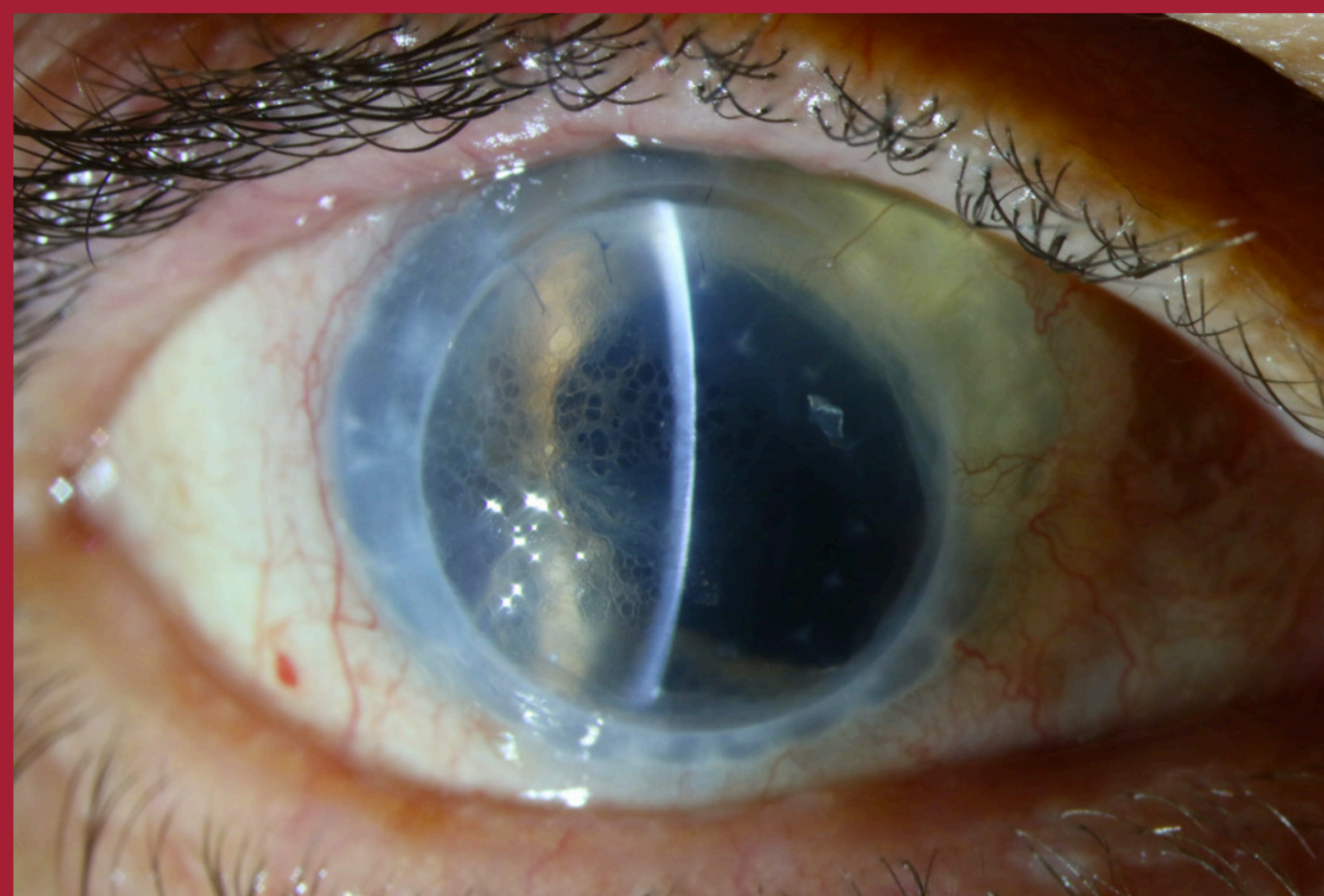


INTRODUCTION

- In eyes with multiple pathologies, a Rigid Gas Permeable (RGP) over refraction can help isolate the cause of decreased visual acuity.
- When the cause of the decreased acuity is determined to be corneal or refractive, management with specialty contact lenses may further benefit the patient

