

# Your Sister Needs Refractive Cataract Surgery

BY R. BRUCE WALLACE III, MD

I am pleased to be working with William J. Fishkind, MD, as a section editor of the “Phaco Pearls” column. Like Dr. Fishkind, I will be inviting well-known cataract surgeons to share their recommendations on how to handle various phaco challenges. To begin my stint as section editor of this column, however, I would like to comment on an array of cataract surgical concepts that I will likely be implementing for my sister in the near future.

## PERSONAL CASE

Let’s imagine our sister is sitting before us in an examination chair. The slit-lamp examination verifies a 20/50 posterior subcapsular cataract (PSC) in her right eye and a 20/40 PSC in her left eye. Certainly, we cataract surgeons should treat each of our patients with the same dedication and attention to detail, but somehow, things change with family members and loved ones. We have been through years of training and spent hours honing our medical and surgical skills, and it is so gratifying to be able to offer such an incredible gift to an important person in our lives—spectacle-free vision for the rest of her life.

Some of us may not wish to take on this opportunity. We can easily schedule a consultation with a nearby expert in our field. However, many of us would relish delivering the desired care at our own practices.

This is not a slam-dunk case. Younger patients with PSCs, like my sister, do not always have the same predictable eye conditions as older patients with more conventional nuclear sclerotic cataracts. Sometimes, the signal-to-noise ratio with instruments like the IOLMaster (Carl Zeiss Meditec, Inc., Dublin, CA) is not high enough to measure axial lengths accurately in eyes with PSCs. Furthermore, what about her refraction, which is +2.25 +1.75 X 122 OD and +2.00 +1.50 X 67 OS? The oblique cylinder surely will not help her postoperative uncorrected visual acuity. Which presbyopia-correcting IOL will best suit her individual needs? Can our team and

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technology achieve everything she expects?

These recommendations will help us provide the best possible postoperative vision to our loved ones.

## DISCUSS IOL OPTIONS

The currently approved presbyopia-correcting IOLs consistently reduce patients’ use of spectacles, but each lens has advantages and disadvantages. Both the AcrySof IQ Restor IOL (Alcon Laboratories, Inc., Fort Worth, TX) and Tecnis Multifocal IOL (Abbott Medical Optics Inc., Santa Ana, CA) provide good near acuities, but nighttime halos can be a problem. The Crystalens (Bausch + Lomb, Rochester, NY) offers better intermediate visual acuity and no significant halos at night, yet it does not always provide dependable near visual acuity unless surgeons use mini-monovision.

Having office video presentations available to demonstrate the value of various presbyopia-correcting IOLs can help educate our sister on what she could expect after the implantation of each IOL.

## ACCURATE BIOMETRY

Every cataract patient benefits from accurate preoperative biometry, especially those receiving presbyopia-correcting IOLs. I rely heavily on the precision of the IOLMaster and recently upgraded to the new IOLMaster 500. Most patients with PSCs are now able to register a high enough

signal-to-noise ratio with the IOLMaster 500 to allow the accurate measurement of axial length without the need for ultrasonic A-scans.

Measuring corneal curvature is another step for surgical planning. Although keratometric readings on the IOLMaster 500 are more reliable, most surgeons confirm astigmatic parameters with corneal topography. On occasion, the refraction, keratometric readings, and corneal topography do not match, and it is best to wait until after surgery to perform corneal astigmatic correction.

### CATARACT SURGERY PHARMACOLOGY

Preventing infection and inflammation is obviously important. Preoperative topical fluoroquinolones and non-steroidal anti-inflammatories have become a mainstay of cataract procedures. Some studies have recorded later onsets of infection (ie, after 1 week). We therefore no longer stop the antibiotic at 7 days but direct patients to “finish the bottle,” which usually lasts 10 to 14 days.<sup>1</sup> Younger patients can exhibit a greater degree of postoperative inflammation than older ones, so more frequent postoperative topical steroids, possibly enhanced with an intraoperative sub-Tenon’s injection of triamcinolone, may be in order.

### ASTIGMATIC CORRECTION

Most of us are probably already performing limbal relaxing incisions (LRIs), so this part should be familiar. (My approach to LRIs can be viewed at <http://eyetube.net/?v=toderi>). I like to use a Mendez Marker with numbers to help me stay oriented as to axial location. I try to minimize instrumentation. For the best results, I make incisions 1.0 to 1.5 mm anterior to the surgical limbus.

### LENS REMOVAL

When operating on soft cataracts, it is important that we are not out of our comfort zone. Herein lies a problem with phaco chop: the technique is effective for a 75-year-old nuclear sclerotic cataract, but what about the spongy nucleus of a patient in her mid-50s? A full nuclear flip is not reliable if the anterior capsulotomy is 5 mm, which is desirable for capsular overlap of the optic.

For spongy, somewhat firm nuclei, I like what I have termed the *burst hemiflip method*. First, I create a deep groove in sculpting mode, followed by complete splitting of the two halves and removal of each heminucleus in quadrant mode. I use this technique for most of my cataract procedures so that, when I encounter a younger, less firm nucleus, the steps in the procedure are still familiar and comfortable. With the fluidics available on the latest phaco equipment, I find that burst hemiflip is usually more efficient than phaco chop. A video of this technique can be viewed at <http://eyetube.net/?v=kiripa>.

### THE POSTOPERATIVE EXPERIENCE

If a diffractive multifocal IOL was chosen, we can expect our loved one to notice halos, especially in winter months with more nighttime driving. Aggressive dry eye treatment can soften the annoyance and improve visual acuity, particularly at near distance. After the second eye has the same new visual system, she will be able to neuroadapt and ignore the halos most of the time. Younger patients are likely to develop posterior capsular opacification earlier, which compromises near visual acuity first after the implantation of multifocal IOLs. These eyes will probably need Nd:YAG laser treatment earlier.

### ANY ENHANCEMENT NEEDED?

If all the accurate preoperative biometry pointed us to the correct IOL power and the LRI corrected the cylinder, our loved one will likely be very grateful. However, if a refractive error limits her vision, a LASIK enhancement should be considered. Usually, this is in the first eye. I try to wait 3 months and usually perform conventional rather than customized wavefront-guided LASIK.

### CONCLUSION

Obviously, many other approaches to a case like this are possible: the implantation of toric IOLs, monovision with monofocal IOLs, or just standard cataract surgery and postoperative dependence on glasses for good vision. We are fortunate to have access to so many options.

Our loved ones may never need our expertise to recover their lost visual acuity. The real message here is that, for every patient we treat, we should imagine they are just as important as our sister. ■

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