

INTRODUCTION

LASIK surgery can be life-changing for many people. Unfortunately, some people only experience negative results from a LASIK procedure. For example, patients with post-LASIK ectasia and irregular astigmatism often have difficulties with glare and achieving acceptable vision in either glasses or standard contact lenses. A corneal transplant may even be considered if the ectasia is advanced. Rigid gas permeable lenses, especially scleral lenses, are a great option for patients who exhibit dry eyes, irregular astigmatism, and are otherwise unhappy in their glasses or soft contact lenses.

HISTORY

A 47-year-old white female was referred for a contact lens fit. She has a history of bilateral LASIK 18 years ago with an enhancement OS shortly after followed by LASIK flap melt OS. She also suffers from ocular surface disease that precluded comfortable corneal GP wear. Flap amputation and lamellar keratoplasty were both recommended.

EXAMINATION

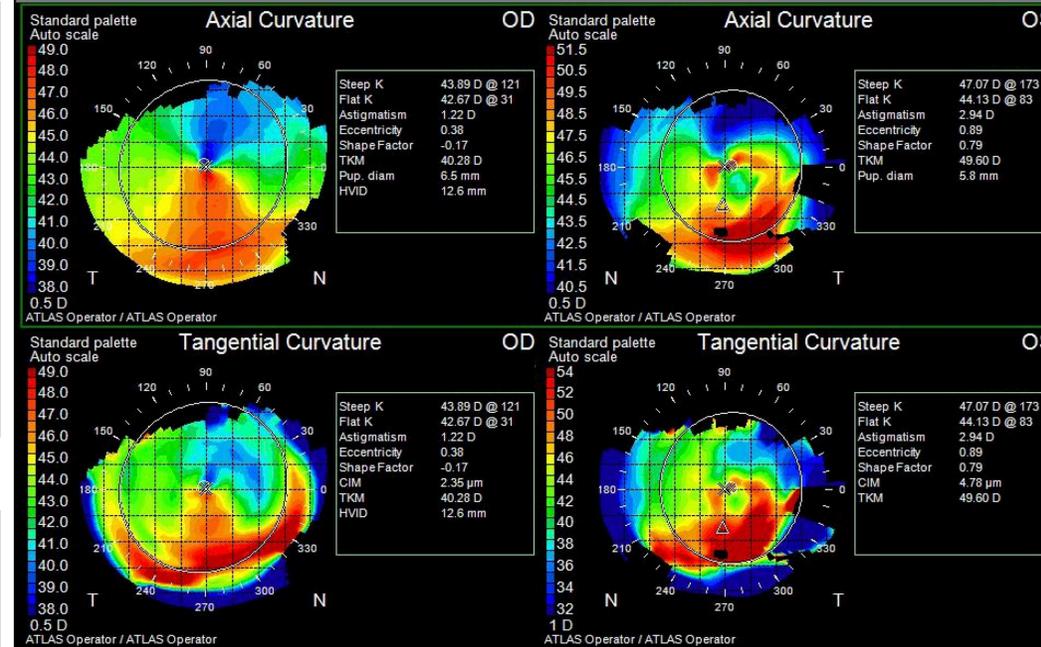
Medical History: Anxiety

Ocular History: LASIK OU, enhancement OS, flap melt OS, ocular surface disease OU

Contact Lens History: Does not tolerate corneal RGP wear due to dryness

FINDINGS	OD	OS
Uncorrected VA	20/40	20/100
Spectacle Rx	Plano	+4.25-9.00x080
External evaluation	Normal	Normal
Biomechanics exam	Lids: Mild blepharitis Cornea: Inferior PEE, LASIK scar, otherwise clear Lens: PCIOL	Lids: Mild blepharitis Cornea: Inferior PEE, inferior neo, diffuse scarring 360, LASIK scar Lens: PCIOL
Keratometry (simK)	43.89 @ 121 42.67 @ 031	47.07 @ 173 44.13 @ 083

TESTING



- Topographic testing revealed significant irregular astigmatism of both eyes with inferior ectasia OS>OD.
- Pachymetry readings were 503 microns OD and 330 microns OS
- Macular OCT demonstrated normal foveal architecture OU

FINAL LENS PARAMETERS

OD	Blanchard onefit 2.0	7.80 BC	Standard PC	14.9 dia	Plano 20/20
OS	Blanchard onefit 2.0	7.50 BC	Standard PC	14.9 dia	-1.00 sph 20/20

RESULTS

This patient was referred for a contact lens fitting prior to either flap amputation or lamellar keratoplasty to provide a more regular corneal surface in light of post-LASIK ectasia and irregular astigmatism. Scleral contact lens fitting demonstrated adequate apical and limbal clearance and improved visual acuity OU. This patient reported improvement in her dry eye and was pleased with all day comfort and great vision. She was also happy that she does not have to consider a surgical intervention at this time. Luckily, her corneal specialist recognized her visual potential with contact lenses and held off on any surgeries.

DISCUSSION AND CONCLUSION

Corneal ectasia is a rare and devastating complication in patients after refractive surgery. Patients with corneal ectasia can show progressive myopia and/or irregular astigmatism with inferior to central steepening. This can present early after the surgery, or even years later. The actual incidence of ectasia is unclear, as many believe it to be greatly under reported. Post-LASIK, the incidence range of ectasia is around 0.04%-0.6%. Many also agree that the incidence of post-LASIK ectasia can be reduced with better pre-operative testing and proper candidate selection. Preoperative risk factors for ectasia include corneal thickness and irregular topography.

Ocular surface disease should also be considered in the patient selection process. Dry eye is the most common consequence of LASIK, although it is usually a short-term problem. LASIK adds to patient's signs and symptoms of dry eyes as the procedure damages corneal nerves and goblet cells during the creation of the flap. Inflammation during the healing process can also worsen pre-existing dry eye conditions.

While the goal of LASIK for many patients is to avoid contact lenses and glasses, in patients with poor outcomes, specialty contact lenses are often the best route to improve vision and comfort. Scleral contact lenses are often a viable option for patients who have corneal irregularities. This patient suffers from corneal irregularities from both post-LASIK and dry eye disease. Scleral lenses offered her refractive correction beyond the limitation of glasses and soothed her dry eye by providing all day moisture to the surface of her eyes. In this case, we do not know if our patient suffered from dry eye before her LASIK procedure, or if LASIK exacerbated her symptoms.

This case also highlights the importance of proper refractive surgery candidate selection, as our patient was not likely an ideal candidate to begin with. Ideally, as technology improves for screening pre-operative patients, fewer cases will result in post-refractive surgery ectasias. For those that do, scleral lenses could provide a restoration of adequate visual function.

REFERENCES

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