoma is recommended after cataract surgery, especially if the eye's axial length is long. A steroid response should be considered if IOP rises later in the postoperative period or the duration of the increase is lengthy, particularly in patients who have a positive family history of glaucoma, a greater axial length, and/or concurrent diabetes.^{18,19} An early discontinuation of steroid treatment in favor of NSAID therapy may be indicated.



Cystoid macular edema (CME) is also reported to occur more frequently in patients with glaucoma,²⁰ and NSAID therapy can be beneficial in this situation. A macular scan is warranted to rule out CME in patients with advanced glaucoma.

IOP REDUCTION

Although cataract surgery alone can lower IOP, the reduction may be insignificant in patients whose IOP is well controlled preoperatively. Nevertheless, some of these patients may require fewer glaucoma medications after the cataract procedure.²¹ These benefits are unpredictable—a point worth emphasizing to patients before the cataract procedure.

The IOP-lowering effect of cataract surgery tends to be greater in patients who have angle-closure glaucoma. A gonioscopic examination before the cataract procedure is advisable. Mixed results in the literature notwithstanding,^{22,23} combining goniosynechialysis with cataract surgery may benefit patients in the long term.²⁴

NANOPHTHALMOS

Early reports on cataract surgery on glaucomatous nanophthalmic eyes were not encouraging, but techniques for small-incision cataract surgery are helping surgeons to obtain excellent results in these patients. Intraoperatively, care must be taken to preserve the anterior chamber depth and to use an OVD to prevent intraoperative decreases in IOP. Careful surgical planning and meticulous technique help to prevent complications that are more likely to occur in these eyes due to abnormal anatomy. These include uveal effusion, suprachoroidal hemorrhage, secondary retinal detachment, vitreous hemorrhage, iris prolapse, persistent corneal edema, CME, and the development of malignant glaucoma.²⁴⁻²⁶

The risks of chronic angle closure and the development of glaucoma can be reduced by increasing the anterior

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chamber volume and depth after phacoemulsification and lens extraction. Further, some surgeons recommend early surgery on these eyes.²⁴

CONCLUSION

Technological advances have improved the safety and outcomes of cataract surgery on patients with advanced glaucoma. Maximizing success requires a thorough preoperative examination, careful surgical planning, a discussion of both the risks and benefits of surgical intervention, and setting realistic expectations.

Cataract surgery can improve quality of life in this population. Delaying intervention until the cataract is denser can increase the risks. Even if cataract surgery does not significantly improve IOP control and/or reduce medication burden, the procedure can still offer benefits if the patient needs glaucoma surgery in the future. Standalone filtering surgery on a pseudophakic eye has several advantages: less inflammation, a greater rate of success, and potentially easier management of possible complications. ■

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- Financial disclosure: None acknowledged

