



Case of Photorefractive Keratectomy In Post-RK Irregular Cornea - Understanding Alternatives for Vision Correction in RK Patients



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BACKGROUND

A 77 year old male presented for evaluation of blurry distance vision and irregular corneas. He had a previous history of RK/AK OU in 1995. Then, following cataract surgery in 2013, he had photorefractive keratectomy (PRK) OU. The patient now has developed a visually significant refractive error and was interested in additional refractive surgery. He did not want to wear glasses or contacts.

CASE DESCRIPTION

Acuity and Refraction Pre-operative 11/1/2021

OD sc 20/40, BCVA +1.50 -2.75 x094 20/25

OS sc 20/40, BCVA -1.00 -1.25 x106 20/25

A 77 yo male patient was experiencing a significant amount of glare in both eyes as a result of prior RK and irregular corneas. Vision correction options were explained to the patient including glasses, contacts and refractive surgery. The patient was referred for a refractive surgery consultation. His refractive and corneal stability was evaluated with Pentacam and epithelial mapping over the course of two months before surgery.

PRK surgery was successfully performed and the patient was prescribed moxifloxacin and Pred Forte. Due to significant post-operative discomfort, the patient also had punctal plugs inserted and was dispensed diluted anesthetic eye drops. This discomfort only persisted for 24 hours and rapidly improved.

After **one week** of recovery, the patient showed improvement to his visual acuity and was able to see uncorrected OD 20/25-2 and OS 20/40.

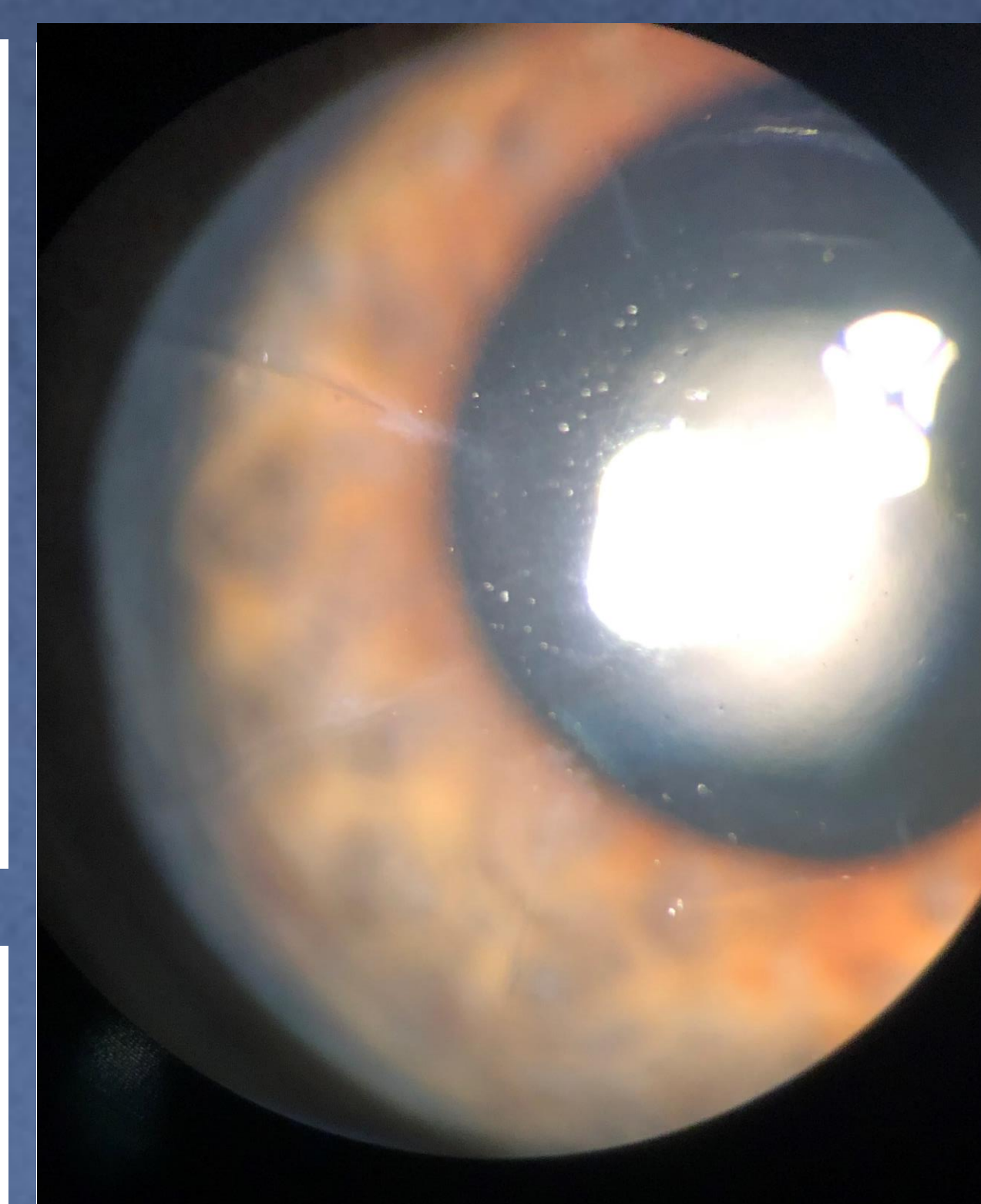
By **one month** post-operative, the patient improved even further to OD 20/20-2, and OS 20/30-2.

At **three months** post-operative, the patient was very pleased with his visual acuity of OD 20/20-2 and OS 20/25-3. Of note, the patient no longer reported any symptoms of glare. The patient has continued to be monitored post-PRK and is doing well.

