Addressing Post-LASIK Complications with Contact Lens Designs

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Fortunately for patients and for refractive surgery providers, and I have been both in the past 19 years, post-Lasik complications are rare and have decreased in number in the past decade with the advent of customized wavefront ablations. Most sources indicate the true number of complications has been under-reported since LASIK and PRK began, but all agree that the number of complications today is about half the complication incidence of the first decade of PRK and LASIK.

Post-LASIK ectasia is the most serious complication that we encounter, with a reported incidence of 1 in 2500 cases today. The risk factors associated with post-LASIK ectasia include deep ablation, forme fruste keratoconus, and thin corneas, although many cases have occurred with no risk factors.

Decentered ablations are also a visually significant and infrequent complication of LASIK eye surgery. Decentered ablations of as little as 0.5mm can induce higher order aberrations with symptoms of ghosting, glare, blur, fluctuating vision, and loss of best corrected spectacle acuity. With dry eye which often exacerbates following LASIK, these symptoms can leave the patient with less than functional vision during much of the day, and especially the night.

Post-LASIK patients who have any of the visual complaints above should receive a thorough examination to include topography and dry eye evaluation. If the cause of their visual complaints can be attributed to an irregular corneal surface, proceed with contact lenses as a therapeutic solution.

In my specialty contact lens practice, I have many “tools” or contact lens options available to “smooth out” or provide a more regular refracting surface. My philosophy is to always start with the easiest option feasible for each patient. Sometimes, in mild irregularities such as an ectasia of less than 1.5 D, this could be a stiff modulus soft disposable. If the ectasia or decentered ablation is substantial, I know I need to provide a new rigid surface over the pupil that centers well and does not fluctuate with blinking. That leaves me with the choice of a hybrid contact lens design or a scleral contact lens design, and in my practice, hybrid contact lens designs almost always win over scleral designs in patient ease of use and comfort.

Let me share a recent patient encounter on post-LASIK decentered ablations. This new patient was referred to me by her specialty lens optometrist in Dallas after she relocated to Tulsa, OK. She had LASIK in 2004 in Dallas. Her doctor found my name on the SynergEyes® website as a platinum provider of hybrid lenses. The patient was wearing new prolate design scleral lenses that were less than one year old. She had also previously worn KeraSoft lenses from this same doctor. Her chief complaint was unsatisfactory vision, especially in the right eye, and comfort issues later in the day with her lenses. Best spectacle refraction was OD -1.50 20/30- fluctuating and OS +1.50 20/30. So, with an induced anisometropia of 3 diopters and unstable refraction, glasses were not deemed an option. Slit lamp examination was normal, with a normal tear film. DFE revealed a small nevus OS and scleral crescents OU.

Topography revealed a LASIK pattern OU with high spherical aberration and decentered ablation OS and trefoil pattern centrally OD. My initial choice for this patient was the UltraHealth® FC (flat curve) by SynergEyes. This lens has been in my toolbox for about a year, and it is a great design for post-refractive surgeries, as well as many corneal grafts. I ordered based on one trial lens evaluation on each eye.
Upon follow-up 3 days after dispense, she felt the left eye was perfect and the most comfortable lens she had worn since LASIK. The right eye was not as comfortable but good, so we made a vault parameter change, and when that did not improve comfort, I changed to the UltraHealth® lens which provided better comfort for her right eye. It is not uncommon in sclerals or hybrids to sometimes use a prolate design on one eye and an oblate design on the other to improve comfort or clarity. With the UltraHealth FC, I now have that option.

SynergEyes hybrid contact lenses are the most effective tools I have had in my toolbox for the past 8 years. They have enabled me to provide comfortable, all day lens wear to hundreds of irregular cornea patients as well as providing superior optics. At least 1 new patient a month seeks my help based on their online research for advanced contact lens options via the SynergEyes website. Thank you, SynergEyes, for continuing to innovate, revolutionize, and improve the lives of so many patients!