CATARACT SURGERY ON PATIENTS WITH A HISTORY OF REFRACTIVE SURGERY

A practical framework for IOL selection in this population.

BY KENDALL E. DONALDSON, MD, MS

Patients who have a history of laser vision correction (LVC) are common in my clinic and make up about one-third of my cataract surgery patients. They typically enjoyed spectacle freedom for many years after corneal refractive surgery and present with high expectations. Many are younger than the average cataract patient, and their symptoms are often disproportionate to the severity of their cataract. For example, they may exhibit early nuclear sclerotic changes but report moderately severe blurred vision, glare, and halos.

About 75% of these patients received a myopic ablation and have a relatively low magnitude of higher-order aberrations (HOAs). Those with a history of hyperopic LASIK can have more severe HOAs; the cornea may be abnormally steep, decreasing contrast sensitivity and image quality.

This article details my approach to IOL selection for patients who have a history of LVC.

MY DEFAULT OPTIONS

I typically do not offer these patients lenses that divide light (ie, extended depth of focus and multifocal designs). Instead, we discuss monofocal IOLs (standard and toric models) and a monovision strategy, particularly if the patient has a history of LASIK or PRK monovision. I also offer a Light Adjustable Lens (LAL; RxSight) to almost all of these individuals.

Their ocular dominance is evaluated. Generally, a plano result is targeted in the dominant eye and slight myopia in the nondominant eye. If the patient has a successful history of monovision, then a somewhat more aggressive target of -0.50 D is used for the nondominant eye.

In an analysis of our practice data, 80% of patients with a history of LVC choose some degree of monovision (-0.75 to -1.75 D).

CASE EXAMPLE

One of my first LAL patients—approximately 3 years ago—was a 41-year-old FBI agent and sharpshooter who had undergone myopic LASIK surgery in 2010. She reported having excellent vision for approximately 10 years after LASIK, after which she had noticed a gradual worsening of vision in each eye. She wore glasses for driving but could read without them. She was extensively involved in outdoor sports and prioritized spectacle freedom for athletics. Her right eye was dominant.

Preoperative Findings

The patient's BCVA was 20/25 OD and 20/30-2 OS. Her manifest refraction was -0.75 +0.75 x 90° = 20/25 OD and -2.25 +0.75 x 90° = 20/30-2 OS. With glare testing, her visual acuity was 20/150 OD and 20/300 OS. Slit-lamp examination findings included 1+ nuclear sclerotic and 2+ cortical changes in each eye. Axial length was 25.29 mm in the right eye and 25.58 mm in the left eye. Keratometry readings were 38.02/38.52 x 83.00 D in the right eye and 37.78/38.18 x 84.00 D in the left eye.

Surgery

The patient underwent laser cataract surgery in the left eye with a 22.00 D LAL and a refractive target of plano. One week later, she underwent the same procedure in the right eye with a 22.50 D LAL and a target of +0.03 D. Three weeks after surgery on the second eye, her UCVA was 20/20-2 OD and 20/20-1 OS.

Postoperative Adjustments and Outcome

During the trial framing performed before the first light treatment, the patient favored monovision (refractive target of -1.00 D in the left eye). She underwent the first light treatment and returned 1 week later happy with the vision in the dominant right eye and requesting more near vision in the left eye. A second light treatment was performed on the left eye

with a target of -1.25 D. One week later, her binocular UCVA was 20/20 and J1, and she was happy with her distance and near vision.

The patient underwent the first lock-in treatment in both eyes at that time and returned 2 days later for the second. In the approximately 2 years since, her refraction has been stable, and she remains happy with her visual outcome. She has also noted improvements in contrast sensitivity and image quality.

COMPLEX CASES

Compared with patients who have a history of myopic LVC, the use of an LAL can be more complex in those with a history of hyperopic LASIK (often with increased HOAs) and those who underwent radial keratotomy (RK) in the past. A stable refraction is required to plan the light treatments. I consider an LAL for post-RK eyes only if the amount of central irregular astigmatism is minimal and the patient has no central scarring.

An IC-8 Apthera lens (Bausch + Lomb) may be an option for patients with corneal irregularity or HOAs after hyperopic LASIK or RK. A mix-and-match strategy may also be considered, with an LAL placed in the dominant eye (or the eye with fewer HOAs) and an Apthera IOL placed in the nondominant eye with a slightly myopic target (approximately -0.75 D).

PATIENT COUNSELING AND EXPECTATIONS

As with other surgeries, setting realistic expectations is critical to success with the LAL. The out-of-pocket cost of an advanced technology lens elevates patients' expectations. It is important to advise those considering an LAL that success is a process—and a partnership—that requires an investment of more time and energy than for a standard IOL. Key counseling points include the following:

- Additional postoperative visits beyond routine cataract follow-up; and
- Pupillary dilation for each light adjustment and lock-in treatment.

I find that LAL patients recognize the time and attention invested by our staff and often develop a strong rapport with the refractive team. Many of these patients appreciate our commitment to optimizing their visual outcome after cataract surgery. ■

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