Acuity and Refraction Post-operative 6/1/2022

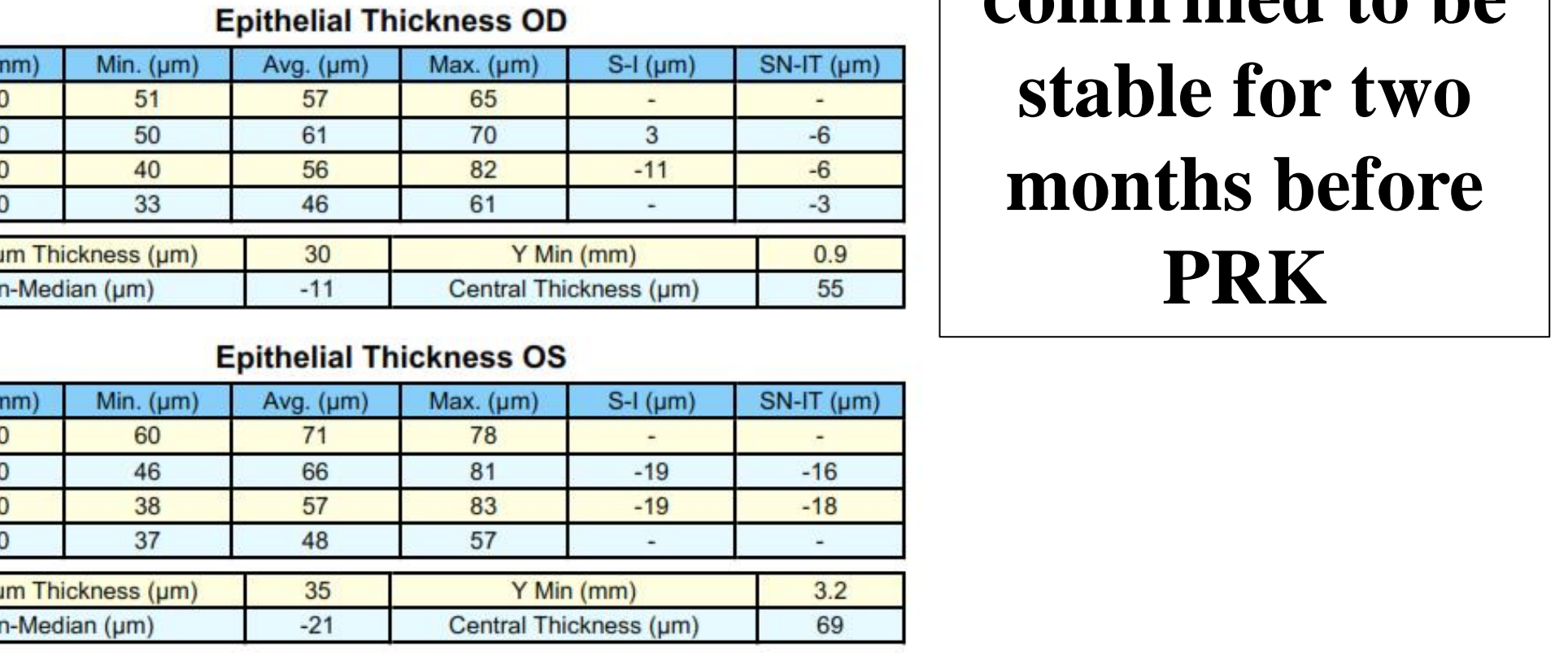