CASE DESCRIPTION #1

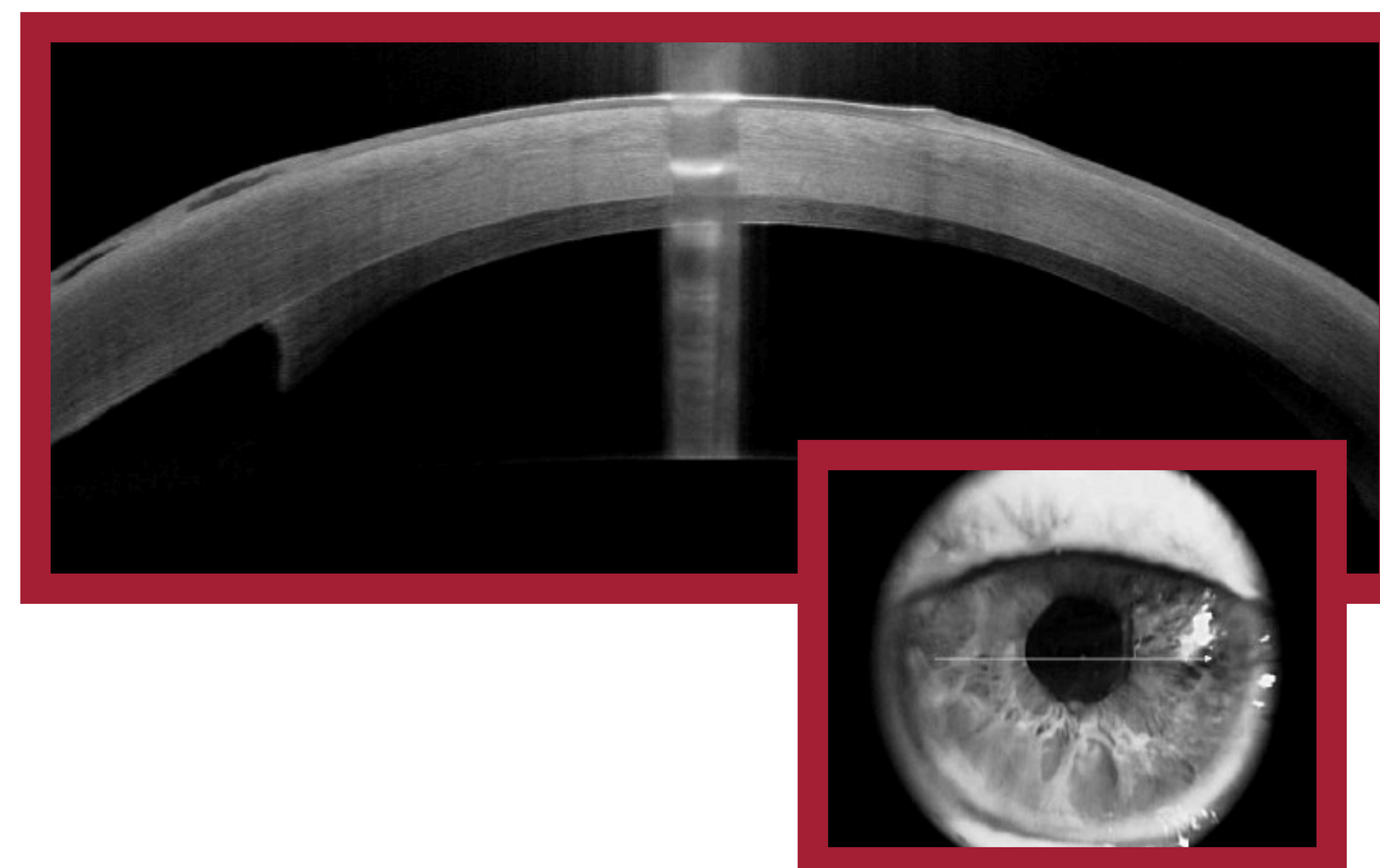
- A 62-year-old male presents a corneal specialist, CC pain and “blistering” OD
- POH:
 - KCN
 - PKP x3 for episodes of hydrops and trauma
 - mixed-mechanism glaucoma due to prolonged steroid use and trauma
 - RGP wear (Rose K), discontinued for the last “few months” due to concerns about the “blisters”
- MEDS:
 - 6 ocular hypotensive agents, including Rhopressa



