

Understanding the advantages of Enhanced Depth of Focus vision on Trifocal IOLs



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Post-Lasik cataract surgeries: The example of a patient whose job heavily relies on the quality of his sight

From dry-eye symptom to Tear Dysfunction, the side effects and complications of Lasik surgery have been well documented over the years. Those however did not cause the fairly recent slowdown in the number of Lasik surgery performed each year. Since most of the people who had decided they would undergo Lasik surgery had already seen through it, surgeons are now waiting for new candidates to grow-up and mature into a new pool of candidates. Demographically speaking the pool will certainly be a smaller one than the baby boomers who were a very large population, eager of fixing what science allowed them to. Not only that new pool needs to mature age wise, but they also need to get a job that would enable them to pay for the said surgery. The millennials do not, however, seem eager to do that –or at least not as much as their predecessors. Even after seeing the amazing results that Lasik has to offer, the money side of it makes them a lot more skittish. In addition, the idea of getting out of their glasses is not as important to them as they actually love glasses, which was definitely not the case 20 years ago. While all these new dynamics are shaping the landscape, surgeons are now dealing with patients who have undergone Lasik surgery in the past and who are now facing cataract. Whether this cataract has

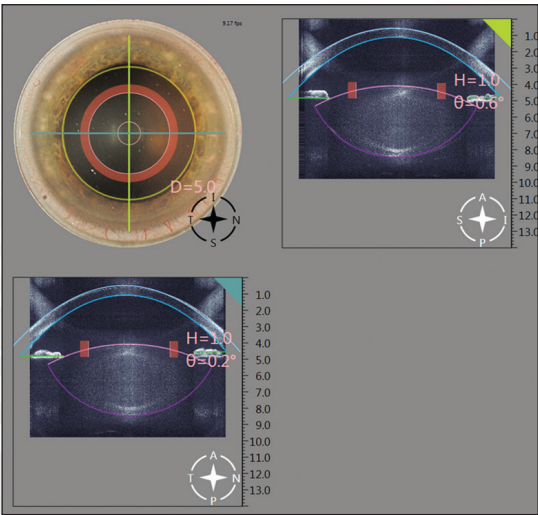
been accelerated by the Lasik itself is of little interest in the treatment of the said cataract. The issue of what to do with that kind of patients is certainly going to grow over the next twenty years. But it is unquestionably getting easier.

When I go to the O.R I do three things to make sure I get the best cataract surgery calculation : I use the regression formulas (either through the Haigis-L, that is available on the IOL Master or the Lenstar, I consult the ASCRS website who has a number of formula that you can also tap into and I use intraoperative aberrometry with the ORA. I then look at those, and those should normally agree within half a diopter –they usually do- and I can then pick my lens of choice, always trying to shoot for some slight degree of myopia, and that has worked very nicely.

Preparation is Key

I receive many questions from young ophthalmology students asking me how to maximize the visual outcomes for post-Lasik cataract surgery. My answer has always been the same: Careful preparation and good lens. If you have those two elements, then you are on to a success story.

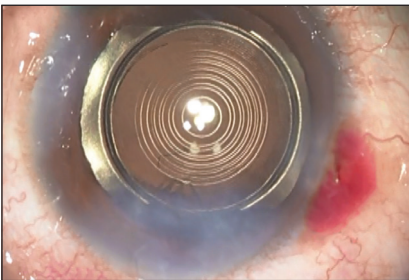
Since refractive surgery changes corneal curvature in a way that is not properly accounted for by traditional corneal measurement, when treating a cataract patient who had refractive surgery, whether it is Lasik or PRK, calculating the proper intraocular lens power to achieve



Femtosecond preoperative visual

your desired refractive goal is the main challenge, and very often the main hurdle. Surgeon then needs to use a device that would allow for more accurate measurements post refractive surgery. More recently we have also been witnessing a real surge of regression formulas that would take into account those refractive changes. In this respect, the Haigis-L has been the formula of choice for surgeon tackling that kind of cases. Another element to that diagnostic is to perform intraocular aberrometry; so using the ORA and indicating the appropriate surgery, this will give the surgeon a more accurate intraocular IOL power calculation, thus alleviating the problem that the corneal curvature changes presents for a traditional corneal curvature measurement.

There are however two elements that would represent strong contraindications: A very strong aberration (above 0.5 micro) and previous retinal damages or glaucoma. In those cases I would deem the patient as not suitable for cataract surgery. Even if some patients are not ready to hear it, it is a hard call that needs to be made.



Easy to implant, Acrya Reviol Tri-ED almost implant itself perfectly in the eye.

A Lasik patient whose job relies on his sight

The case at hand is a 50 year-old man who previously underwent Lasik surgery (performed by another surgeon). Being a web designer for a living, the patients heavily stressed how important it is for him to have a clear and crisp vision, especially for near and intermediate vision. Most of his time is spent in front of computer screens of various sizes and various degrees of luminosity. Failing at performing accurate measurements or at selecting the right lens would end this patient’s career.

Keeping that in mind I really went the extra mile when calculating the curvature and the needed power. As previously mentioned I used the ASCRS website to confront a few formulas and I seconded that initial preparatory work by calculations performed thanks to Masket and Modified Masket in Lenstar Haag-Streit. Those data added to the pre-lasik k values and refraction for calculation were strong foundations

on which I built my strategy. Given the high expectations of the patients, I knew I needed to work with a Trifocal lens and I knew it needed to be of the utmost quality. With that in mind, my choice directly went to VSY Biotechnology’s Acrya Reviol Tri-ED EDOF. Enhanced Depth of Focus technology seemed an excellent option for a patient as demanding as the one I had to treat. The near, intermediate and far visions are extremely well-balanced and I was even more interested in what the lens allows to do between those three focal points. It is indeed a real continuous vision allowing the patient to work comfortably in an office environment, going from his cell-phone screen to his computer screen and to his environment without having to squint or without experiencing dramatic visual changes... It is all very smooth. In addition, the lens in question is of a slight yellow tint, which comforts my views on blue light: filtering, not blocking. The IOL power selection was +22.0D for the right eye and +20.0D left eye. While the preparation is more intense, the surgery in itself is no different from any cataract surgery and should be approached with the same precautions.

In the consequent follow-up visits after the procedure, the patient proved extremely happy with the achieved results. A few days of adaptation later, he is now able to enjoy a sharp vision while working on his computer screen. It really is successes story from the the surgeon side and, most importantly, the patient side.

PRE-OP DATA		
Parameters	od	os
Sph(d)	1,25	0,5
Cyl(d)	-0,25 x 77	-0,5 x 83
UDVA	0,4	0,6
BCDVA	1	1

POST-OP 6-MONTH FOLLOW UP RESULTS		
Parameters	od	os
Sph(d)	0,25	0,25
Cyl(d)	-0,25 x 7	-0,5 x 49
UCVA distance	1.5	1.2
UCVA intermediate	1	1
UCVA near	1	0.9

Pre-Op parameters / Post-Op Clinical Results