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CATARACT SURGERY

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Premium IOLs a challenge to adopt into cataract practice

Ophthalmologists have been using premium IOLs for nearly 15 years, but as these lenses become more precise and more varied, some surgeons are having a hard time keeping up with the demands they place on their techniques.

Cataract surgeons today have to be corneal refractive surgeons, which is not something that every surgeon can accomplish. In addition, physicians and their staffs have to narrow the gap in preoperative refractive measurements, correct any diseases that affect refraction, and increase the amount of time they spend counseling patients before, during and after the operation.

The demands are causing some to defer implementing the latest technology, according to some experts in the field.

Story continues below↓

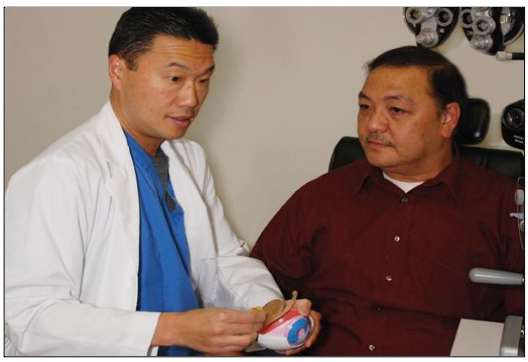
"To be really good at handling premium IOLs, you have to have a grasp of refractive surgery, and I think that's a limiting step for why you don't see more use of these IOLs," Dwayne K. Logan, MD, of Atlantis Eyecare in Southern California, said. "When doctors adopt the technology, there are other procedures to perform and a little bit more hand-holding with patients, and those types of things increase your chair time and your level of insecurity."

Premium IOLs demand a premium performance from surgeons. There are several ways to conduct preoperative and postoperative patient consults and to handle preoperative and intraoperative surgical demands.

Preoperative consult

The difficulties of working with premium IOLs start before they are even implanted.

Douglas A. Katsev, MD, of the Sansum Santa Barbara Medical Foundation Clinic, advises spending time to set up appropriate expectations. Premium IOL patients are paying more for the procedure, which makes them more demanding about outcomes.



Terry Kim, MD, has a defined regimen to treat dry eye preoperatively.
Image: Kim T

"If you don't set up the expectations appropriately, you're in for a difficult situation, and that means making sure that every patient knows that they are going to see halos and glare," Dr. Katsev said. "It's important to maintain these patients to realize that yes, you have an issue with these, but I try to point out that with each issue, there's a big plus. That plus will stay with patients for the rest of their life."

He also ensures that the office staff believes premium IOL technology can be successful.

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"If your staff doesn't believe in your results or that the technology is best for the patient, you'll find it's very hard to sell a significant percentage of your patients on this technology," he said.

He checks in with his staff to share his outcomes, solicit suggestions a[illegible]y concerns. "That can be a learning experience that will help your conversion rate if you can [illegible]at the problem is," he said.

Elizabeth A. Davis, MD, FACS, OSN Cataract Surgery Board Member, counsels patients based on what they want to achieve but sidesteps much of the potential confusion that she might otherwise generate when explaining premium IOLs to patients.


Elizabeth A. Davis

With so many premium IOL options available to patients, Dr. Davis said her practice, Minnesota Eye Consultants, is focused on functional outcomes, such as reducing the need for reading glasses or improving the ability to drive or to watch a live sporting event without glasses.

She added that she does not overwhelm the patient with details about the surgical methods.

"That's what has made things confusing and overwhelming for cataract surgeons in a lot of discussion," she said. "We go back to doing it the way we've always done it. Figure out what the refractive goals are, use what you feel is best, set up appropriate expectations, and that's what it is."

Each surgeon in the practice uses different techniques to achieve the same goals, and Dr. Davis sometimes finds herself switching methods mid-operation.

"The patients don't need to know the best way to get to that outcome," she said. "Rather than provide a menu of lenses and procedures, I just find out what is their goal functionally because that is what we're trying to achieve — functional visual outcomes."

Still, she offers premium lens choices to every patient.

"I have learned time and time again not to make assumptions because they are inevitably wrong about who will choose a vision correction option," she said.

Patients have a right to know their choices, and she sees her role as one of guiding them to a decision.

"If sometimes I don't feel that they are the best candidates for a particular lens and it might be a presbyopic lens, I will advise them of that," she said. "But I think it's important to allow the patients to make a decision based upon their lifestyle and their goals."