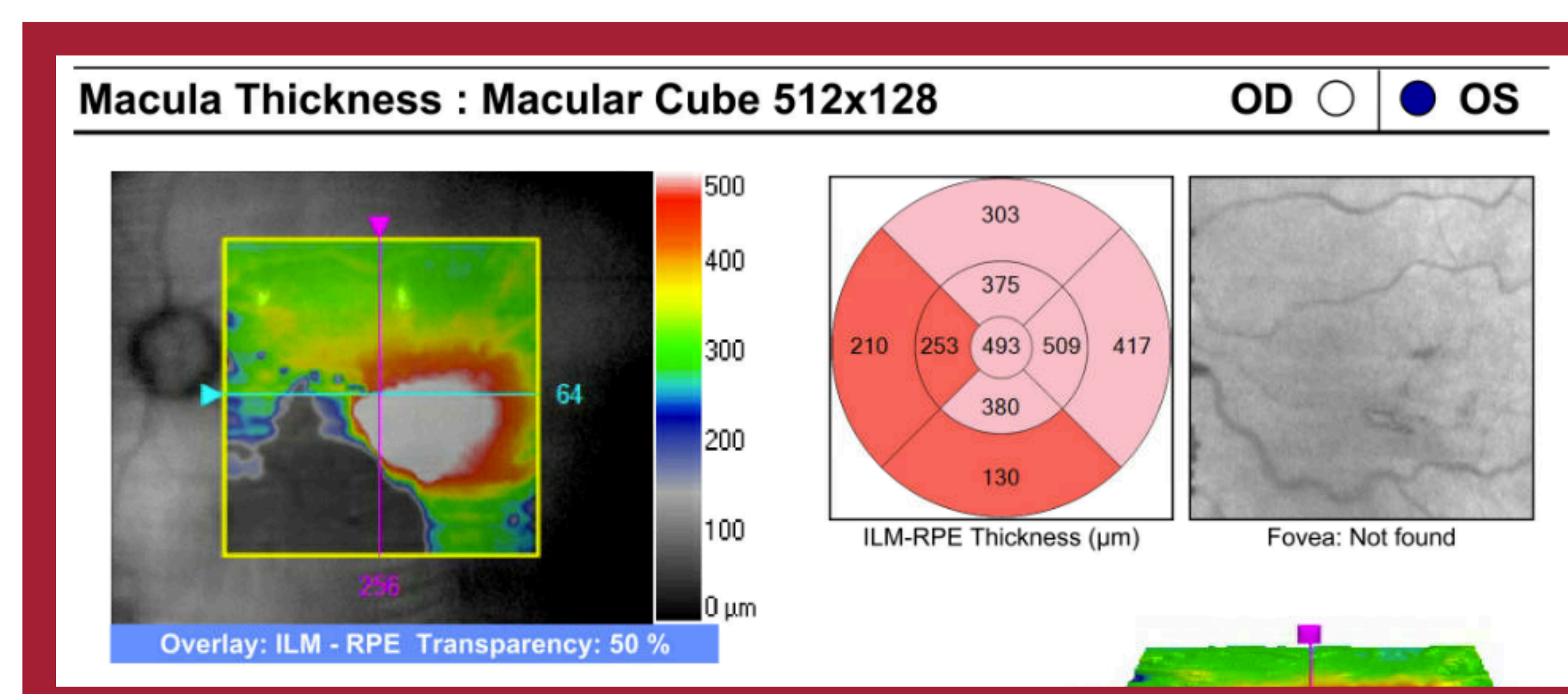
- Initial examination:
 - VAsc: CF @ 1ft
 - PKP intact with reticular bullae spanning 60% of the cornea
 - Undilated fundus exam unremarkable
 - Assessment: reticular bullae due to Rhopressa use
 - Plan: discontinue Rhopressa and follow up in 1 month
- 1 month follow-up:
 - VAsc: CF @ 6ft
 - Bullae resolved
 - RGP selected from the diagnostic set closest to his habitual RGP parameters yielded a BCVA of 20/70.
 - Plan: patient reassured and was to continue similar medical management and evaluate in 1 month for continued resolution

