

Corneal Ectasia Following Pseudomonas Infection in a Contact Lens Wearer

Elizabeth M. Marshall- Illinois College of Optometry, Chicago, IL
Andrew J. Ritter, OD, FAAO- University of Minnesota, Minneapolis, MN

Background

Contact lens related corneal ulcers require prompt and aggressive management due to the risk of permanent vision loss. In contact lens wearers, the most common type of infectious corneal ulcer is due to the microorganism *Pseudomonas aeruginosa*. After treatment, corneal scarring and irregular astigmatism may occur. Glasses and soft lenses may not correct for these abnormalities. For these patients, specialty lenses may provide the best visual outcomes.

Case BD

A 14 yo Caucasian female presents for a GP contact lens fitting following a contact lens related central corneal ulcer OD. She was effectively treated for a *pseudomonas* infection, but the infection resulted in central corneal ectasia and an uncorrected DVA of 8/200, PH to 20/60.

POHx: Myopia OU, Soft CL wear OU
PMHx: Unremarkable
Medications: Pred Acetate 1% taper OD, PFATs qhr OD

Initial Presentation:

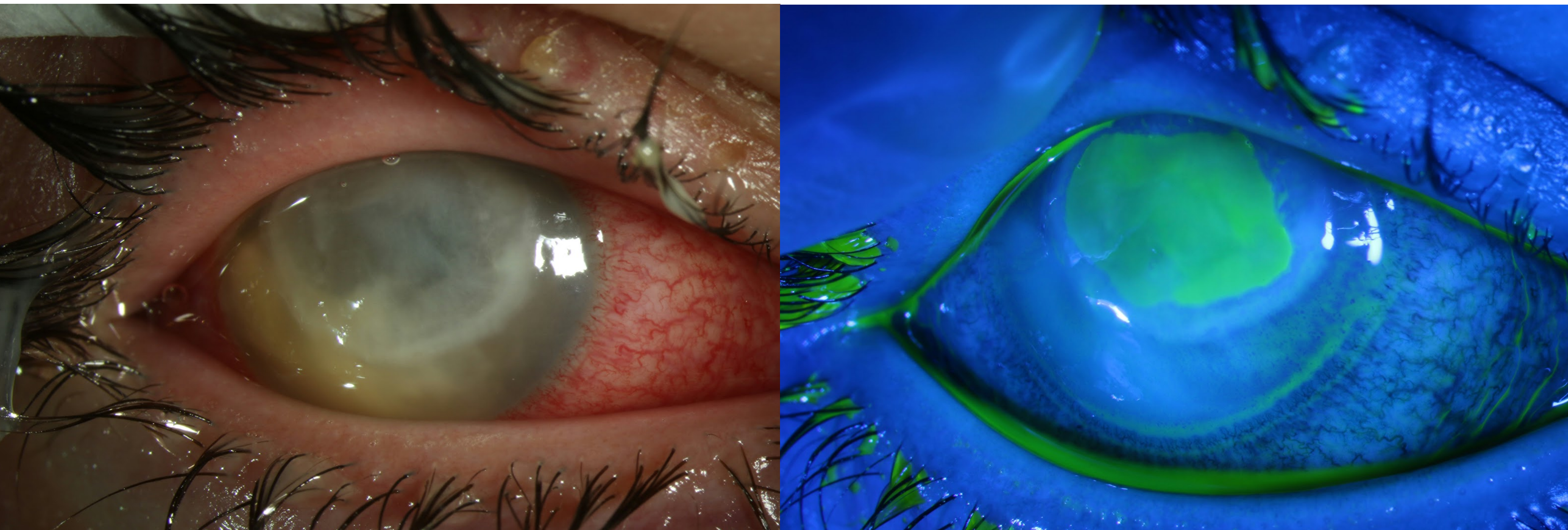


Figure 1. Slit lamp photos of initial ocular presentation of patient BD with and without fluorescein staining. 15% thinning under 5.2 x 6.0 mm superior central corneal ulcer.

	OD
Cornea	No epithelial defect, central edema, mid-peripheral thinning to 50%, moderate diffuse stromal scarring
Keratometry	57.87/45.87@058
Topography	CIM: 8.13 Shape Factor: -0.44

Table 1. Pertinent Findings OD 50 Days after Initial Presentation.

