Preoperative patient management

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Cataract surgery is a very common and predictable surgical procedure, and with the advantages of a broadening armamentarium of advanced technology intraocular lenses (ATIOLs), the ability to achieve patient satisfaction by meeting individual goals for postoperative vision continues to improve. Appropriate patient selection and preparation, however, remain critical for achieving good outcomes with ATIOL cataract surgery. At Virginia Eye Consultants, we have structured our approach to preoperative evaluation and counseling with these considerations in mind.

Preoperative evaluation

The professional staff of ophthalmologists in our multispecialty practice includes 9 cataract surgeons, 2 of which have a high-volume cataract practice. We designate 1 day each week for preoperative visits to ensure that cataract surgery patients get the attention they need and deserve. The preoperative visit takes about 3 hours. When patients are called with a reminder, they are told to be prepared for this lengthy appointment, which we believe necessary to conduct all of the required assessments and appropriately educate them about the procedure and their options for surgery.

The visit starts with taking a medical history. Then, a battery of preoperative diagnostic tests are administered by our cataract surgery technicians, the findings of which give us critical information for identifying appropriate candidates for ATIOLs and achieving good outcomes. The evaluation includes a dry eye questionnaire, Placido disc topography, advanced biometry, and LED-based topography, which is used to confirm other keratometric readings and provide information on posterior corneal astigmatism that will improve the accuracy of toric intraocular lens (IOL) calculations. All patients also undergo meibography testing to objectively review the architectural structures of the posterior lid margin. Our technicians are taught to recognize symptoms associated with dry eye disease, such as fluctuating vision and foreign body sensation, and empowered to perform additional testing such as tear osmolarity measurement when these symptoms are observed.

The cataract surgery technician also records certain key characteristics about the patient, including facts about eye dominance, height, hobbies, and occupation, as well as any mention by the patient about willingness or ability to pay for advanced technology. This information combined, with preoperative diagnostics data, provides a framework from which to discuss ATIOLs when I see the patient.

I carefully review the preoperative diagnostics to check the quality of the images and congruence of the keratometric data from different devices. Special attention is paid as to whether there is dropout of the mires on the Placido disc image or any other finding that raises suspicion for dry eye, including results of the dry eye questionnaire, complaints about fluctuating vision, or other classic symptoms. Then, examination of the ocular surface is geared accordingly because a healthy ocular surface is critical for good outcomes with ATIOL surgery.

Given that patients coming in for their preoperative evaluation are often anxious to have the operation as soon as possible, they can be upset if told they are not ready because we need to treat the ocular surface. To minimize any disappointment, patients are given a target date for scheduling surgery based on how much preparation is needed prior to surgery. At the same time, patients should understand that they will first have to be re-examined before being cleared for the procedure and that dry eye is a chronic disease that requires ongoing treatment after surgery if they are to enjoy the best vision outcome long-term and not just perioperatively.

Mild-to-moderate ocular surface abnormalities associated with dry eye disease are often sufficiently improved by treatment with a topical corticosteroid for 3 to 6 weeks, aggressive lubrication, and/or topical lifitegrast 5% or cyclosporine 0.05%. For more severe dry eye disease, the surgery date is pushed out for 2 to 3 months.

It is also important to carefully examine patients for and treat any mechanically-based corneal disease, such as nodular degeneration or epithelial basement membrane dystrophy (Figure 1). Corneal disease that is mechanically based will often need surgical intervention with a superficial keratectomy to create a regular ocular surface. I will not proceed with any presbyopia-correcting IOL surgery when the ocular surface is less than ideal.

Figure 1. Slit-lamp photo from a patient undergoing preoperative evaluation for cataract surgery shows severe epithelial basement membrane dystrophy. Topography indicated >6 D of corneal astigmatism. After superficial keratectomy, corneal astigmatism was <1 D.

Other issues that I pay particular attention to when deciding if patients are a good candidate for an ATIOL include pupillary dilation and the presence of macular disease, pseudoxefoliation, or frank zonulopathy. I would implant a toric IOL in a patient with pseudoxefoliation with the added zonuloplastic support of a capsular tension device, because implant centration is critical for good vision with a presbyopia-correcting lens. Generally, however, I would not consider this technology for a patient who has obvious zonulopathy or pseudoxefoliation. I also exclude patients from presbyopia-correcting IOLs if they have glaucoma unless the disease is mild, well-controlled, and stable and assuming there is no ocular surface toxicity from the use of topical glaucoma medications. Patients with stable mild-to-moderate glaucoma can often benefit
from combined microinvasive glaucoma surgery/ cataract surgery, including ATIOLs.

Before they see me, patients have already met with our cataract surgery counselor who has explained the various ATIOLs and the pricing packages. I tell patients that my role is to answer any questions they have so as to best serve them through a process that may be overwhelming.

**ATIOL counseling**

Patient education about cataract surgery and IOL options begins during the testing process and builds as the visit continues. Everyone who is communicating this information uses a common “speak” to enable patient comprehension.

Patients meet with the cataract counselor after their diagnostic testing is completed. To simplify the discussion and minimize patient confusion, the counselor avoids mention of specific IOL brand names or even particular categories. Instead, descriptions of the IOL options focus on how these satisfy goals for vision at different distances and their potential limitations.

