

CASE DESCRIPTION

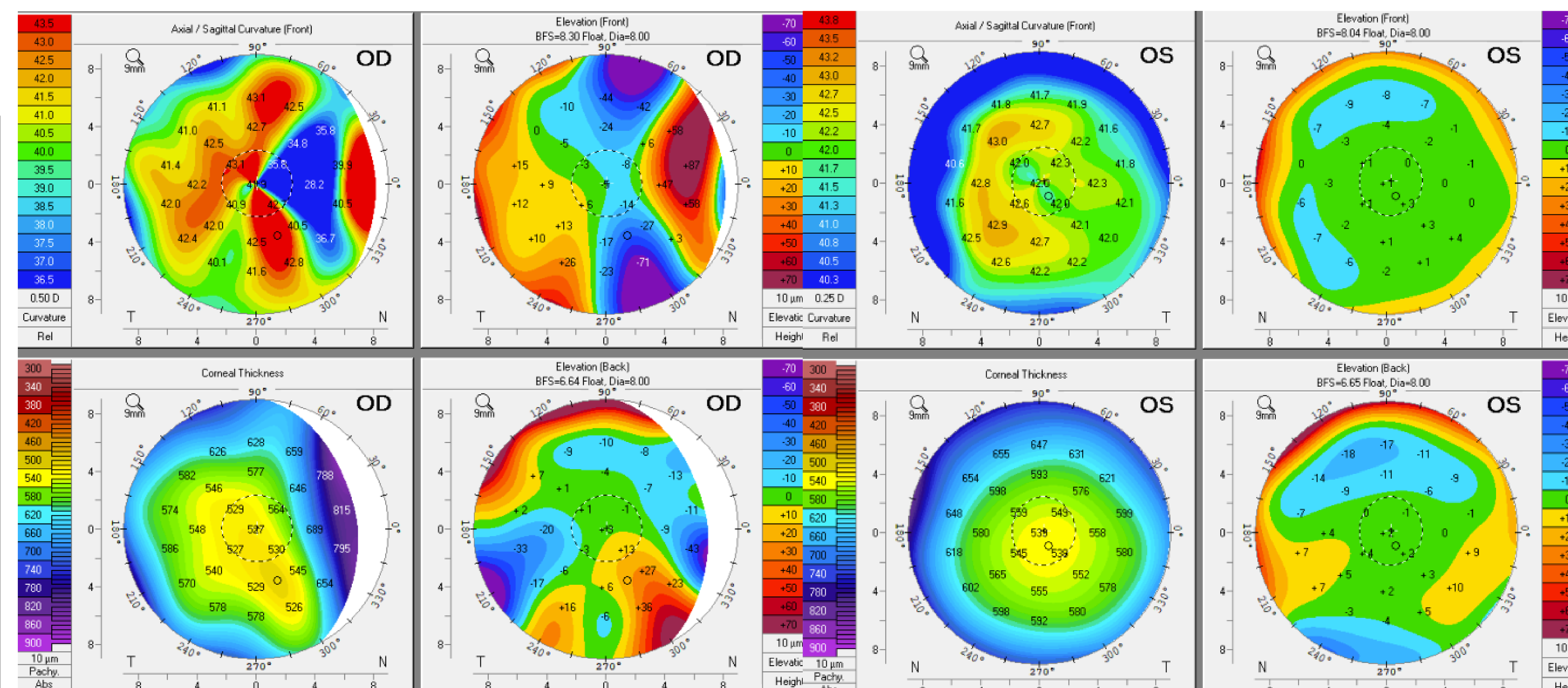
A 63-year-old African American female presents to the university clinic for a specialty contact lens evaluation. The patient had a chief complaint of glare and blur through her habitual spectacle correction and current soft CLs. Upon slit lamp examination, it was noted that the patient had very irregular corneas as a result of pterygium excision many years prior. Topographies further confirmed highly irregular corneas OD>OS with high amounts of corneal astigmatism. The patient was open to exploring the use of specialty lenses to maximize visual potential. Due to her highly irregular corneas, particularly in the right eye, rigid gas permeable lenses would likely be unstable and the options of scleral lenses or hybrid lenses were offered. However, she was not open to the option of scleral lenses due to size and fear of difficulties with inserting lenses. Thus, she was fit with hybrid lenses.