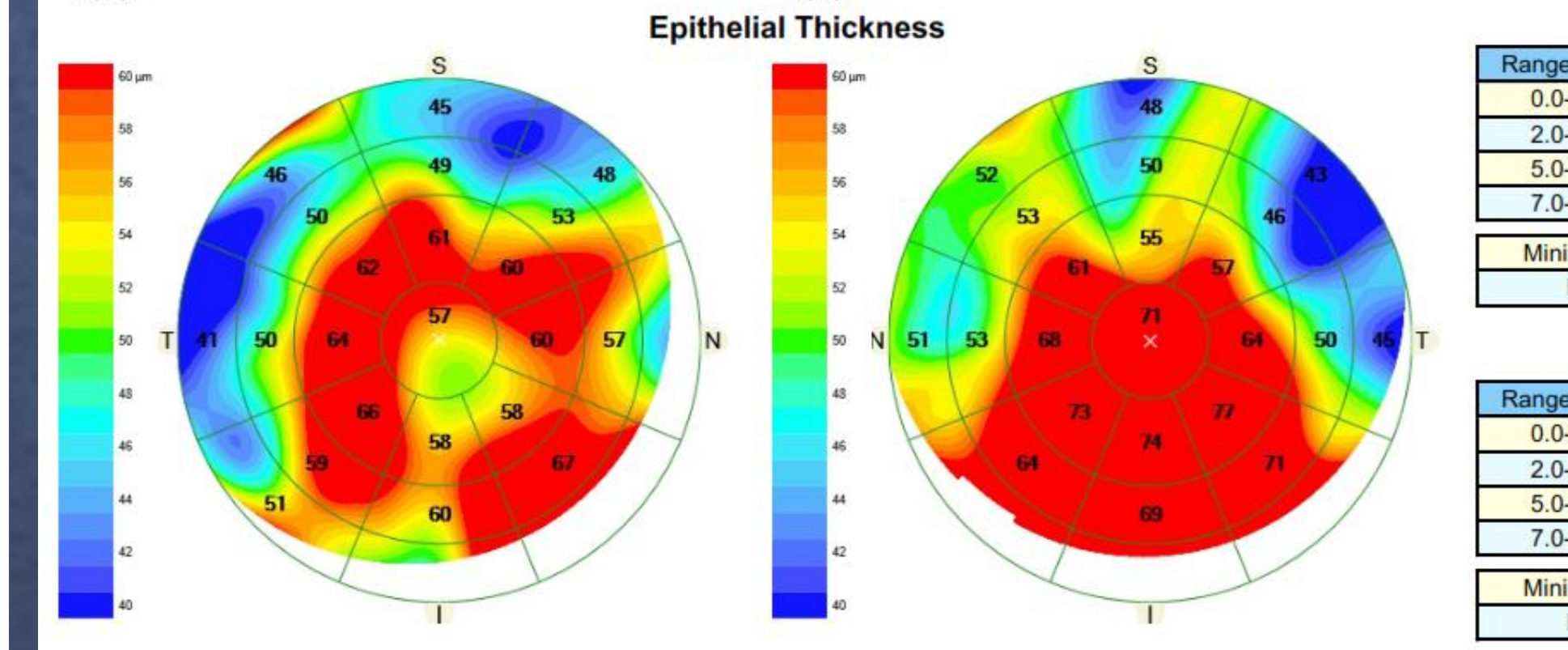
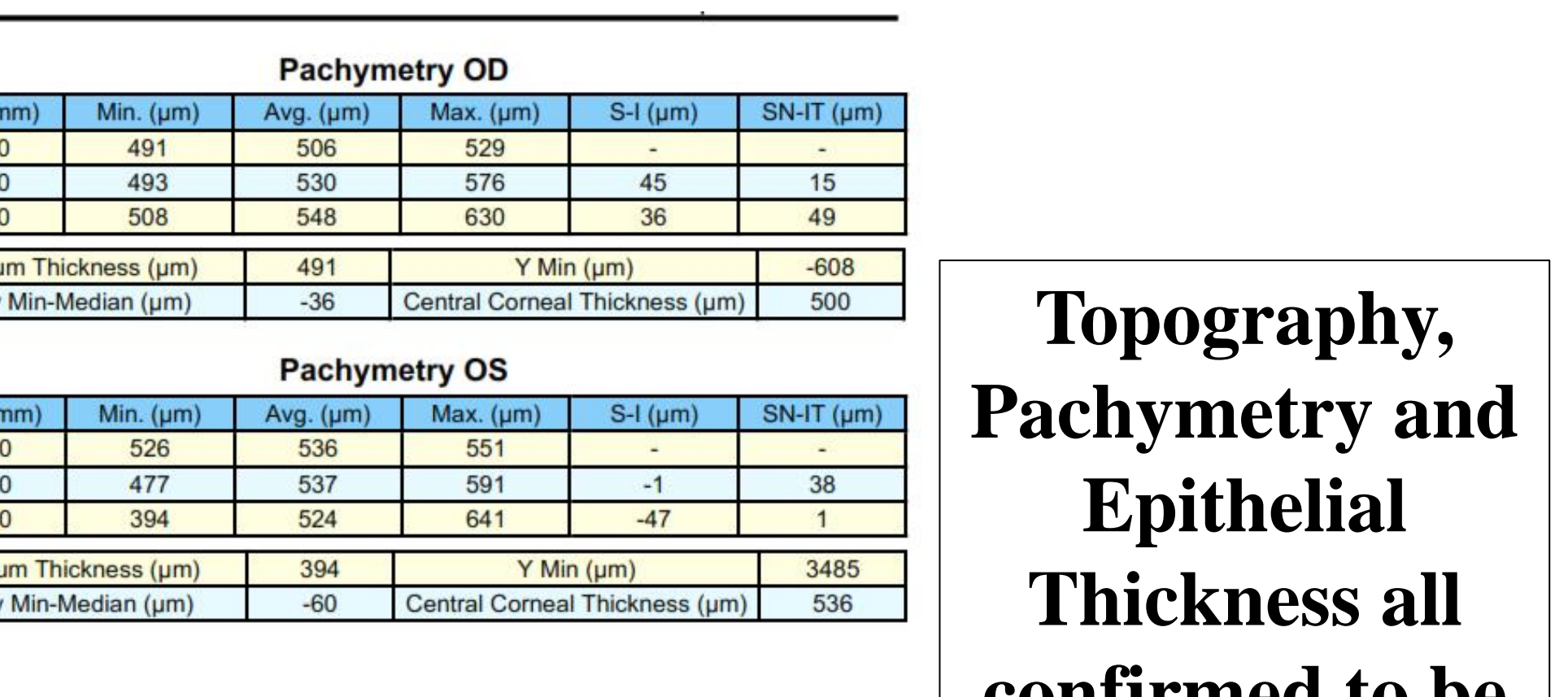
