

INTRODUCTION

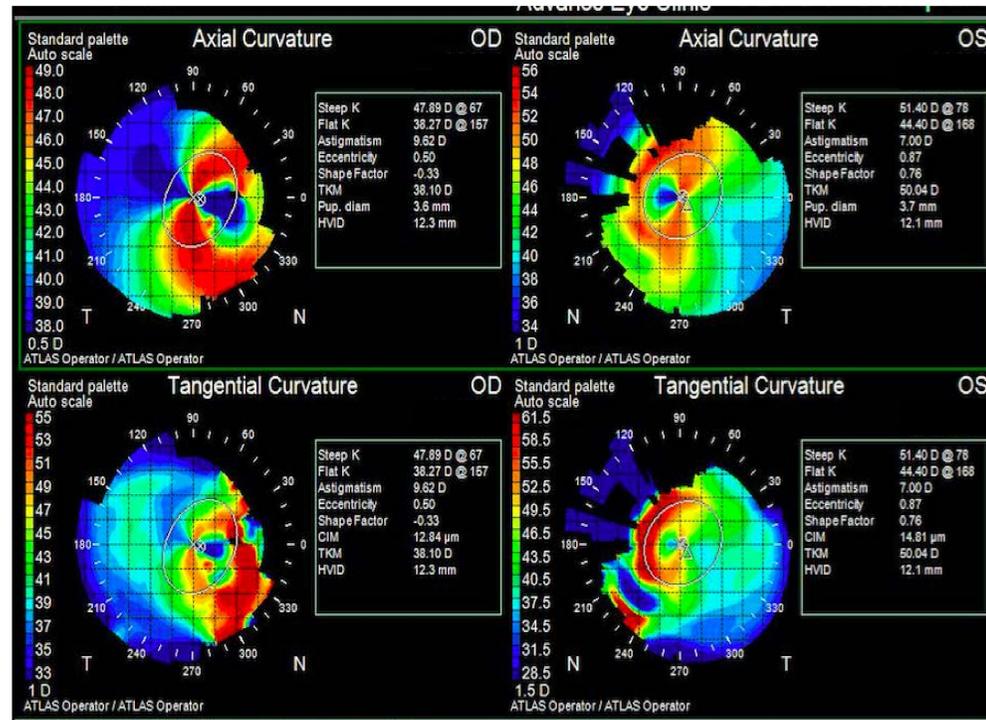
A pterygium is excess growth of the conjunctiva that extends in a triangular shape towards the cornea. In worse cases, the pterygium grows onto the visual axis and recedes vision. Pterygium removal involves excising the excess conjunctiva, placing a graft of tissue from underneath the eyelid, and stitching it in place so there is no open wound. Even after a successful surgery, patients are left with a scar. The objective of this case report is to demonstrate how a scleral lens provides a clear and more regular refracting surface, resulting in better visual acuity than spectacles.

CASE HISTORY

A 66 year-old African American male with a history of bi-nasal pterygia removal presents for a new contact lens fit. He is referred from a corneal ophthalmologist, following successful pterygium removal surgeries in both eyes, yet leaving an irregular corneal surface. The patient had entering acuities of 20/25 OD and 20/30 OS in glasses. Corneal topographies revealed steepening nasally and irregular astigmatism in both eyes. The patient had never worn contact lenses before but knew he wanted clearer vision.

EXAMINATION	OD	OS
Entering Visual Acuities (in glasses)	20/25	20/30
Spectacle Rx	+2.50 NVO	+2.50 NVO
Slit Lamp Evaluation	(+) excavated corneal graft nasally (+) residual pterygium nasally	(+) excavated corneal graft nasally (+) residual pterygium nasally
HVID	12.3mm	12.1mm
Pupil diameter	3.6mm	3.7mm

TOPOGRAPHY



RESULTS

The patient was successfully fit in scleral contact lenses over the distorted cornea. The AVT Scleral fitting set was utilized to fit the patient. AVT offers three types of scleral lenses including: Scleral Standard for majority of corneas, Scleral LC for enhanced limbal clearance designs, and Scleral RC for a reverse curve design. AVT standard trial lenses were ordered for the right and left eye with a +5.00/+0.75 over-refraction, resulting in 20/20 OD/OS.

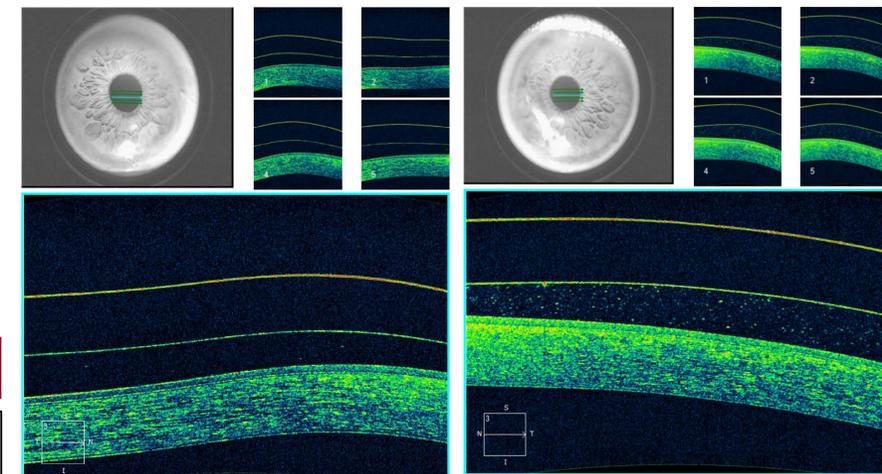
Three weeks later, the patient returned to dispense the new scleral lenses and for insertion and removal training. The visual acuity in the new lenses resulting in 20/20 VA OD, OS with plano over-refraction. The right lens showed minor edge lift nasally and the left lens showed some touch superiorly.

The patient returned to clinic in two weeks to evaluate lens fit after wearing the lens for a few hours before the appointment. The patient reported not only improved visual acuity but improvement in "distortions" and contrast as well.

The patient returned for a 6 month follow up and was happy with his vision and comfort. The fit was still acceptable with minor scratches on each lens. His vision was 20/20 OD/OS at distance and the patient reported using NVO glasses.

LENS PARAMETERS

FINAL Scleral Lens Parameters	AVT Scleral Lens
Base Curve	8.44 7.50
Sagittal Depth	4000 4400
Back Vertex Power	+2.00 -3.25 ADD: +2.00 ADD: +2.00
Diameter	16.1 16.1



DISCUSSION AND CONCLUSION

Scarring after a pterygium removal surgery is a known complication that can lead to degraded vision, irregular astigmatism and increased aberrations. An irregular corneal surface can not only reduce the ability of spectacles providing "20/20" vision, but it can induce increased aberrations and decreased contrast sensitivity. In this case, a contact lens created a spherical refracting surface that provided a sharper image. The patient was able to obtain 20/20 vision both eyes and experienced great comfort, even as a first time lens wearer. The biggest impact was the patient's improvement in clarity and decreased distortions. Our results with this patient showed that scleral lens technology can help post-operative patients to regain their 20/20 vision with excellent comfort and ease.

REFERENCES

- <https://www.aao.org/focalpointssnippetdetail.aspx?id=570dfacea-6ece-4d5a-b845-c2912546e0833>
- Advanced Vision Technologies (accessed August 15 2017) <http://www.avtlens.com/products/avt-scleral/>