Precise preop measurements

A good nomogram is critical for the preoperative evaluation, Dr. Logan said. He attributes his group's success to optimizing his nomogram to produce consistent results.

"It's really important that doctors do a number of cases and track what they do via computer or that they keep some type of log of cases so that they can go back and look whether they need to make any adjustment on their measurements so they can reach their postoperative goal 95% of the time," he said.

It took 30 to 50 eyes for Dr. Logan to develop his system. While an A-constant of 118.9 is recommended, his group uses an A-constant of 119.2 to allow for plano outcomes.

Dr. Logan said he also controls for tear film insufficiency prior to biometry testing, because it can throw off an IOL calculation as much as +0.5 D.

"Every patient that I perform cataract surgery on, I place on artificial tears, and probably 95% of my cases are put on Blink Gel Tears (Abbott Medical Optics) prior to performing their A-scan," he said.

Dr. Katsev finds great use in the IOLMaster (Carl Zeiss Meditec).

"Very seldom that I ever miss on emmetropia if I've got a good scan with the IOLMaster," he said. "You occasionally get a little astigmatism that I have to touch up, but for how myopic or hyperopic, I don't have a problem with that."

However, dense posterior cataracts will throw the scan off, and when that happens, he resorts to an A-scan, which may not be as accurate.

"In that case I do like the patient to know that we may have to touch up afterward because it's very important to me that I end up with someone with good distance vision," Dr. Katsev said. "But I try to tell them they may need a touch-up LASIK after the procedure."

Prepping the ocular surface

Dry eye becomes prevalent in more than 50% of patients as they age, Dr. Katsev said.


Douglas A. Katsev

It is generally a refractive problem, so it must be specifically addressed before cataract and refractive surgery to get the optimum result from cataract surgery, whether with a premium or standard IOL, Dr. Logan said.

He reviews patients' medical histories for allergies and antihistamines that are taken for allergies. Other patients may have inflammatory diseases that require anti-inflammatory medications such as Restasis (cyclosporine ophthalmic emulsion 0.05%, Allergan) or steroids. Some people have infections of their eyelids that require topical antibiotics such as AzaSite (azithromycin ophthalmic solution 1%, InSite Vision). Dr. Logan also suggests vitamin supplements or artificial tears that contain sodium hyaluronate.

Terry Kim, MD, professor of ophthalmology at Duke Eye Center in Durham, N.C., and OSN Cornea/External Disease Board Member, has a defined regimen for dry eye that includes 1 month preoperative loteprednol four times a day along with topical cyclosporine twice a day. He tapers loteprednol over 2 weeks and continues topical cyclosporine typically 2 to 3 months after surgery.

In addition to treating blepharitis aggressively with hot compresses, lid hygiene, topical azithromycin and, if necessary, oral doxycycline, Dr. Kim recommends the use of a topical NSAID preoperatively to minimize the risk of cystoid macular edema, which can affect the quality of vision with presbyopia-correcting IOLs.

"Newer agents, such as Bromday (bromfenac ophthalmic solution 0.09%, Ista Pharmaceuticals), have demonstrated an excellent potency and penetration profile along with a more convenient once-a-day dosing regimen, which greatly improves patient compliance," he said.

For routine cases, Dr. Kim initiates NSAID therapy 1 day before cataract surgery and continues therapy for 4 to 6 weeks. For complex cases, such as patients with diabetic retinopathy, retinal vein occlusion, epiretinal membranes, uveitis or retinitis pigmentosa or those involving posterior capsule rupture, vitreous loss, iris manipulation, floppy iris syndrome or large incisions, he starts the NSAID 1 week before cataract surgery and continues treatment for 3 to 6 months.

Blepharitis can confound the outcomes of premium IOLs, Dr. Katsev said. He pre-treats almost all his patients with AzaSite or in some cases Tobradex ST (tobramycin/dexamethasone ophthalmic suspension 0.3%/0.05%, Alcon) for the more severe cases in which he needs to add a steroid-antibiotic combination.

Blepharitis treatment is also dry eye treatment because the meibomian glands secrete a better tear quality so tears do not evaporate, Dr. Katsev said. It is not uncommon to see improvements from 20/60 to 20/30 in the weeks before cataract surgery, just from improving the ocular surface.

