

# LENS-BASED REFRACTIVE SURGERY: THE CHANGING TIDE



Learning the procedure, increasing surgical volume, and educating fellow surgeons can all help to expand the scope of the ICL procedure.

BY MATTHEW SHARPE, MD, AND SAMIR A. MELKI, MD, PHD

## High-Quality Vision, Convenience, and Cost Effective: The ICL Lens Ticks All Boxes

Matthew Sharpe, MD

I started my own practice in 2012 with the goal of providing modern vision correction surgery in a boutique, patient-focused setting. What excited me then and what continues to excite me today is being able to customize surgery for every patient, regardless of their refractive error or visual needs, while offering them convenient, cost-effective, and exceptional care. In order to achieve these goals, patients must be offered a variety of procedures, including corneal refractive and lens-based surgery, that can be performed in the office and that can provide them with high-quality vision.

In addition to laser vision correction procedures like LASIK, I also perform lens-based procedures like the Visian ICL lens (ICL; STAAR Surgical) right in the office. This not only helps reduce the costs associated with a procedure, but more importantly it is convenient for patients because there is no need to travel to a surgery center with which they are unfamiliar. A procedure performed in-office seems more accessible to them compared with going to a surgery center for surgery; the latter can feel intimidating and more invasive to patients. Once we

removed this barrier to entry, I noticed an immediate uptick in the number of ICL procedures we were scheduling. With just a small investment in time and equipment, we were up and running and offering in-office lens-based procedures to patients.

I help patients decide which procedure is right for them based on their refractive error, the condition of their ocular surface, and their needs and expectations. Phakic IOLs are a great option in a broad range of patients because they preserve the cornea for future surgery and decrease the risk of dry eye disease after surgery. Over time, as I have gained more experience with the ICL technology, I have also found that it has a wide range of indications, including for lower levels of correction.

### A NATURAL PROGRESSION

My ICL volume continues to increase. This is partly because of the significant cost savings of doing these procedures in the office and partly because the procedure today is quite simple in my experience. I can perform about one bilateral ICL procedure every hour, which is a relatively quick turnover.

The availability of a toric model of the ICL, which corrects a wide range of astigmatism, has also led to an increase in my procedure volume because it eliminates the need to perform a LASIK enhancement for astigmatism correction. I can now treat patients with astigmatism safely and effectively in one procedure.

Patients are also more interested in the ICL than ever before. Many come in asking for this lens, which has continued to increase my growing ICL volume.

I anticipate the biggest progression in my ICL volume to occur in the future if the EVO Visian ICL is approved by the FDA. This model features a port in the center of the ICL optic to optimize the flow of aqueous fluid, eliminating the need for a Nd:YAG peripheral iridotomy. The expected benefits of this technology, once it becomes available, include more comfort for the patient and a more convenient, efficient experience for not only patients but surgeons as well.

### IDEAL CANDIDATES

The Visian ICL can be considered for much more than just the highest levels of myopia or for patients who are not LASIK candidates. I guide my decision not only on the refractive error but also on the anatomy of the eye. In patients with a thin cornea, for example, I typically recommend the ICL. Conversely, if the anterior chamber depth is too shallow for an ICL but the cornea is thick enough for laser vision correction, I recommend LASIK.

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For patients who are good candidates for both procedures, which is typically those with -7.00 D of myopia and above, I discuss the pros and cons of LASIK and the ICL with patients, and then I make a firm recommendation. I strongly favor the ICL in that -7.00 to -9.00 D range, but I also recommend it in patients with -6.00 D of myopia and below, for instance, if they have enough space in the anterior chamber to accommodate the ICL. I also favor the ICL

in patients with dry eye risk factors or a poor ocular surface because this technology is so forgiving and because it does not induce dry eye disease postoperatively.<sup>1</sup>

### CONCLUSION

I'm passionate about vision correction surgery. Having vision correction surgery as a young adult changed my life, and I love doing the same for patients. After ICL surgery, patients have said to me things like,

"I didn't think I could ever be a pilot, and now I'm going to get my pilot's license," and "I didn't think I could ever do the backwoods stuff that I can do now." There are endless stories like these from patients whose lives are literally changed forever because of their vision correction procedure.