Exam findings

- **POH:** Pterygium excision surgery nasally and temporally OD and OS in 1980.
- **Entering VA:** w/ current soft CLs OD & OS 20/50-2. Pinhole OD 20/30+2, OS 20/40+2
- **SLE:**
 - Cornea/Conjunctiva OD/OS Normal endothelium, epithelium, and tear film. Corneal stromal scarring with pannus Temporal and Nasal from limbus onto cornea s/p pterygium surgery OD>>OS

Ancillary testing

- **Pentacam Tomography scans (Figure 1 & 2)** These scans show the large amount of corneal irregularity and corneal astigmatism, significantly greater in the right eye than the left eye.



Final Lens Parameters

	BC	Skirt	Pwr	Adjustment	Fit	BCVA
OD	8.1	Med	-6.25	Enhanced profile	Diffuse NaFL pattern w/ good centration (+) push-up test	20/25-2
OS	7.8	Med	-10.50	Enhanced Profile		20/25

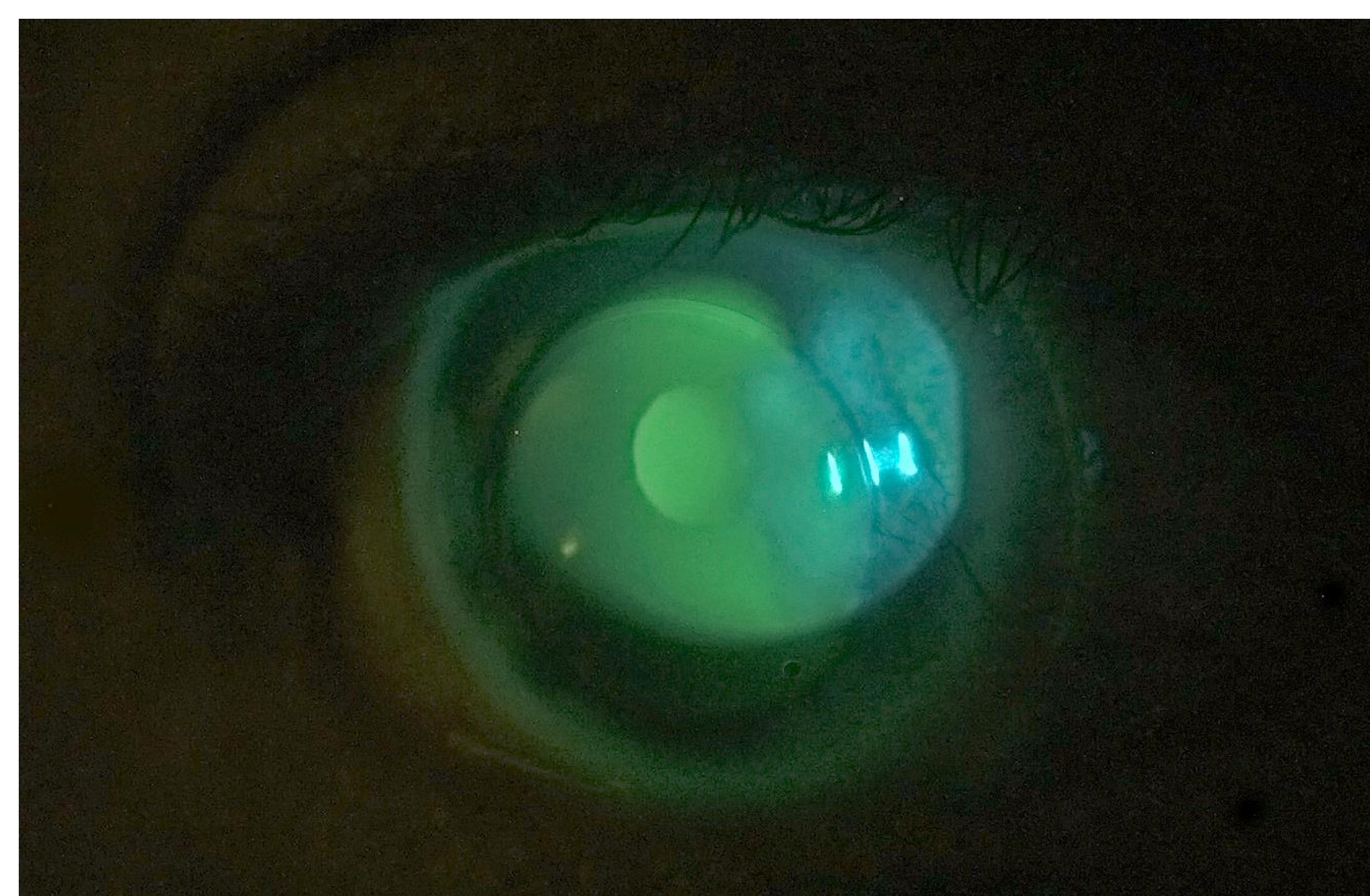


Figure 3: Picture of patient's right eye with Hybrid lens showing good centration on eye over corneal irregularities due to scarring and Pannus on nasal and temporal aspects of the cornea. The lens, with its rigid center and soft outer skirt, conforms to the unique contours of the eye, creating a tailored and comfortable fit.

MANAGEMENT

When deciding on the type of hybrid lens, the possibility of needing a multifocal option down the road was considered, leading to fitting the patient with SynergEyes Duette lenses. Adequate lens adjustments were made to obtain an evenly distributed fluorescein pattern with good centration, and proper eye movement. Enhanced profile was used to avoid possible flexure from the high irregularities. Final lenses were dispensed after only three visits. VA was 20/25 OD and OS even months after dispensing.

Figure 4: Fluorescein assessment is a crucial tool in the fitting and evaluation of contact lenses, including hybrid contact lenses. It allows practitioners to observe the alignment, movement, and centration of the hybrid lenses. Fluorescein can reveal any deformation or warping of the lens on the eye, in particular in cases with large amounts of irregularities.