Dr. Katsev uses Bromday for 4 weeks preoperatively to prevent cystoid macular edema as well as decrease pain and inflammation. He uses the brand-name drug because he has seen some punctate staining from generic formulations. He will also use loteprednol for 2 weeks postoperatively in patients with dry eye.

“I think it’s a great steroid, very potent,” he said. “You very seldom get pressure rises. It’s usually a non-issue in even longer duration, as much as 6 weeks.”

Dr. Kim cited work of the International Workshop on Meibomian Gland Dysfunction, launched by the Tear Film and Ocular Surface Society, which recommends that first-line treatment for mild, moderate and severe meibomian gland dysfunction include eyelid hygiene with warming followed by massage and expression of meibomian gland secretions and increased dietary omega-3 fatty acid intake, along with topical azithromycin, topical lipid-based lubricants and oral tetracycline derivatives.

He said it is also important to be aware of ocular surface conditions such as anterior basement membrane dystrophy, which he manages with superficial keratectomy, using 20% ethanol to loosen and wipe off the abnormal epithelium. If these patients also experience recurrent erosion syndrome symptoms, then he performs phototherapeutic keratectomy with a 10-µm depth treatment after the epithelial debridement. For Salzmann’s nodular degeneration, he performs a superficial keratectomy at the slit lamp or in the minor operating room using a pair of 0.12 forceps to peel the lesions off Bowman’s layer. Afterward, he places a bandage contact lens on these patients and starts a topical fourth-generation antibiotic and corticosteroid until healing is complete.

“There is a chance that you may get a small hyperopic shift with the PTK treatment, but it’s minimal. These patients usually have a much better topography, more reliable keratometry readings and better visual potential, all of which are critical to maximize prior to implanting these presbyopia-correcting lenses,” Dr. Kim said.

“The key point is to optimize the ocular surface preoperatively,” he said. “Whether it’s anterior basement dystrophy, Salzmann’s nodular degeneration or dry eye, addressing these conditions prior to cataract surgery will definitely lead to faster visual recovery and better postoperative results.”

Intraoperative pearls

Dr. Kim said it is important to remove all the cortical material before the implantation of a presbyopia-correcting IOL in order to minimize its effects on the quality of vision postoperatively.

“Because it’s more ideal to avoid a YAG posterior capsulotomy in case an IOL exchange is necessary, I polish the posterior capsule thoroughly to negate any visual impact from the cortex and hopefully retard any opacification of the posterior capsule,” he said.

Dr. Kim has switched to the single-use Alcon Intrepid polymer irrigation and aspiration tip, which was specifically designed for microincisional phacoemulsification surgery through a 2.2- to 2.4-mm clear corneal incision. The tip uses the same Ultraflow sleeve as his Intrepid phacoemulsification tip and is composed of a rigid but smooth polycarbonate polymer ideal for polishing the capsule under low vacuum settings. While it is available as a straight and 20° curved tip, he prefers the 35° bent tip, especially for grabbing the sub-incisional cortex. After removing the lens, he engages the posterior capsule with the 0.3-mm aspiration port under a linear vacuum setting of 10 mm Hg to ensure there is no residual cortical debris that can interfere with the optics of a presbyopia-correcting lens.

“The superior design of this I&A tip combined with careful surgical technique results in very efficient and thorough cleaning of the posterior capsule with minimal risk of capsule rupture,” he said. “I like to do this because otherwise you are dealing with doing a YAG capsulotomy in these patients, and if that’s not the cause of the patient’s suboptimal vision, then you may have to deal with an IOL exchange, which is obviously going to be much more difficult to do with an open capsule.”

Dr. Davis said her lens of choice is the Tecnis multifocal lens line (AMO), either a one-piece or three-piece version, because the line centers well in the capsular bag.

“I don’t have to spend a lot of time” she said. “I don’t hedge it nasally. I just center it in the bag.”

She spends more time with toric lenses, taking care to align them with the axis of astigmatism. She maintains it when removing the viscoelastic by using a second instrument to stabilize the lens.

