



Densitometry Measurements in Corneal Disease: A Case Series

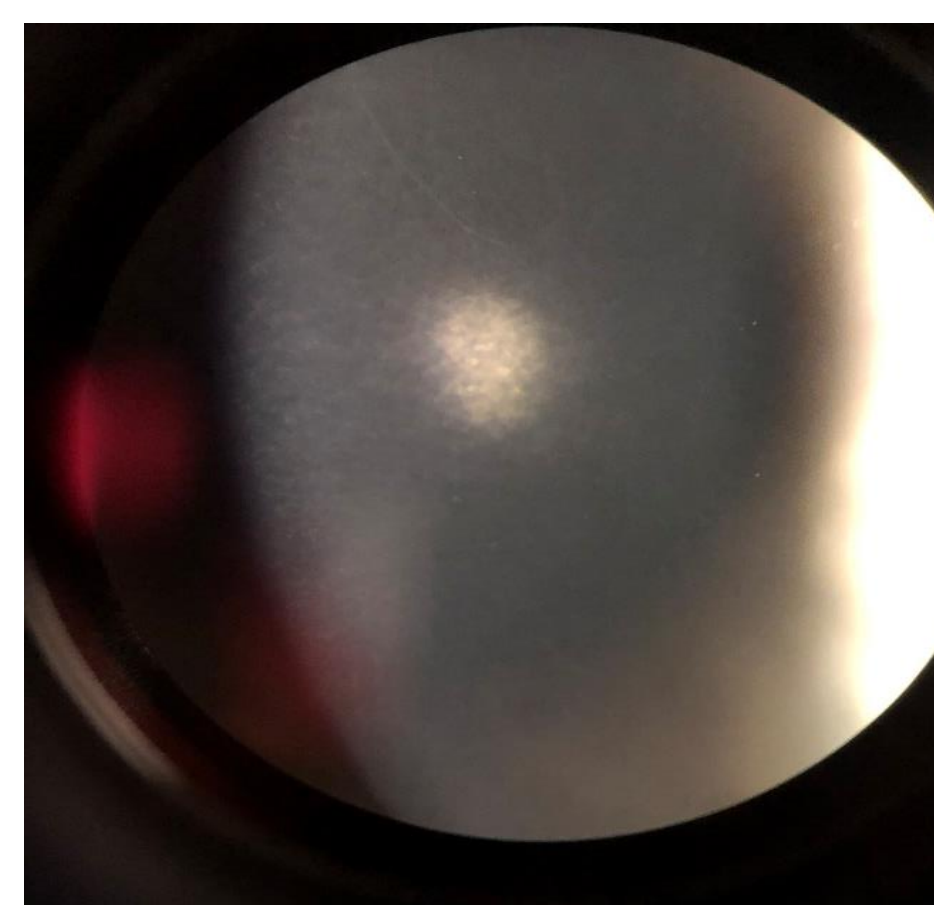


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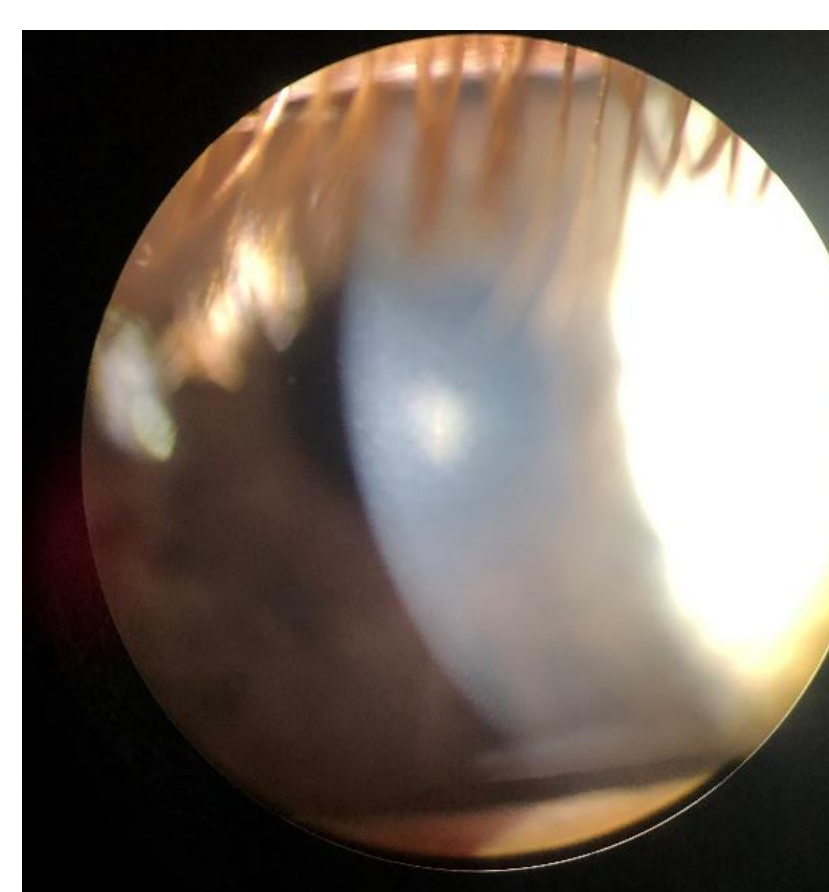
BACKGROUND What does a central corneal scar, disciform keratitis and Fuch's dystrophy all have in common? They can all be evaluated with densitometry – an often underutilized and overlooked measurement available with many pachymeters.