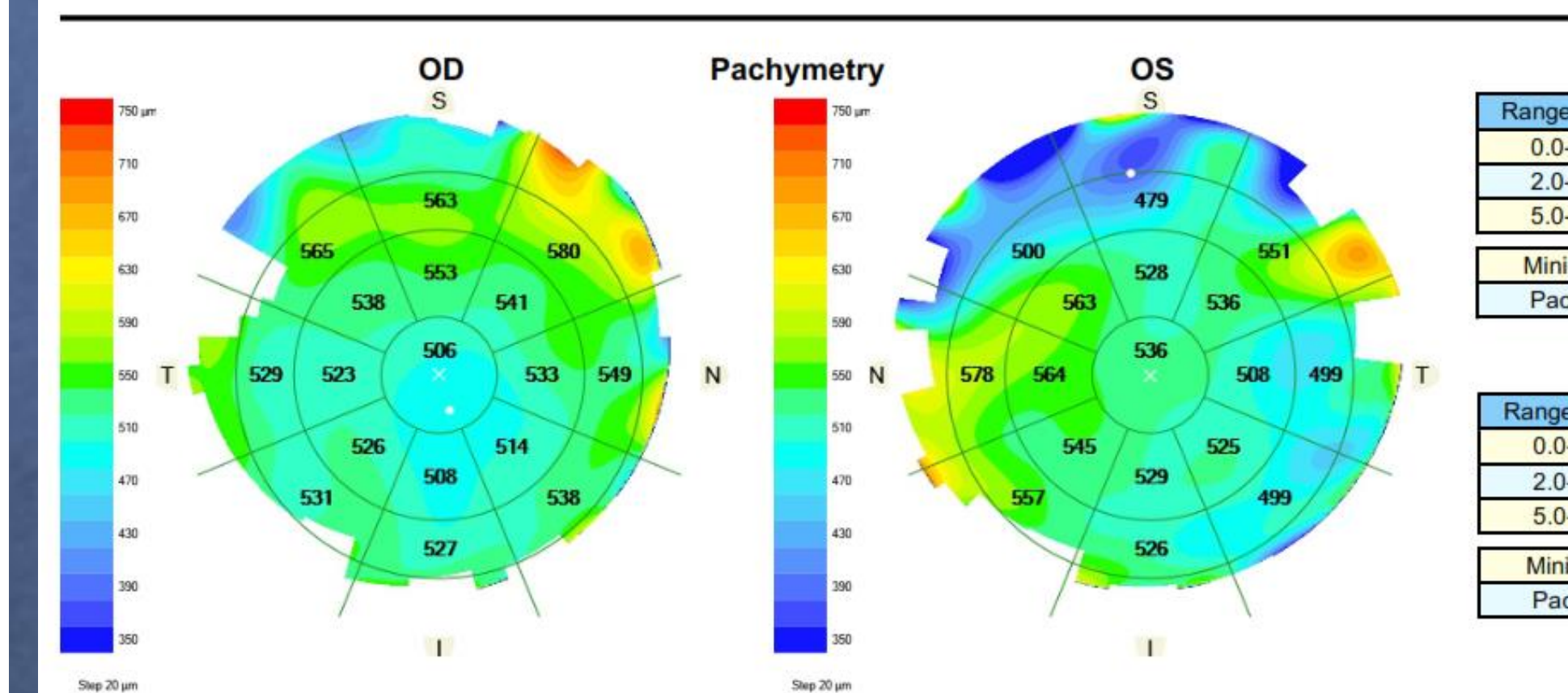
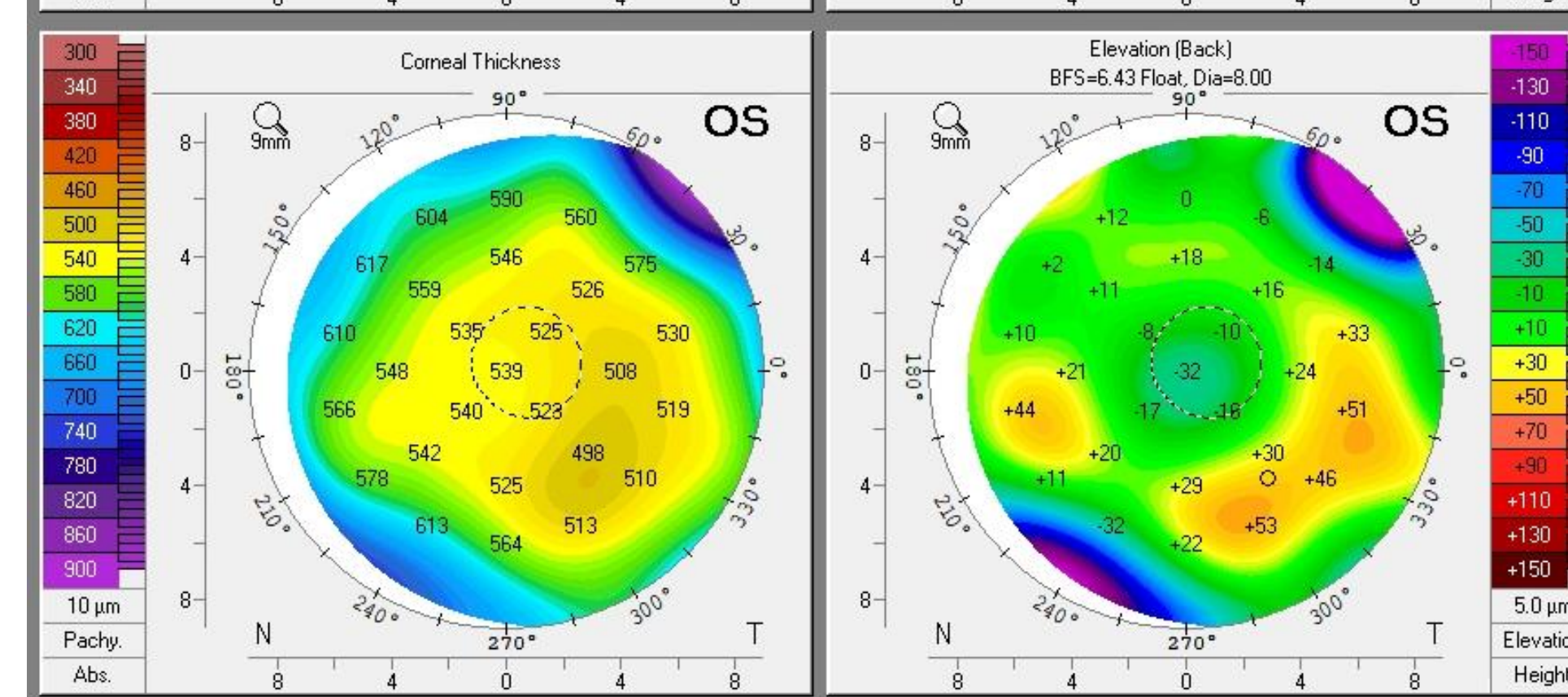