The Fitting Process

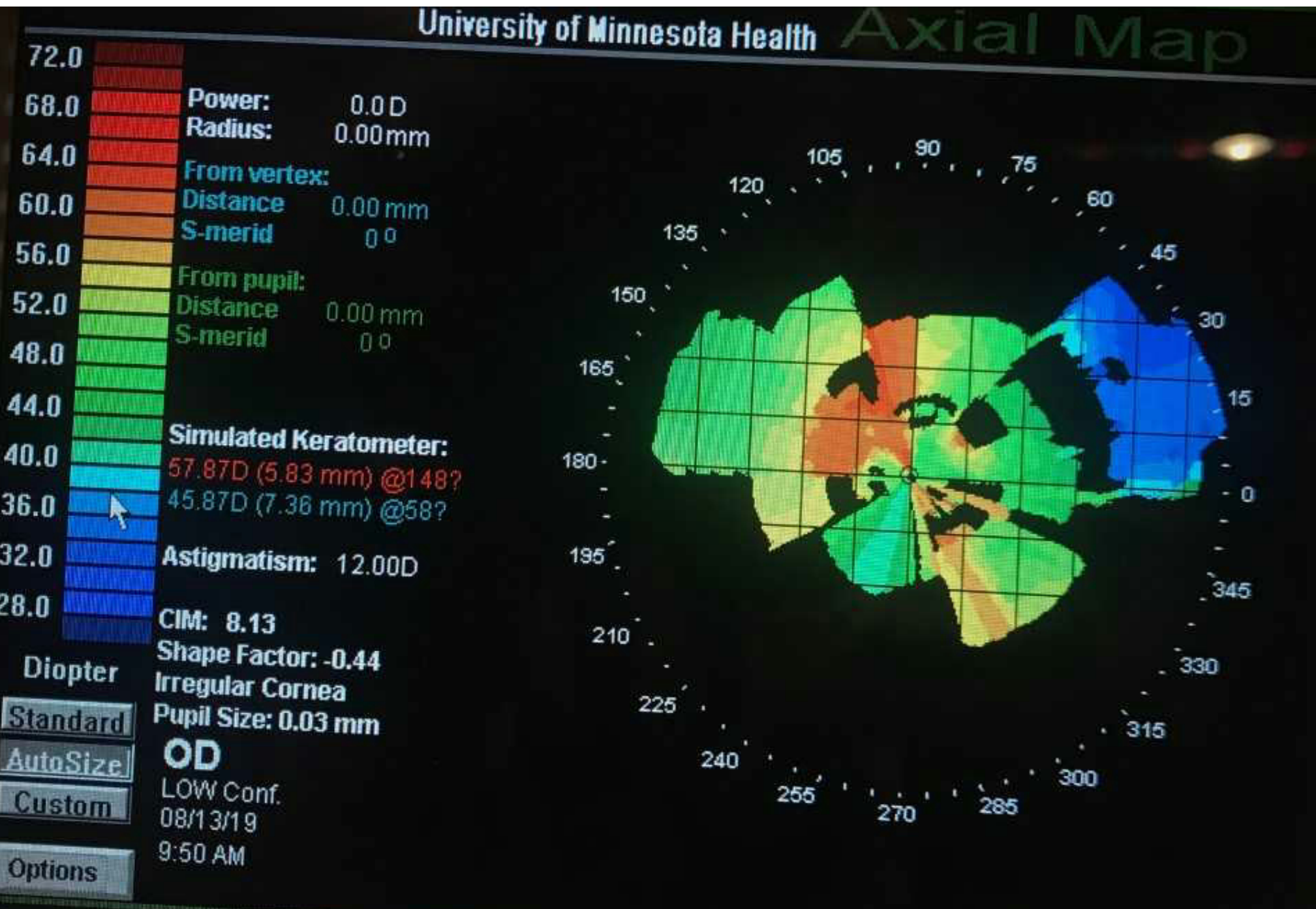


Figure 2. Axial Map OD, summarized findings in Table 1.