CASE #1 - Central SEI secondary to soft contacts

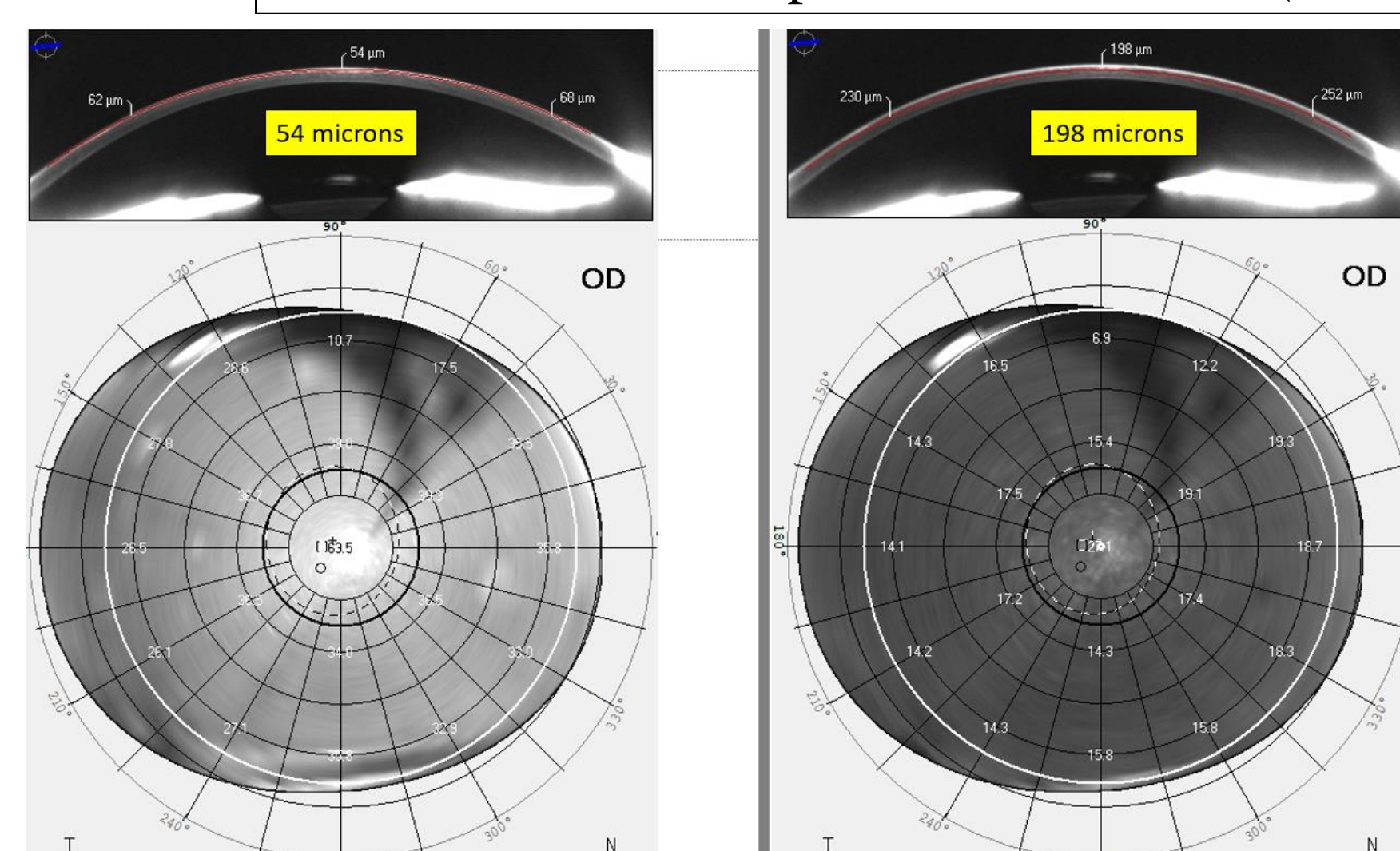
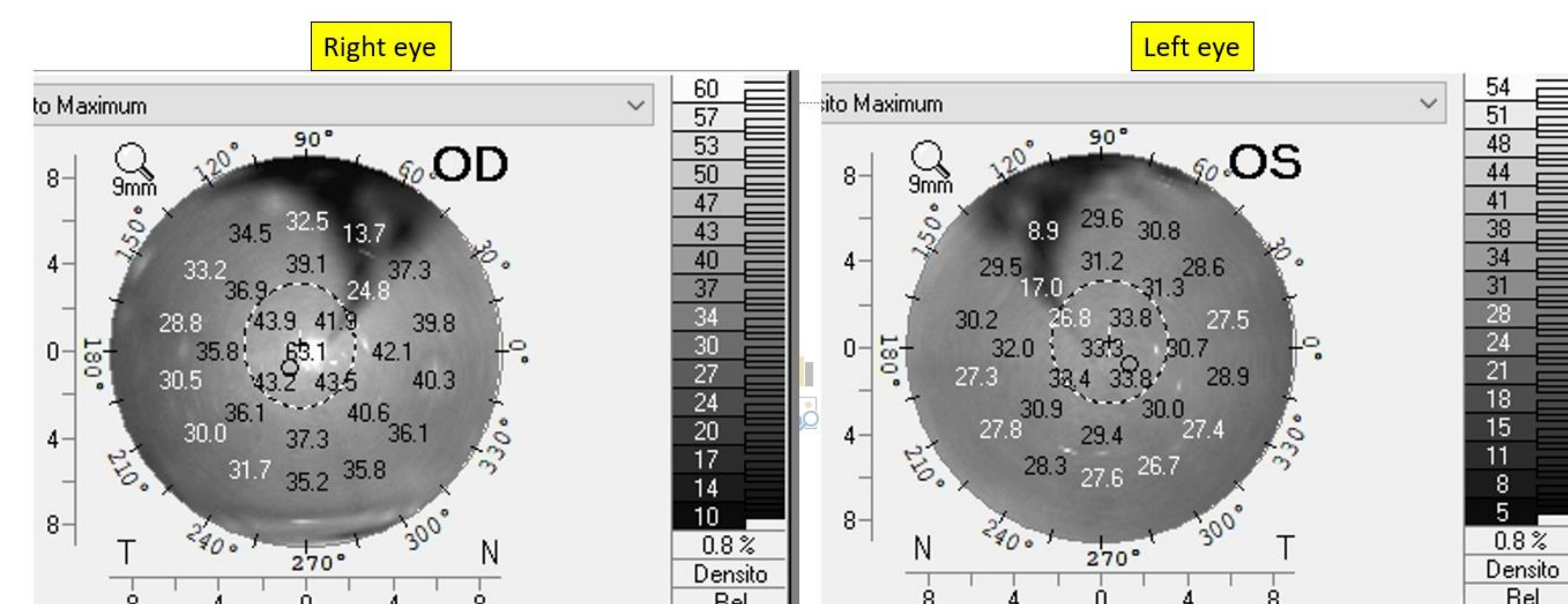
A 29 year old male soft contact lens wearer developed a central 1x1mm SEI in his right cornea that became a central corneal scar. He was a -6.00 myope and was motivated to have refractive surgery. Densitometry was very helpful at determining the depth of the scar and eligibility for surgery. PRK was recommended in the right eye to remove the corneal scar and correct his distance vision.