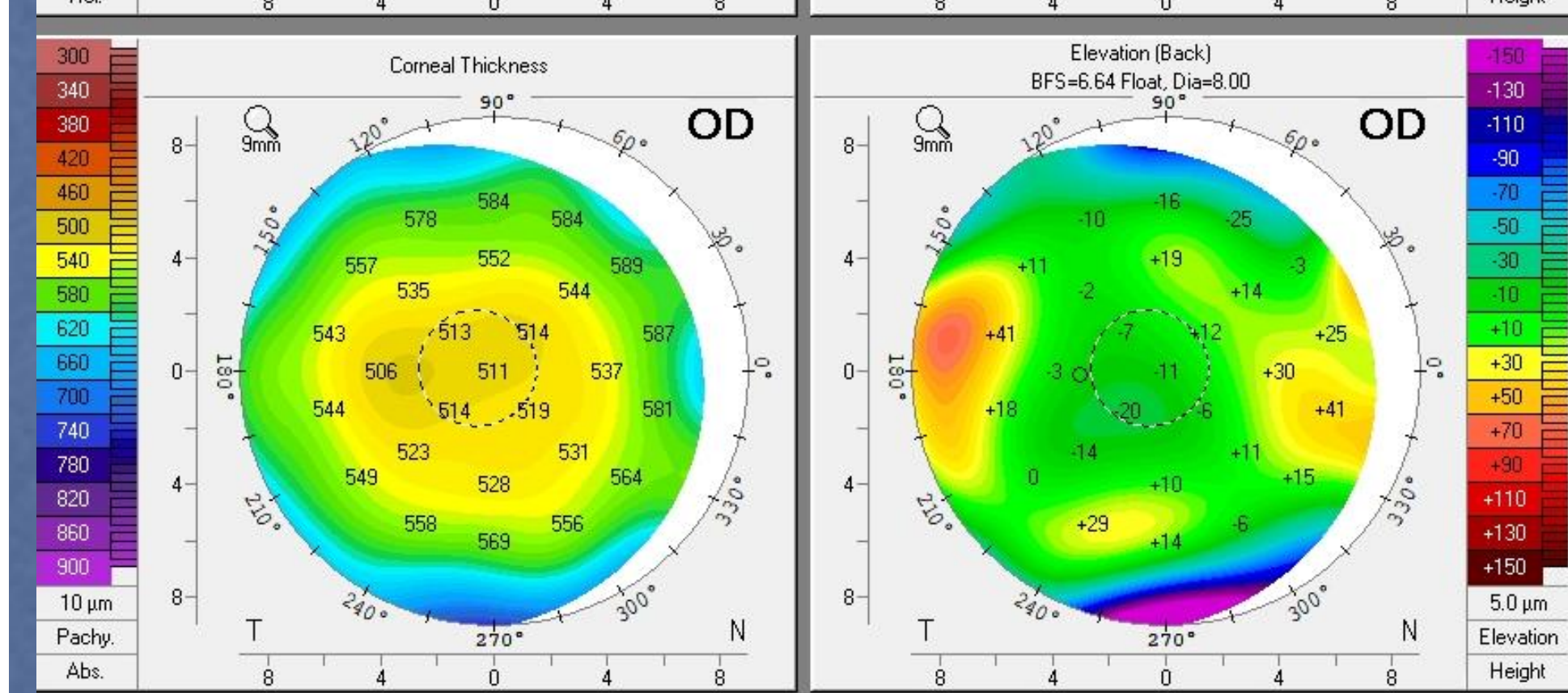
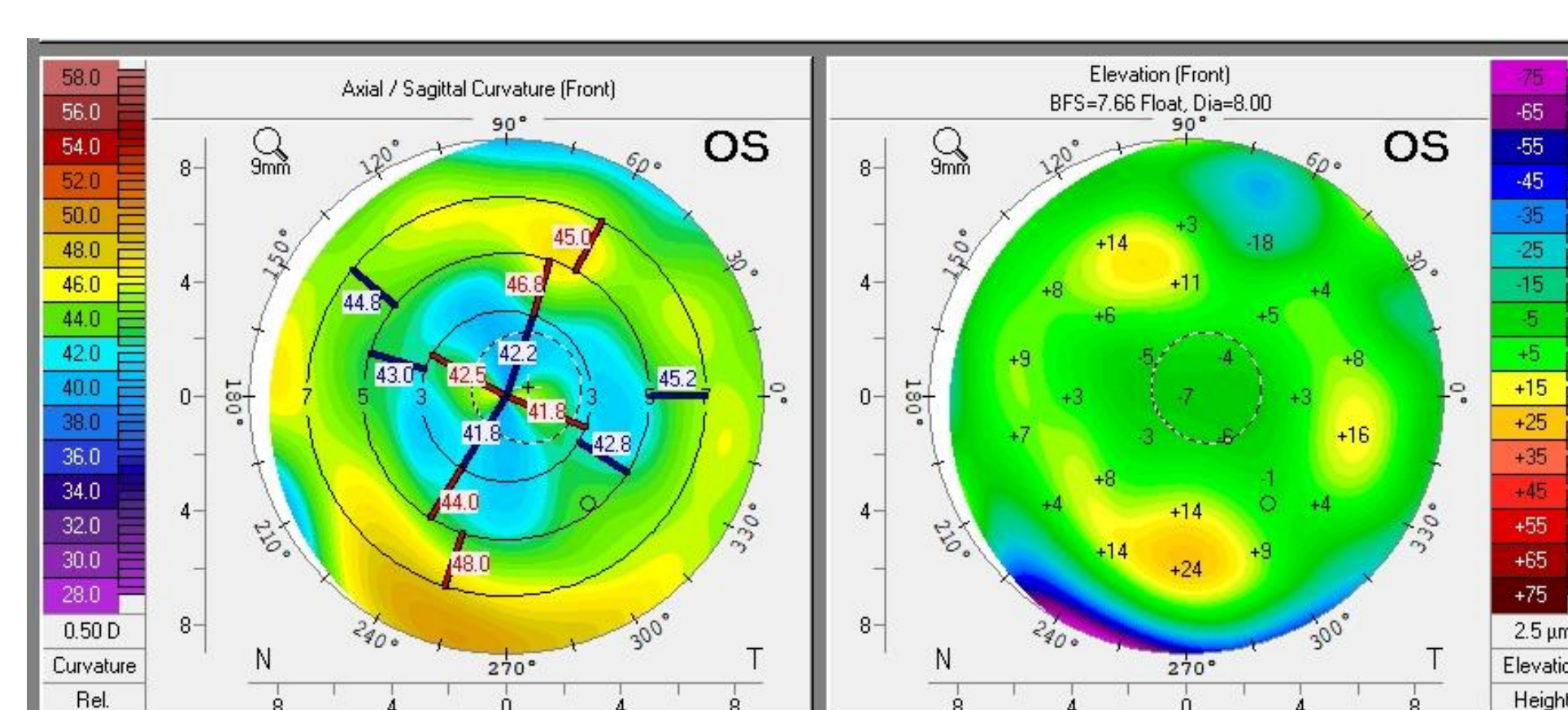
