



Progressive Corneal Normalization After Acanthamoeba Keratitis in the Presence of Scleral Lens Wear



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Background

Acanthamoeba keratitis (AK) is defined as a corneal infection caused by a free-living amoeba resulting in stromal infiltration and subsequent scarring. This case report details a patient who was referred for a scleral lens fit after confirmed diagnosis of AK with confocal microscopy and treatment by a corneal specialist. After 3 months of scleral lens wear and consecutive topography and pachymetric measurements, corneal sphericalization and pachymetric thickening were observed.

Case

A 25-year-old female presented for a contact lens (CL) fitting OD with the chief complaint of constant distorted vision at all distances secondary to AK. Her entering visual acuity (VA) OD was 20/400. The patient was initially fit in a corneal gas permeable CL to promote corneal health; however, when an acceptable fit with functional vision was not achievable, she was fit into a scleral CL.

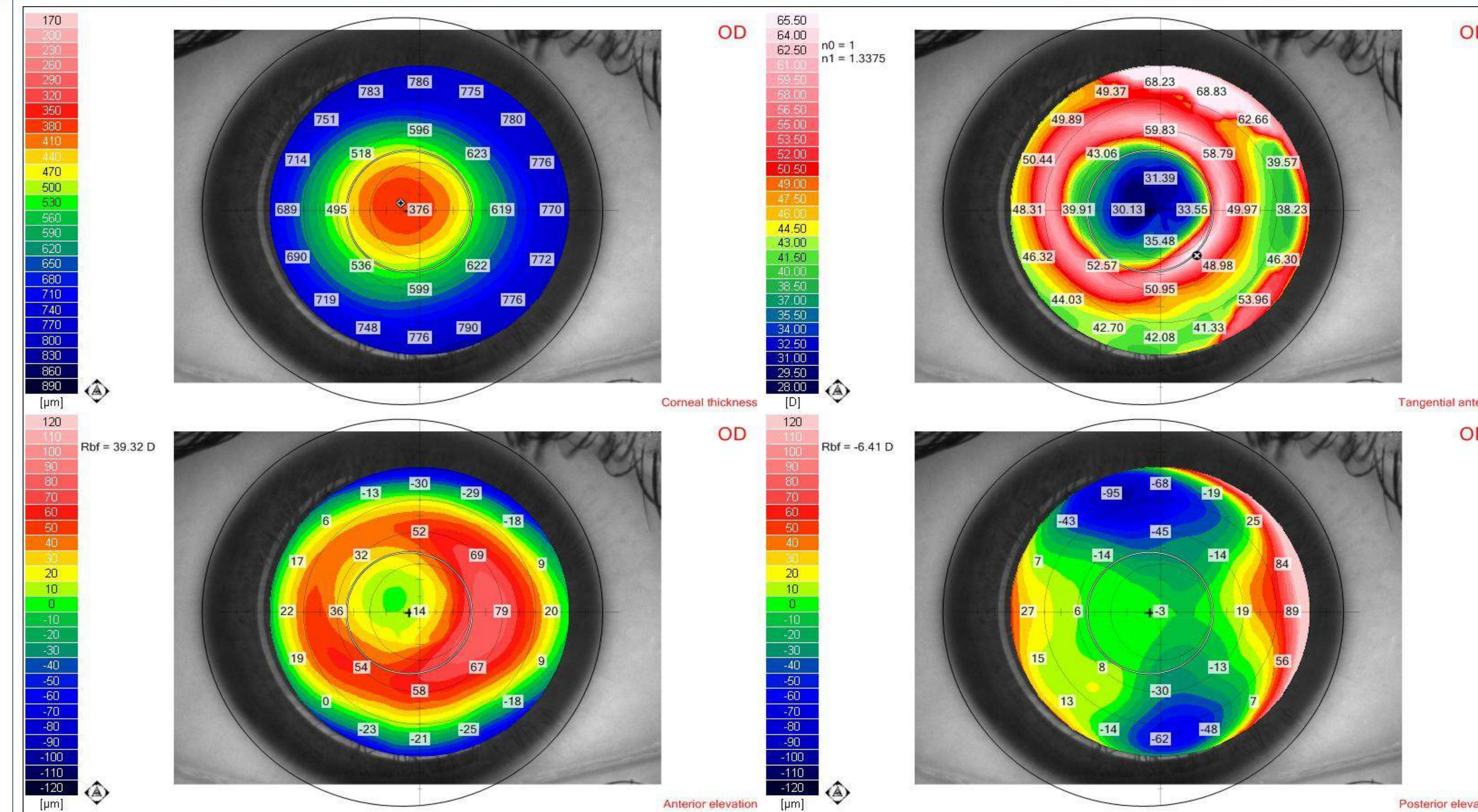


Photo 3: Pulsar topography on 2/2018 reveals central thinning and flattening

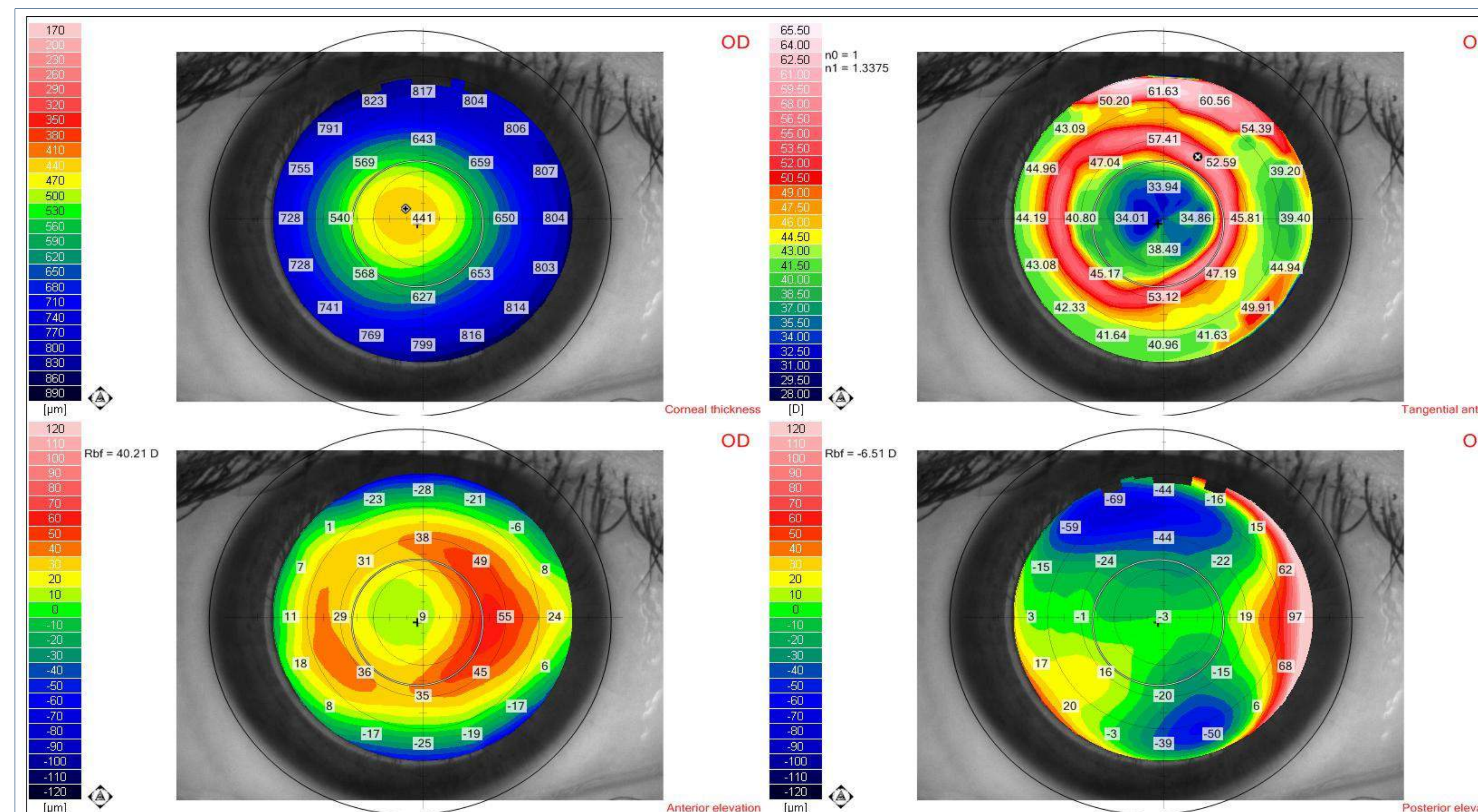


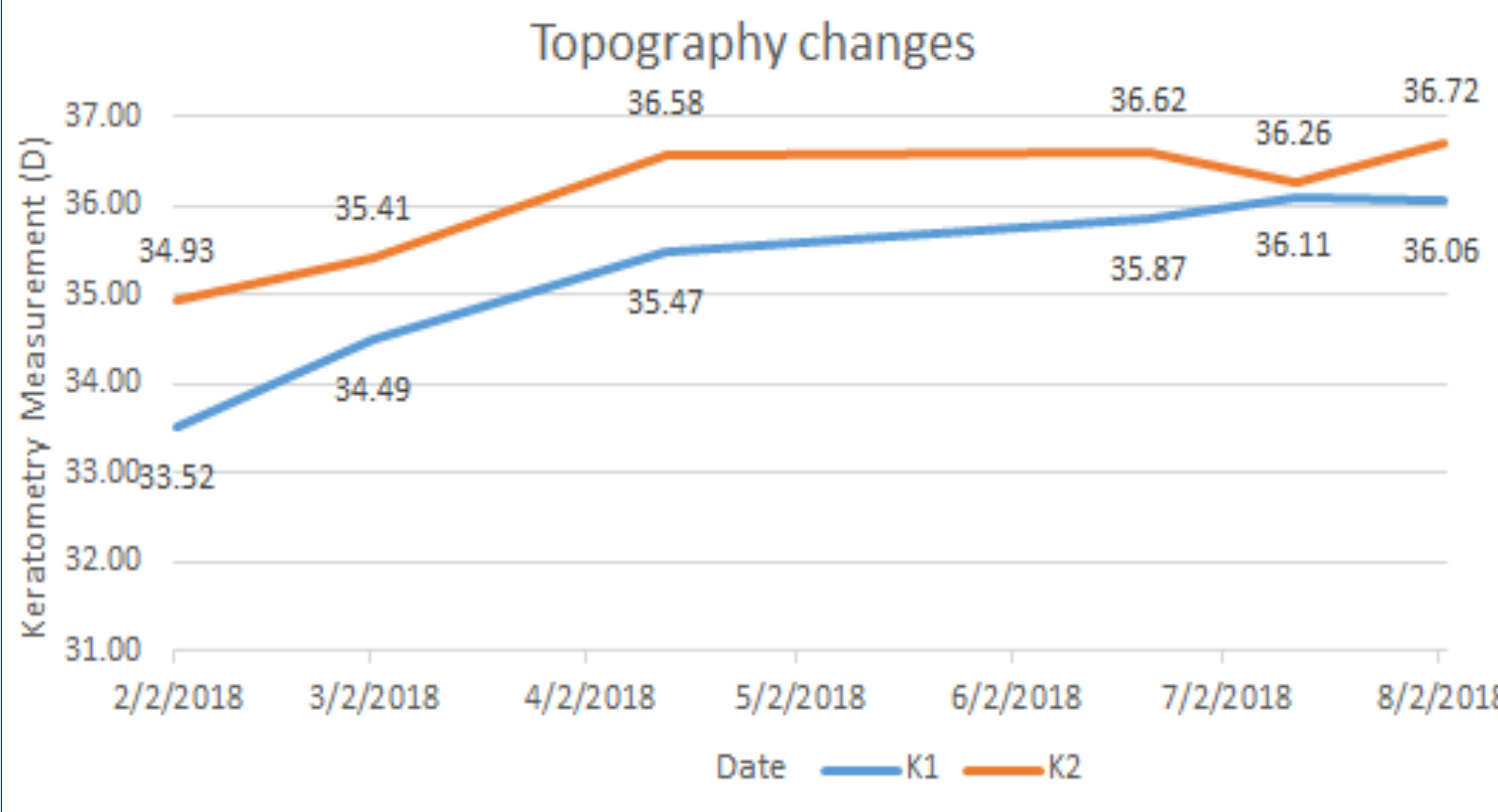
Photo 4: Pulsar topography on 8/2018 reveals increase in central corneal thickness and steepening compared to baseline topography on 2/2018, while anterior and posterior elevation remains relatively constant.