Slit lamp photographs of initial visit for patient with contact lens induced central SEI



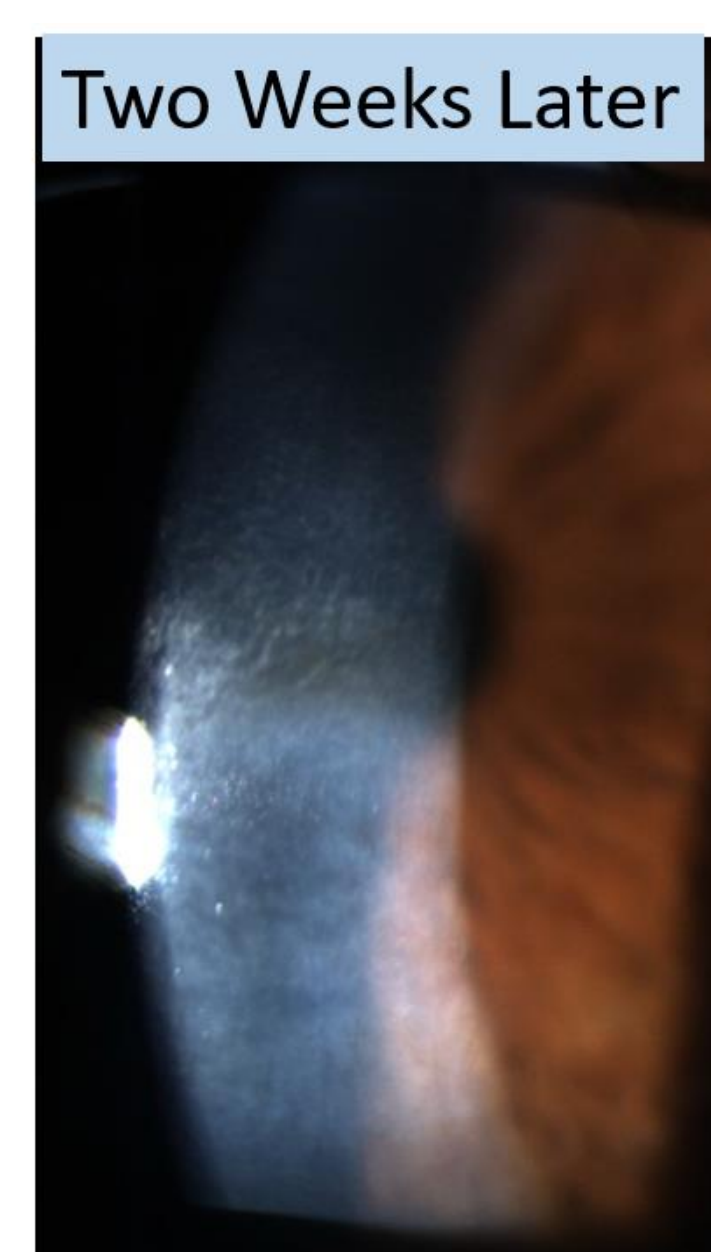
Slit lamp photographs of 1 week resolution of SEI, now a central corneal scar remains