CASE DESCRIPTION #2

- An 83-year-old presented to the clinic for 1 week follow-up after DSAEK OS
- POH OS:
 - pseudophakic bullous keratopathy
 - severe primary open angle glaucoma with trabeculectomy
 - SLT x4
 - epiretinal membrane
 - pseudophakia
- MEDS OS:
 - Combigan BID
 - Prednisone QID
 - Moxifloxacin QID
- Pre-op BCSVA OS: 20/125
- POW1 OS:
 - VAsc: CF @ 2ft, PHNI
 - IOP 22
 - DSAEK graft attached 360 per exam and AS-OCT, no air bubble, no epi defects
 - Posterior segment was still difficult to view due to corneal haze, so medical management was continued until the 1-month post-op visit



- POM1 OS: the patient stated that his vision was better but still blurry
 - Entering VAsc: 20/500
 - BCSVA: 20/400
 - DSAEK graft attached 360 per exam and AS-OCT, no air bubble, no epi defects
 - Scleral lens selected from a diagnostic set yielded BCVA 20/250
 - OCT of the macula showed significant macular edema, and the patient was sent back to his managing retinal specialist



CASE #1 DISCUSSION

For this patient with both anterior and posterior segment disease, the acute issue clearly had to do with the cornea (reticular bullae).

As the bullae resolved, his visual acuity without correction objectively improved (from CF at 1 foot to 6 feet), but in a patient with an irregular cornea for a variety of reasons (KCN, post-graft, and resolving bullae) an RGP refraction was able to give a much more realistic approximation of current visual status. Additionally, and in conjunction with a posterior examination, this also confirmed that no major changes to the patient’s posterior segment had occurred.

CASE #2 DISCUSSION

Visual potential after DSAEK is expected to improve around 4 lines¹. Even though refraction status post DSAEK surgery is thought to stabilize on average about 6 months after surgery², refraction at 1-month post-operation can offer insight into the healing progress.

In this patient, the graft and host cornea appeared clear, and yet BCSVA was not much improved from no correction at all. With a scleral lens refraction, the question of degraded vision due to the anterior segment was eliminated, and still vision was similar to pre-operative status. This indicated that the problem was posterior to the cornea, and indeed macular edema was noted on OCT.

CONCLUSIONS

RGP over refraction allows the clinician to isolate decreased BCVA caused by corneal distortion versus media opacities or other posterior causes of reduced vision. This quick and simple test also allows both the patient and the clinician to determine if a fitting for specialty contact lenses would be worthwhile at that point in their care.

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REFERENCES

- Chen ES, Terry MA, Shamie N, Hoar KL, Phillips PM, Friend DJ. Endothelial Keratoplasty: Vision, Endothelial Survival, and Complications in a Comparative Case Series of Fellows vs Attending Surgeons. *American Journal of Ophthalmology*. 2009;148(1):26-31.e2. doi:10.1016/j.ajo.2009.01.022
- Chen ES, Terry MA, Shamie N, Hoar KL, Friend DJ. Stability of hyperopic refractive shift following Descemet-stripping automated endothelial keratoplasty. *J Cataract Refract Surg*. 2009;35(8):1473. doi:10.1016/j.jcrs.2009.04.023