With the TECNIS Symfony® and TECNIS Symfony® Toric extended-depth-of-focus IOLs (Figure 2), however, we now have a valuable new option for patients who are particularly interested in minimizing use of glasses for vision from far to intermediate (computer) distances, including patients with up to 2.5 D of preexisting astigmatism.1

Although the TECNIS Symfony® IOLs are associated with a low incidence of glare and halos, patients are counseled about the potential for these symptoms. In addition, they are told they should expect to wear reading glasses sometimes and that their optometrist will work with them to get the right prescription. Nevertheless, the near vision outcomes of patients I have implanted with the TECNIS Symfony® IOLs have far exceeded my expectations. Most of my patients are seeing J3, albeit at a slightly longer preferred reading distance compared with some multifocal IOLs. None of my TECNIS Symfony® IOL patients has had near vision less than J4.

ATIOLs are presented as an option for postoperative visual rehabilitation to all cataract surgery patients, and about 50% to 55% will proceed. In our practice, we have observed the inability to pay for anything beyond what is covered by Medicare or other insurance is the major factor driving patient decisions to choose a standard IOL. Consequently, ATIOL uptake has increased only slightly since the introduction of the TECNIS Symfony® IOLs. However, because I am able to offer the TECNIS Symfony® Toric IOL to patients with astigmatism, my mix of ATIOLs has shifted to more presbyopia-correcting IOLs and fewer monofocal toric IOLs.

**The optometric connection**

At Virginia Eye Consultants, about 75% of cataract surgery patients are referrals from our optometric network and about 40% of patients are collaboratively co-managed. The optometrists are critical partners for achieving good outcomes and patient satisfaction after cataract surgery. To best serve our patients, therefore, we do everything possible to optimize communication with the optometrists and other referring eye care providers and to keep these professionals up to date on the techniques and technologies we are using.

**Conclusion**

A thorough preoperative evaluation, management of existing ocular surface disease, and comprehensive counseling that sets realistic expectations are requisite steps for achieving good outcomes and patient satisfaction with ATIOLs. My patients have had a high level of satisfaction with the TECNIS Symfony® IOLs. The technology used, however, also makes a difference. And I can also say that happy patients make for a happy surgeon.

1TECNIS Symfony®. Toric Only

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**INDICATIONS and IMPORTANT SAFETY INFORMATION for TECNIS SYMfony and TECNIS SYMfony TORIC EXTENDED RANGE OF VISION IOLs**

**Rx Only**

**INDICATIONS for USE**

The TECNIS Symfony Extended Range of Vision IOL, Model ZXR00, is indicated for primary implantation for the visual correction of aphakia, in adult patients with less than 1 diopter of pre-existing corneal astigmatism, in whom a cataractous lens has been removed. The lens mitigates the effects of presbyopia by providing an extended depth of focus. Compared to an aspheric monofocal IOL, the lens provides improved intermediate and near visual acuity, while maintaining comparable distance visual acuity. The Model ZXR00 IOL is intended for capsular bag placement only.

The TECNIS Symfony Toric Extended Range of Vision IOL, Models ZXT100, ZXT225, ZXT300, and ZXT375, are indicated for primary implantation for the visual correction of aphakia and for reduction of residual refractive astigmatism in adult patients with greater than or equal to 1 diopter of preoperative corneal astigmatism, in whom a cataractous lens has been removed. The lens mitigates the effects of presbyopia by providing an extended depth of focus. Compared to an aspheric monofocal IOL, the lens provides improved intermediate and near visual acuity, while maintaining comparable distance visual acuity. The Model Series ZXT IOLs are indicated for capsular bag placement only.

**WARNINGS**

Patients with any of the conditions described in the Directions for Use may not be suitable candidates for an intracocular lens because the lens may exacerbate an existing condition, may interfere with diagnosis or treatment of a condition, or may pose an unreasonable risk to the patient’s eyesight. Lenses should not be placed in the ciliary sulcus. May cause a reduction in contrast sensitivity under certain conditions, compared to an aspheric monofocal IOL. Fully inform the patient of this risk before implanting the lens. Special consideration should be made in patients with musculoskeletal disease, amblyopia, cerebral irregularities, or other ocular disorder. Inform patients to exercise special caution when driving at night or in poor visibility conditions. Some visual effects may be expected due to the lens design, including: a perception of halos, glare, or starbursts around lights under nighttime conditions. They will be bothersome or very bothersome in some people, particularly in low-light illumination conditions, and on rare occasions, may be significant enough that the patient may request removal of the IOL. Rotation of the Tecnis Symfony Toric IOLs away from their intended axis can reduce their astigmatic correction, and misalignment >30° may increase postoperative refractive cylinder. If necessary, lens repositioning should occur as early as possible prior to lens encapsulation.

**PRECAUTIONS**

Interpret results with caution when refracting using autorefractors or wavefront aberrometers that utilize infrared light, or when performing a duochrome test. Confirmation of refractive with maximum plus manifest refraction technique is recommended. The ability to perform some eye treatments (e.g. nocturnal photostimulation) may be affected by the optical design. Target emmetropia for optimal visual performance. Care should be taken to achieve IOL centration, as lens decenteration may result in a patient experiencing visual disturbances under certain lighting conditions. For the Tecnis Symfony Toric IOL, variability in any preoperative surgical parameters (e.g. keratomileusis cylinder, incision location, surgeon’s estimated surgically induced astigmatism and lamellar) can influence patient outcomes. Carefully remove all iridocapsular and do not over-inflate the capsular bag at the end of the case to prevent lens rotation.

**SERIOUS ADVERSE EVENTS**

The most frequently reported serious adverse events that occurred during the clinical trial of the Tecnis Symfony lens were cystoid macular edema (2 eyes, 0.7%) and surgical reintervention for postoperative complications in 2 eyes (0.7%). No lens-related adverse events occurred during the trial.

**ATTENTION:** Reference the Directions for Use for a complete listing of Indications and Important Safety Information.

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**Figure 2. TECNIS Symfony® extended-depth-of-focus IOL**