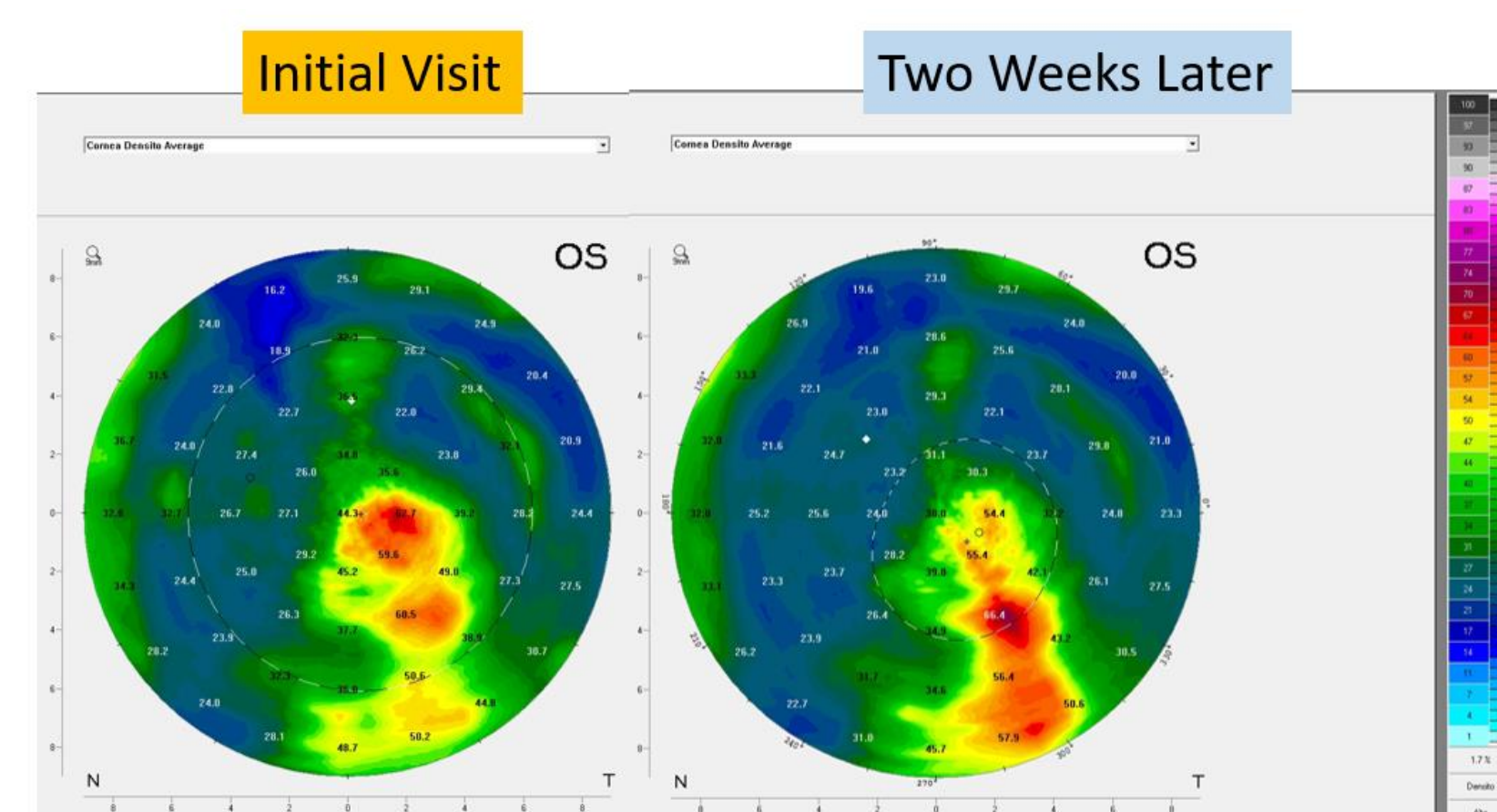
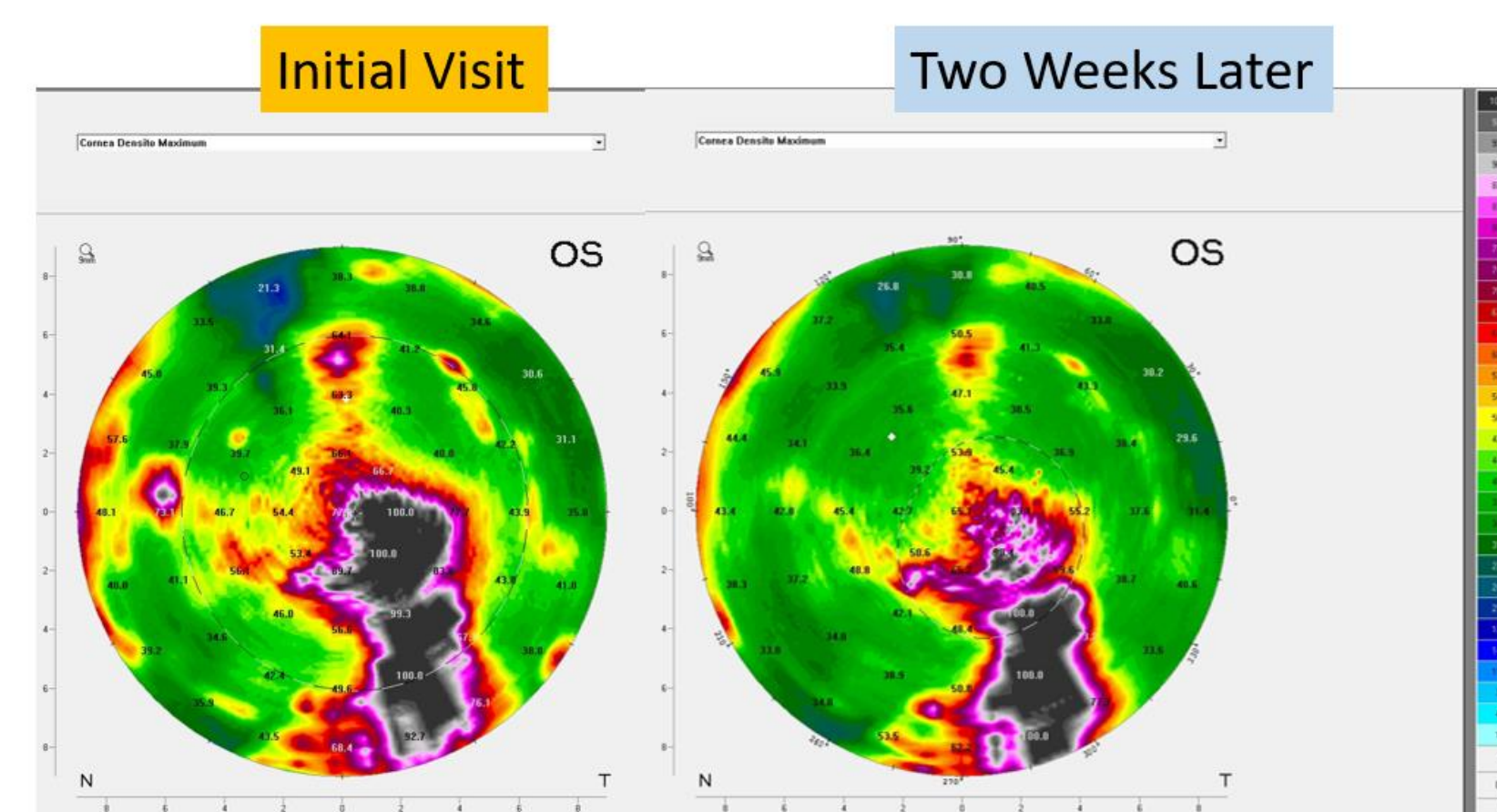
Case #1 - determining refractive eligibility for a patient with a superficial central corneal scar