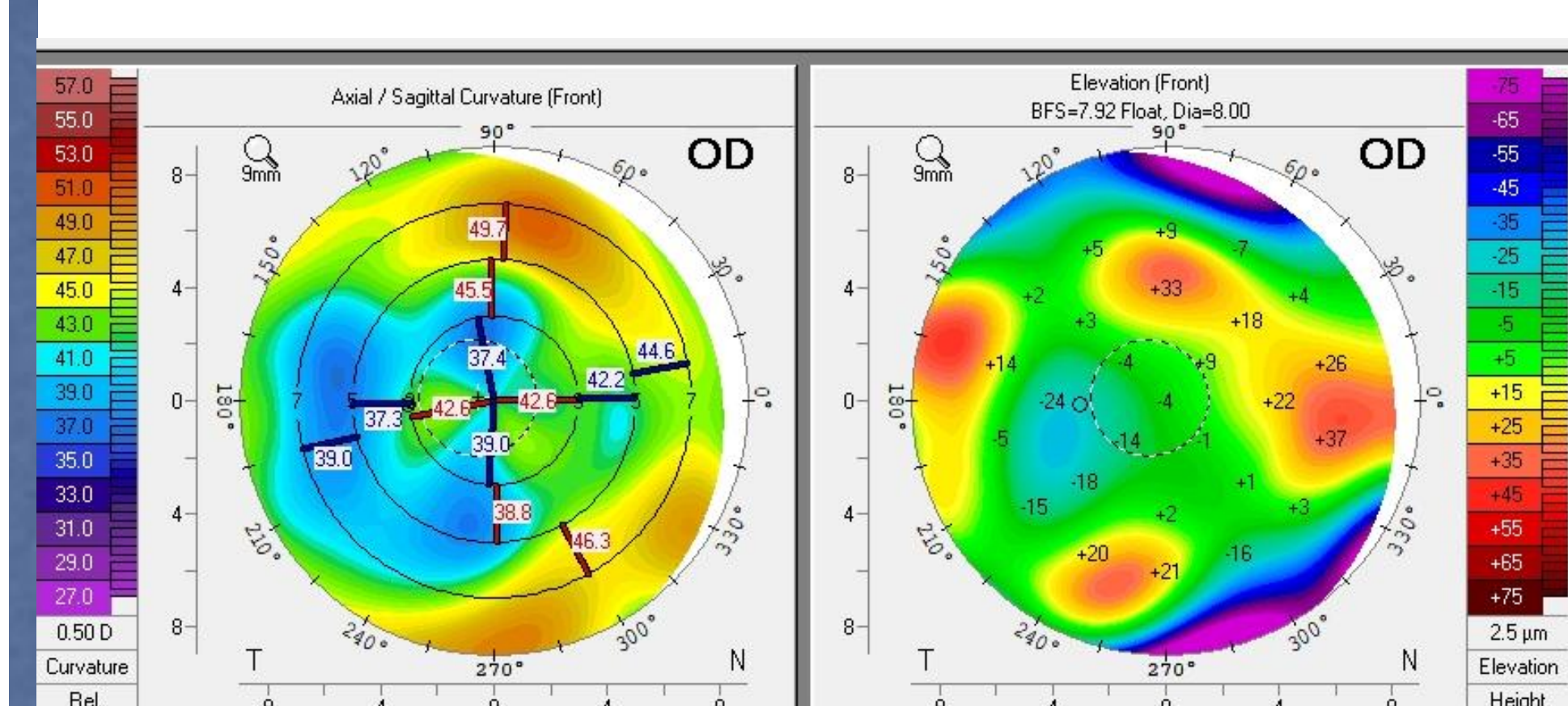
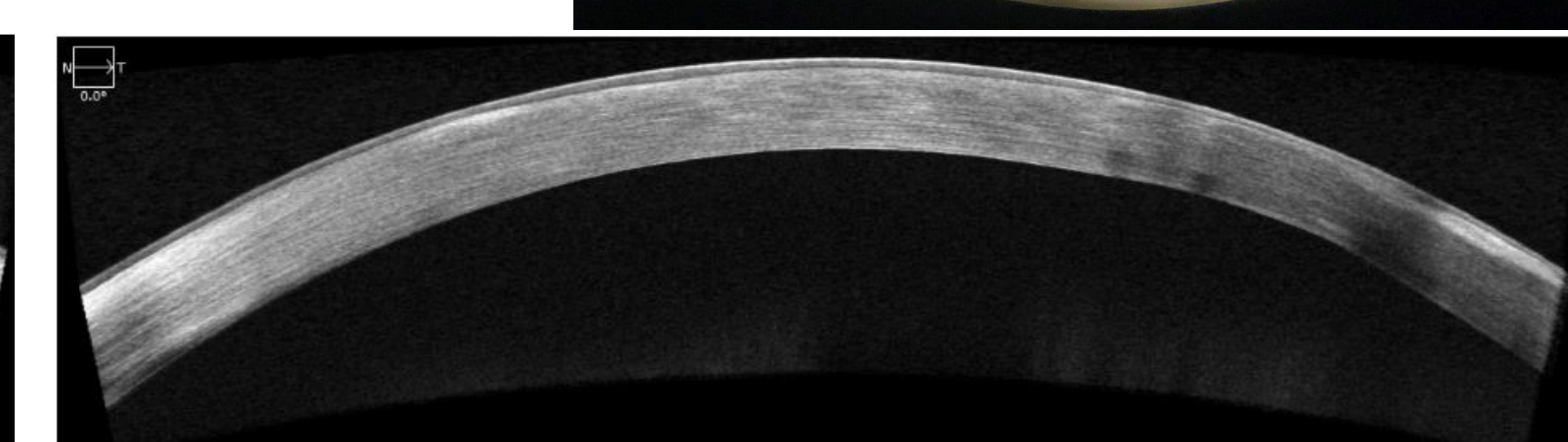