DISCUSSION

With highly irregular corneas, it can often be difficult to achieve best corrected visual acuities through spectacles and soft contact lenses. There should be consideration of specialty contact lenses to essentially create a new refractive surface that masks the corneal irregularities. While soft contact lenses may be the more comfortable option for many, there could be complications such as excessive dryness, poor fit, and ultimately poor vision correction when fitting them on a patient with pterygia. This is because of the soft lens draping over the irregularities without the ability to mask them. Small diameter RGP lenses can be a good option when attempting to avoid interaction with pterygia. Scleral lenses can also be a valuable option but can come with fitting challenges. Overall, the main goal of any lens fitting is to achieve the most optimal fit that can be obtained which lessens the issues of inflammation and irritation.

CONCLUSION

There are many reasons for why a patient might suffer from irregular corneas. In this case, the current irregularities of her cornea are due to a surgical procedure of removing pterygia which had been causing a problem at some point. While the surgery was successful in many ways, it ultimately did come with some future complications which included residual scarring and the possibility of recurrence of the condition. When selecting a lens modality, it is important to consider corneal topography and the patient's concerns. While scleral lenses are currently popular options in cases like this, hybrid lenses can be ideal for patients with corneal astigmatism who have difficulty in achieving optimal vision with soft lenses or are concerned about comfort and ease of using specialty lenses.

ACKNOWLEDGMENTS

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