CASE #2 - Stromal Edema in Disciform Keratitis

A 41 year old male presented with disciform keratitis. The patient was initiated on oral acyclovir 400mg bid and FML OS q2hrs. Follow up showed a 17.2% decrease in central corneal pachymetry measurements. Densitometry report showed a decrease in opacity of the central cornea. Densitometry, pachymetry and anterior segment OCT can be helpful in monitoring progression and resolution of stromal edema such as from disciform keratitis.



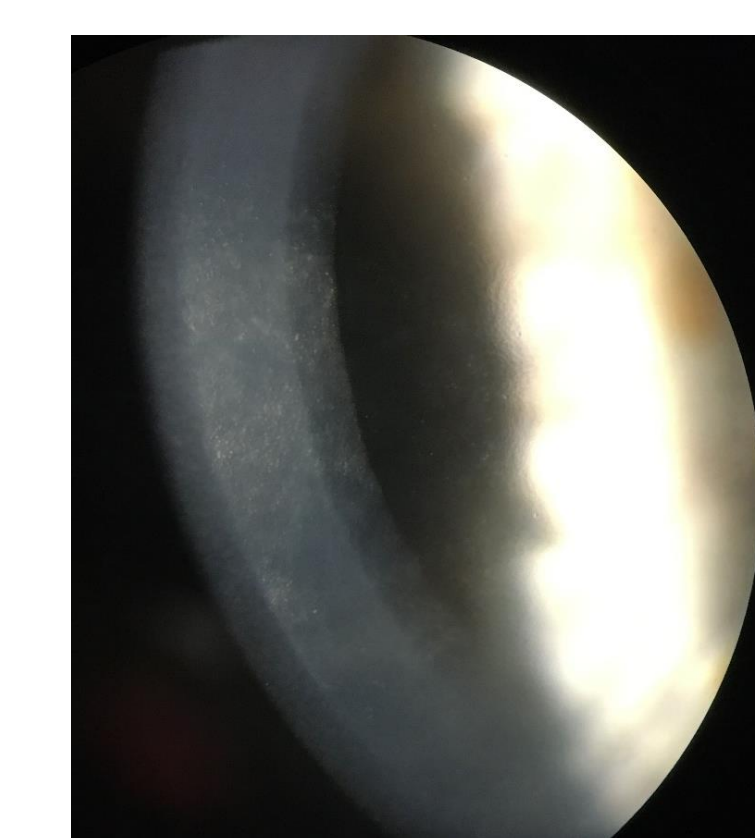
Disciform keratitis at presentation vs 2 week follow-up on FML and oral acyclovir