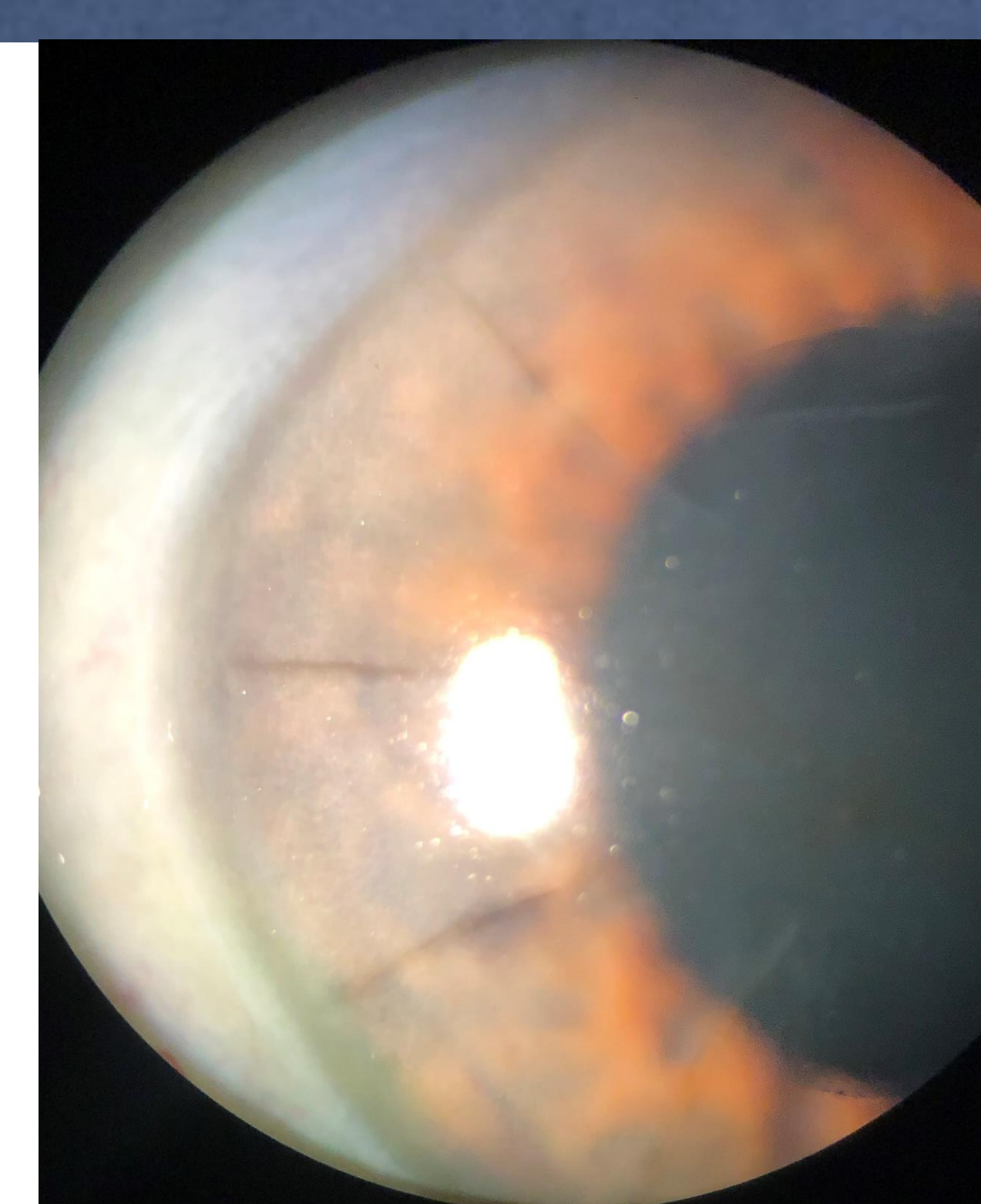
OD sc 20/20-2, BCVA -0.75 -0.75 x002 20/20-2