Final lens parameters: VA OD 20/20-1

Material	BC (mm)	CLP (D)	Dia (mm)	Sag (mm)	CT (mm)	LC	Scleral landing
Optimum Extra	8.23	-3.00 -0.75 x095	16.80	5.084	0.30	-2.00	Steep -8/Flat -4



Graph 1: From the period of 2/2018 to 8/2018, the corneal thickness acquired at the thinnest location increased from 367um to 432um with no evidence of edema and/or additional scarring



Graph 2: From the period of 2/2018 to 8/2018, the amount of corneal astigmatism decreased from 1.41DC to 0.66DC

Conclusion

Given the pathophysiology of Acanthamoeba Keratitis and subsequent stromal scarring, scleral contact lenses not only provide the patient with functional vision otherwise not achieved with spectacle correction, but may also have the potential to promote or help facilitate corneal rehabilitation. This case report suggests/demonstrates that corneal healing of a scar may take place months or possibly years after the initial infection. Although the mechanism of action is not well understood at this time, it is apparent that patients undergoing specialty contact lens fits after AK should be monitored closely for topographical and pachymetric changes that could alter the fit.

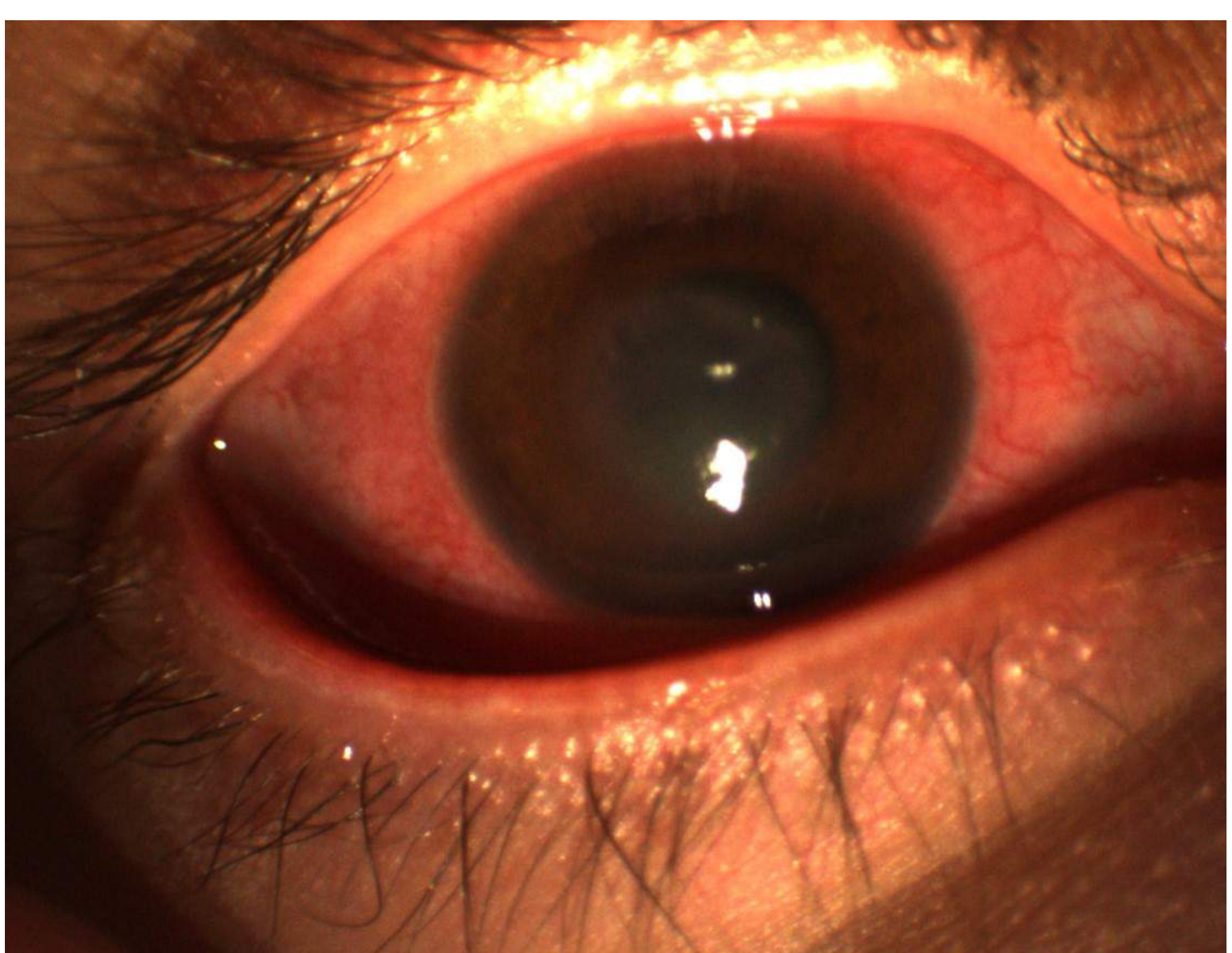


Photo 1: Slit lamp evaluation on 12/2018, revealed 4+ diffuse bulbar injection, diffuse punctate staining over a central 4mm round corneal scar.