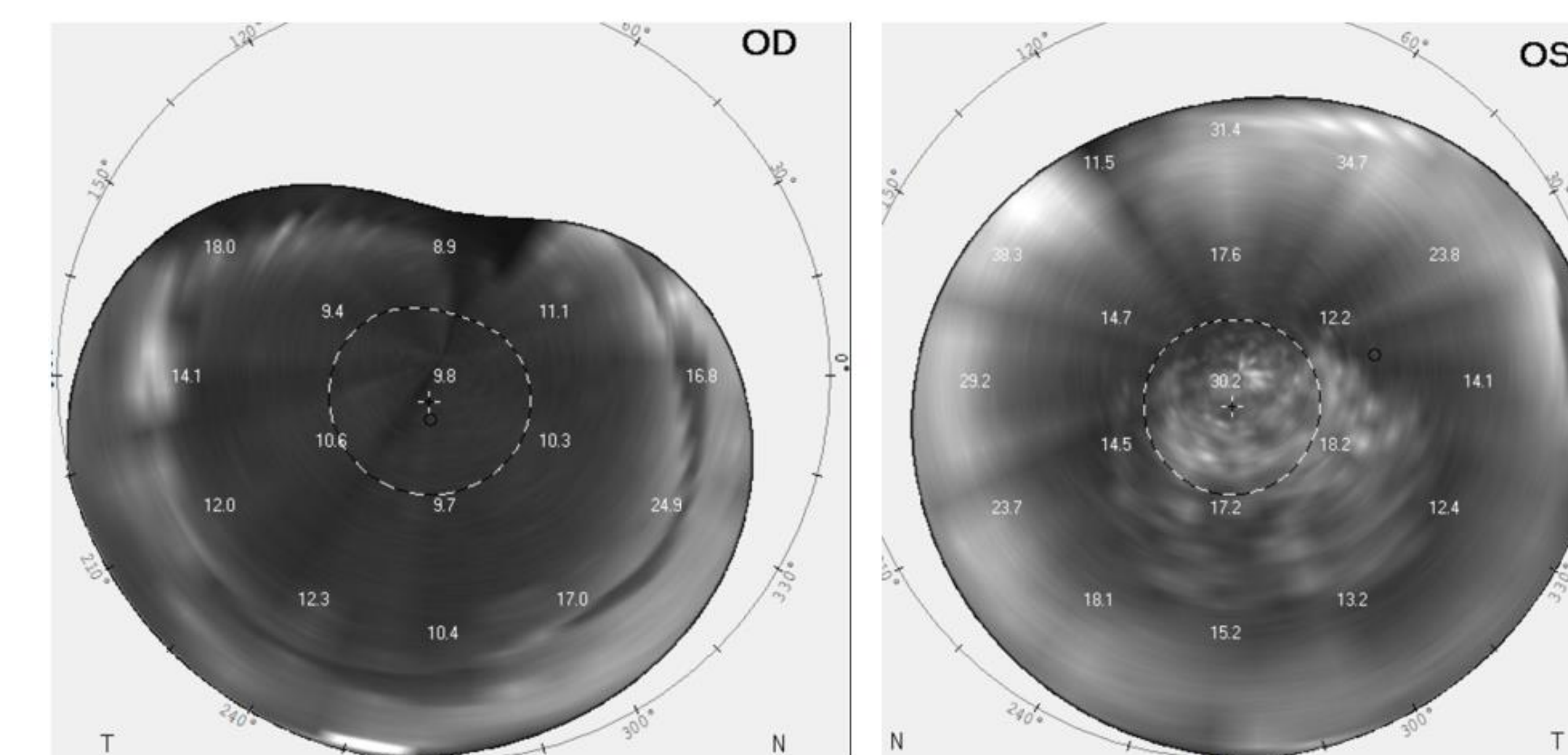
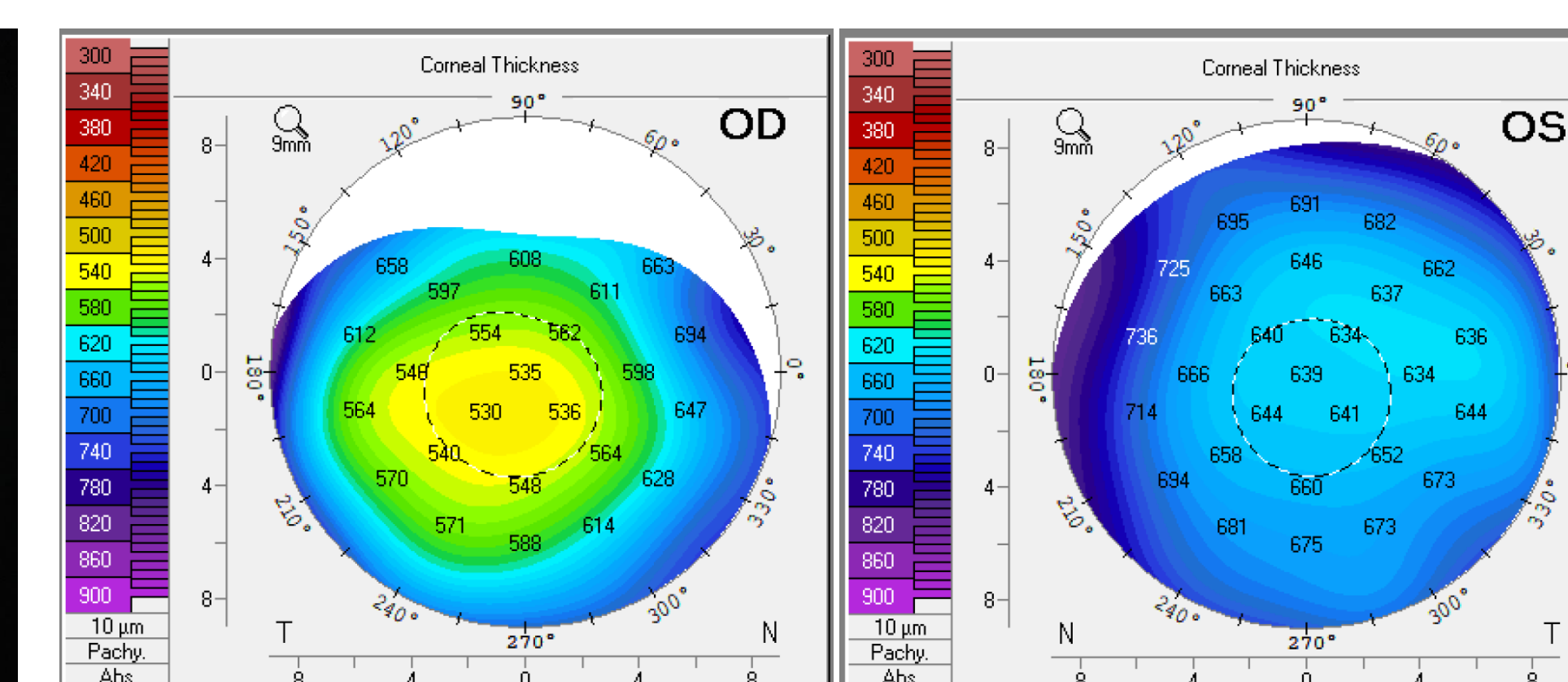
Case #2 - monitoring the progression of HSV disciform keratitis

CASE #3 - Fuch's Dystrophy with and without DMEK

A 78 year old female with Fuch's dystrophy and cataracts had combined cataract surgery and DMEK in the right eye, but only cataract surgery in the left eye. Densitometry and pachymetry was obtained both pre and post operatively, with the left eye showing an increased thickness and a higher densitometry value than the right. This case nicely illustrates how densitometry can be used to evaluate the corneal endothelium and observe the impact from guttata in patients with Fuch's dystrophy.



OS 3+ central corneal guttae



Case #3 - evaluating the impact of guttata on corneal transparency and the benefit of DMEK

CONCLUSIONS This case series shows various applications of densitometry for monitoring corneal pathology