OS sc 20/25-3, BCVA +0.50 -1.00 x090 20/25-1



Slit lamp photographs from patient's initial visit

Patient has history of prior RK/AK, PRK and cataract extraction. He is interested in another refractive surgery to get out of glasses. He does not want to wear contacts



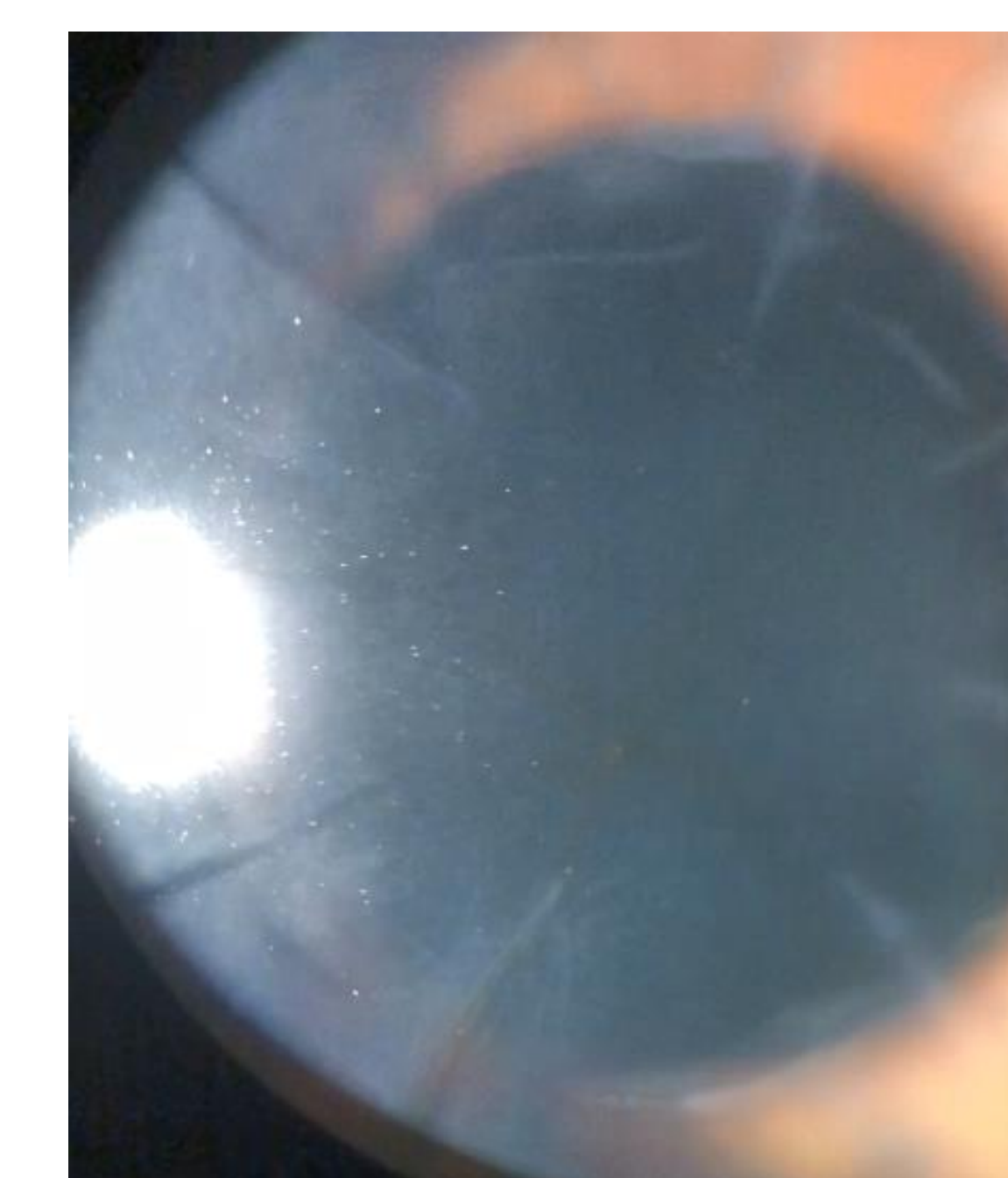
RECENT LITERATURE

“All treated eyes showed an improvement in uncorrected visual acuity, and 56% had an improvement in corrected visual acuity. Photorefractive keratotomy was shown to be an effective treatment method for secondary ametropia after radial keratotomy.”

Filev FS, Kromer R, Frings A, et al. [Photorefractive Keratectomy (PRK) as a Procedure for Correction of Residual Refractive Errors after Radial Keratotomy]. Klinische Monatsblätter für Augenheilkunde. 2020 Aug;237(8):961-967.

“Uncorrected distance visual acuity significantly improved after 6 months of treatment. Moreover, the corrected distance visual acuity significantly improved at the end of the study. Furthermore, the aberrometric values were significantly reduced at the 6-month visit.”

Mohammad Ghoreishi, Alireza Peyman, Nima Koosha, Khodayar Golabchi, Mohsen Pourazizi, Topography-guided transepithelial photorefractive keratectomy to correct irregular refractive errors after radial keratotomy, Journal of Cataract & Refractive Surgery, Volume 44, Issue 3, 2018, Pages 274-279,



Irregular Corneas from Prior RK can be treated in some cases with PRK as was done with the patient reported in this poster

Topography, Pachymetry and Epithelial Thickness all confirmed to be stable for two months before PRK

CONCLUSIONS

Patients with a history of RK, cataract extraction and prior PRK may present with irregular corneas and uncorrected refractive error. Additional refractive surgery may be considered as an alternative to glasses and contacts in some of these cases. Fortunately, this patient was a successful candidate for PRK and showed excellent results following surgery.