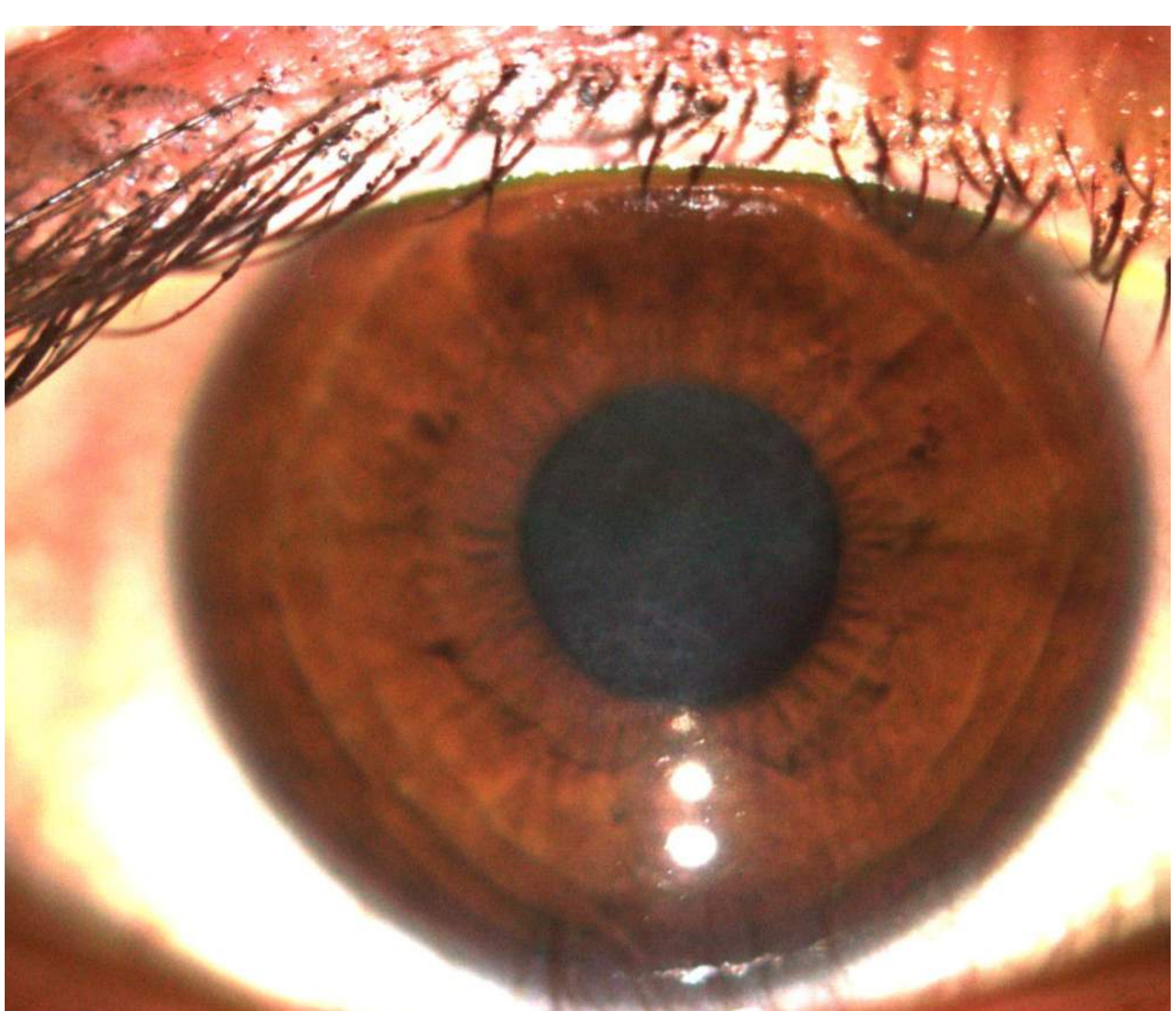


Photo 2: Slit lamp evaluation on 8/2018, revealed a central 4mm round corneal scar with moderate macular opacification.