The Visian ICL is a great option for many patients, and the more experience I gain with this technology, the greater the opportunities I see for expanding the scope of the procedure.

## See One, Do One, Teach One

Samir A. Melki, MD

Residency and Fellowship programs play an integral part in educating the future generation of ophthalmologists. In our modern refractive surgery fellowship programs at Harvard and Boston Vision, I feel it is my responsibility to teach young trainees every approach to refractive correction—both laser and lens-based—and to help them become comfortable offering them to their patients as early in their careers as possible. Giving trainees the outlet to explore as many new procedures as they can helps them learn how to provide their patients with the best outcomes possible.

In recent years, we have seen regulatory approvals for many advanced-technology IOLs. Increased Visian ICL lens (ICL, STAAR Surgical) adoption is also part of the growing role of lens-based refractive surgery. We have found that a comprehensive offering of lens and laser vision correction options are important to our patients, and we are eager to equip our residents and fellows in this manner as well.

Understanding how to fit the right procedure to the right patient is a crucial element for success in refractive surgery. Lens-based refractive surgery is therefore just as important of a skill set to learn as laser vision correction because it can be offered to a wide range of patient groups. The main thing that strikes me about the ICL is that the accuracy of the procedure,

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in my experience, is on par with cataract surgery. The second thing that I tell both my fellows and patients is that the ICL procedure has several advantages because we are not changing the shape of the cornea. As a result, the quality of the vision and night vision are great after ICL surgery.<sup>2</sup> Further, visual recovery is faster than it is after laser vision correction, and the procedure doesn't increase the risk of dry eye postoperatively because you're not touching the cornea.<sup>1</sup> Lastly, it provides flexibility for future treatments.

I began performing ICL surgery in 2006. Three or 4 years later, after developing a deeper level of comfort with the procedure, I began introducing my residents and fellows to the concepts of ICL surgery and teaching the procedure to fellows. Now, fellows are certified in the procedure before they complete their fellowship program with us.

### CONCLUSION

The ICL is a safe and effective procedure. Patients enjoy that the ICL is removable because it keeps their options open for

future procedures. I can confidently talk to patients about the ICL, and I feel that they can sense my ease. Teaching trainees how to succeed in refractive surgery, how to incorporate lens-based procedures into their practice, and how to talk to patients about their options is a rewarding and important experience. ■

1. Naves J, Carracedo G, Cacho-Babillo I. Diadenosine nucleotid measurements as dry-eye score in patients after LASIK and ICL surgery. Paper presented at: American Society of Cataract and Refractive Surgery Annual Meeting; April 20-24, 2012; Chicago.  
2. Parkhurst G. A prospective comparison of phakic collamer lenses and wavefront-optimized laser-assisted in situ keratomileusis for correction of myopia. *Clin Ophthalmol*. 2013;10:1209-1215.

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#### Important Safety Information for the Visian ICL Product Family:

The Visian ICL is indicated for phakic patients 21 to 45 years of age to correct/reduce myopia with up to 4.00 D of astigmatism with a spherical equivalent ranging from -3.00 to -20.00 D and with an anterior chamber depth (ACD) 3.0 mm or greater.

The Visian ICL is contraindicated in patients with a true ACD of <3.0 mm; with anterior chamber angle less than Grade III; who are pregnant or nursing; less than 21 years of age; and who do not meet the minimum endothelial cell density listed in the Directions For Use (DFU).

Summary of the relevant warnings, precautions and side effects: Endothelial cell loss, corneal edema, cataract, narrowing of the anterior chamber angle, pupillary block, increased intraocular pressure, glaucoma, secondary surgery to reposition, replace or remove the ICL, loss of BCVA, increase in refractive astigmatism, glare and/or halos, pigment dispersion, iris transillumination defects, endophthalmitis, hypopyon, corneal endothelial damage, ICL dislocation, cystoid macular edema, iritis, retinal detachment, vitritis, and iris prolapse.

Please review the DFU for complete safety and other information before performing the clinical procedure.