Dr. Logan corrects astigmatism with limbal relaxing incisions. If there is 0.5 D of astigmatism, he aligns the corneal incision to the steep axis of astigmatism. Extending his corneal wound incision immediately after the cataract extraction can treat up to 0.75 D of correction

Dr. Logan said he extends his capsulorrhexis 0.5 mm beyond the diameter of the IOL to control for capsular bag contraction after the surgery. Once phaco is complete, he thoroughly cleans the posterior capsular surface to prevent premature capsular opacification because the resulting dysphotopsias described as glare and halo have an even greater impact than for standard monofocal IOLs.

Dr. Kim said, “Aim for in-the-bag implantation, complete viscoelastic removal from behind the lens and good apposition of the lens to that posterior capsular bag. I think that’s very important regardless of the lens that you are using because you don’t want residual viscoelastic material causing any forward movement of the lens that will result in a myopic shift.”

Centration is important, so Dr. Logan said he rotates the implant so that the haptics are at the 12 o’clock and 6 o’clock positions. That way, he can position the IOL along the horizontal axis and push the lens nasally or temporally to center it. He then asks his patient to look directly at the microscope light to ensure that the light reflex is centered along the patient’s optical axis.

“I’m a big centration guy,” Dr. Logan said. “Part of the reason why I get such good results is we’ve looked at over 99% of my patients, and they have excellent centration.”

To help with alignment of toric lenses, Dr. Katsev said he uses a system from TruVision that allows him to take a picture of the patient preoperatively and overlay that at the time of surgery to show the exact location of the astigmatism. This allows him to make his paracentesis stab incisions so there is no astigmatism at the end of the case.

“That’s been a great relief to me to have all these things where the alignment is set up for me through the operating microscope,” he said. “It gives me a green line that shows exactly where to put the lens, so then I have an exact axis where to put entry wound and stab incisions. It creates astigmatically neutral results.”

Postop consults and touch-ups

Despite the best consultations, measurements, ocular surface optimization and intraoperative techniques, residual refractive errors may still occur.

Much of the postoperative issue should have been set up during the preoperative consult, Dr. Katsev said.

"If you tell the patients ahead of time what real possibilities may happen, when that situation comes up, they understand," he said. "If you don't tell them ahead of time it is possible to end up with minor refractive error that needs to be corrected, when they do need a touch-up, they feel the doctor did something wrong. It's important that you let the patient know when they are a little more difficult because they're very understanding as long as they're not surprised."

Surgeons need to be capable not only of cataract surgery, but they also have to be able to perform LASIK or have access to someone who can do it for them.

Dr. Logan said he leaves his patients slightly myopic for just that reason. While multifocal implants differ, one trait they all share is distance vision. So he aims for emmetropia but tries to err on the side of 0.25 D nearsightedness to allow for refractive procedures later.

"Some guys shoot for mild hyperopia or the plus side, +0.25 D, because it extends the reading distance out a little further," Dr. Logan said. "But if they have any residual astigmatism and they correct it, they are going to make that patient even more hyperopic and take away more of their distance vision acuity."

While Dr. Katsev waits at least 4 weeks before performing touch-up surgery because longer is not always possible in his practice, Dr. Logan said he waits 3 months before considering any postoperative enhancements. This results in the need for more prolonged hand-holding.

"You're trying to reach a point where the patient is stable and has the best possible vision without spectacle correction. It's going to require some healing time to stabilize. Patience is a virtue," Dr. Logan said.

He makes available literature about each stage of healing, the process of neuroadaptation for glare and halo, and how over time those symptoms decrease and sometimes will go away completely.

"All that needs to be in writing, something they can put in their hands. Tell them to review this part of their postoperative instructions. Letting them know that this is normal, this is OK, it lessens phone calls for us and it lessens chair time. The more educated the patients are on this, the better off you're going to be," he said. – *by Ryan DuBosar*

POINT / COUNTER
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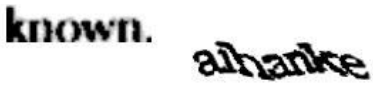
- Disclosures: Dr. Davis is on the speaker's bureau of Allergan, is a consultant to Abbott Medical Optics, Bausch + Lomb, Inspire and Ista Pharmaceuticals, and has ownership in Refractec. Dr. Katsev is a consultant to Abbott Medical Optics. He is on the speakers bureau for Bausch + Lomb and Alcon and has ownership in TruVision. Dr. Kim is a consultant for Alcon, Allergan, Bausch + Lomb, Inspire and Ista. Dr. Logan is a consultant for Abbott Medical Optics.



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