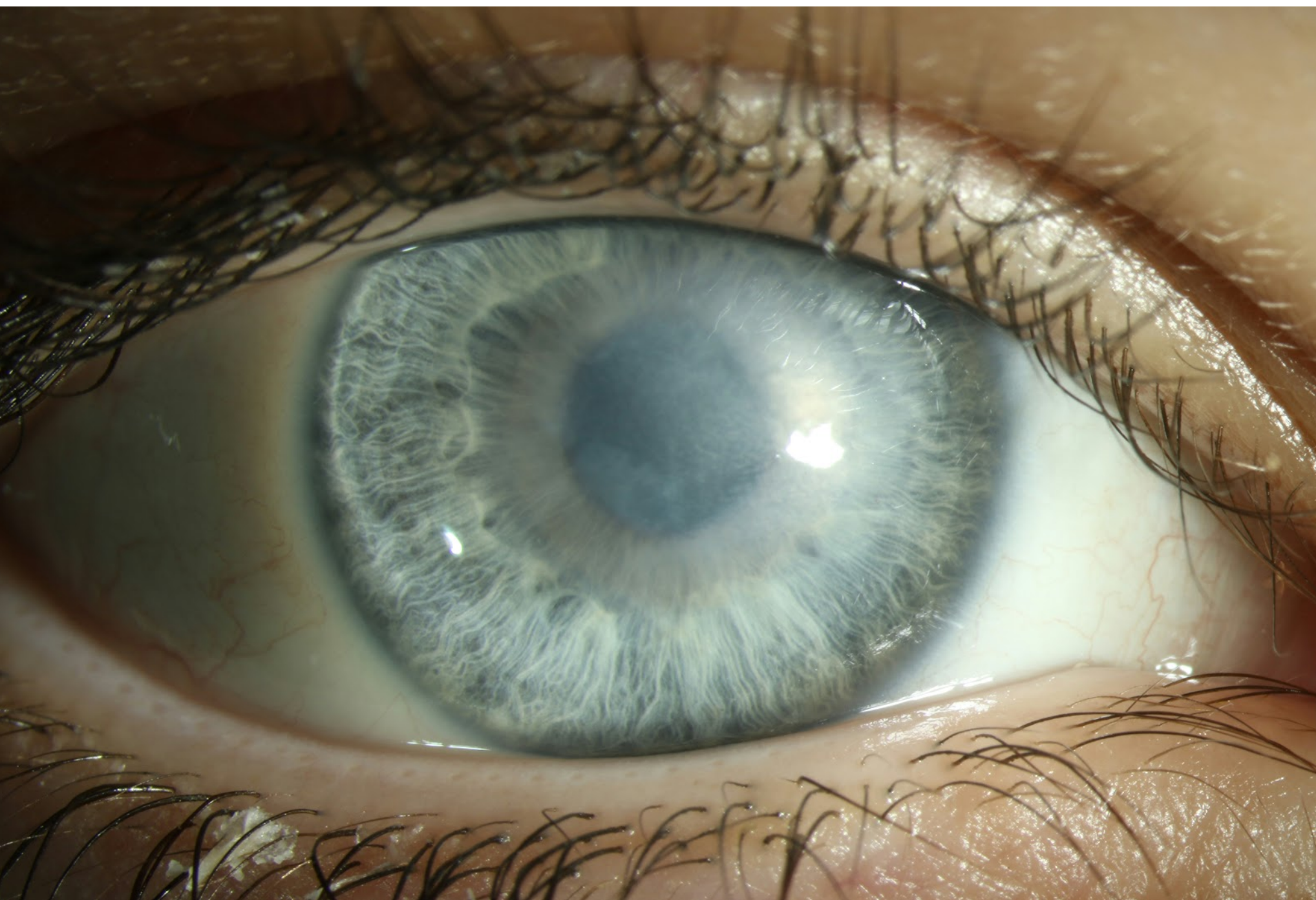


Figure 3. Slit lamp photo OD 50 days after initial presentation. Central corneal ulcer is resolved.

Initial Fitting: RGP	Brand	BC/Dia.	Power	Fit		OR & VA
	Oxyflow	7.2/9.2 mm	-3.00D	Unstable- good centration, central touch, peripheral pooling		-2.75D, 20/40-1
Follow-Up 1: Scleral Fitting	Brand	BC/Dia.	Power	Sag. Depth	SLZ	Fit
	SynergEyes VS	8.4/16.0 mm	Plano	3600 µm	36-42	Good centration, vault > thickness of lens, limbal clearance & landing zone adequate
Follow-Up 2: Scleral Fitting	Brand	BC/Dia.	Power	Sag. Depth	SLZ	Fit
	SynergEyes VS	8.4/16.0 mm	+1.25D	3500 µm	36-42	Good centration, vault ¾ thickness of lens, limbal clearance & landing zone adequate

Conclusion

The patient initially presented for an RGP fitting for corneal ectasia following a contact lens related *pseudomonas aeruginosa* infection. The amount of irregular astigmatism caused instability of the RGP lens. After obtaining topography and keratometry, the patient returned for a trial scleral lens fitting.

Upon follow-up for the scleral lens, near perfect fit and vision were obtained with a small OR. A new lens was ordered with an adjustment to the sagittal depth and power. When the patient returned, lens fit was excellent, but VA was 20/40. After OR, a VA of 20/20 was obtained but within minutes her VA declined to 20/40. Despite re-evaluation of the lens and OR, improved vision could not be obtained. Given the excellent fit and overall improvement in vision, the lens was dispensed. The fit has yet to be re-evaluated.