

Decision-Making in a Gray Area

An Unexpected Soft Prosthetic Lens Fitting

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INTRODUCTION

Soft prosthetic contact lenses are best recognized for their cosmetic benefits but can also be an invaluable therapeutic tool to combat symptoms of photophobia and glare. For many pathologies, these tinted or computer-generated iris print lenses can be duplicated year after year but for eyes suffering from more serious complications, e.g. status-post keratoprosthesis (KPro), frequent refits are needed due to subtle changes in eye shape. These fits often require advanced lens troubleshooting strategies and creative solutions, to satisfy the patient's aesthetic and visual needs.

CASE REPORT

A 69 year-old Hispanic female status-post KPro OS complained of poor cosmesis with her current soft prosthetic contact lens (from an outside practice) after having been lost to follow-up from the University Eye Center three years prior.

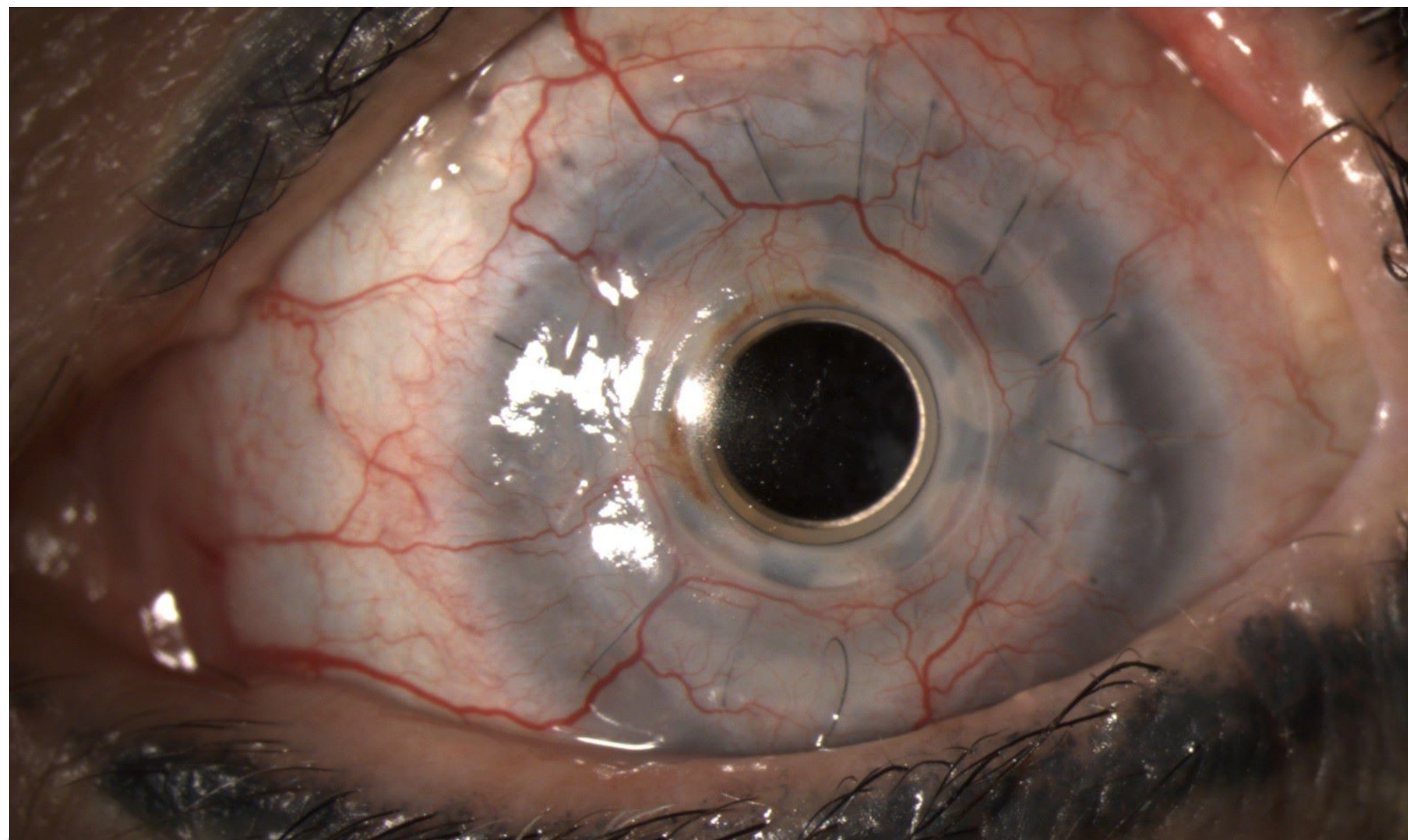


IMAGE 1: Appearance of KPro OS

Ocular History: Herpes Simplex Keratitis of the left eye in 1999 requiring a penetrating keratoplasty (PKP). The corneal graft remained clear without complication for 10 years until suffering a graft rejection for which a repeat PKP was performed in 2009. This second full-thickness transplant became infected twice within a 4-year span leading to the need for a Keratoprosthesis (KPro) in 2013. She unfortunately suffered a KPro-related endophthalmitis OS in 2019 which was treated with intravitreal injection and partial lid tarsorrhaphy OS. She has had a cataract extraction with lens implantation OD, and is also treated for open-angle glaucoma OU and dry eye OU. Since KPro transplantation, the patient has worn a tinted soft prosthetic lens in the left eye for improved cosmesis.

Ocular Medications:

- Pred Forte 1%: 1 drop OS QD, Moxifloxacin: 1 drop OS QD, Latanoprost: 1 drop OU QHS, Systane artificial tears: 1 drop OU QID

Habitual VA (uncorrected):

- OD: 20/25-2
- OS: Light Perception

Remarkable Exam Findings:

- Eyelids: Partial lid tarsorrhaphy OS with tattoo eyeliner OU
- Cornea: KPro OS - central implant embedded without extrusion with significant neovascularization and opacification peripherally
- Lens OD: PCIOL – Clear, well-centered implant
- Optic nerve OD: Superior and inferior rim thinning, with 0.6 round cup-to-disc ratio

Lens Fitting:

The patient reported extreme happiness with the "last lens" finalized at our clinic 3 years prior. At first, a duplicate brown-tinted lens (+0.75 sphere, 8.60 BC, 14.5 Dia) was ordered. However, this lens showed significant inferonasal decentration (IMAGE 2).

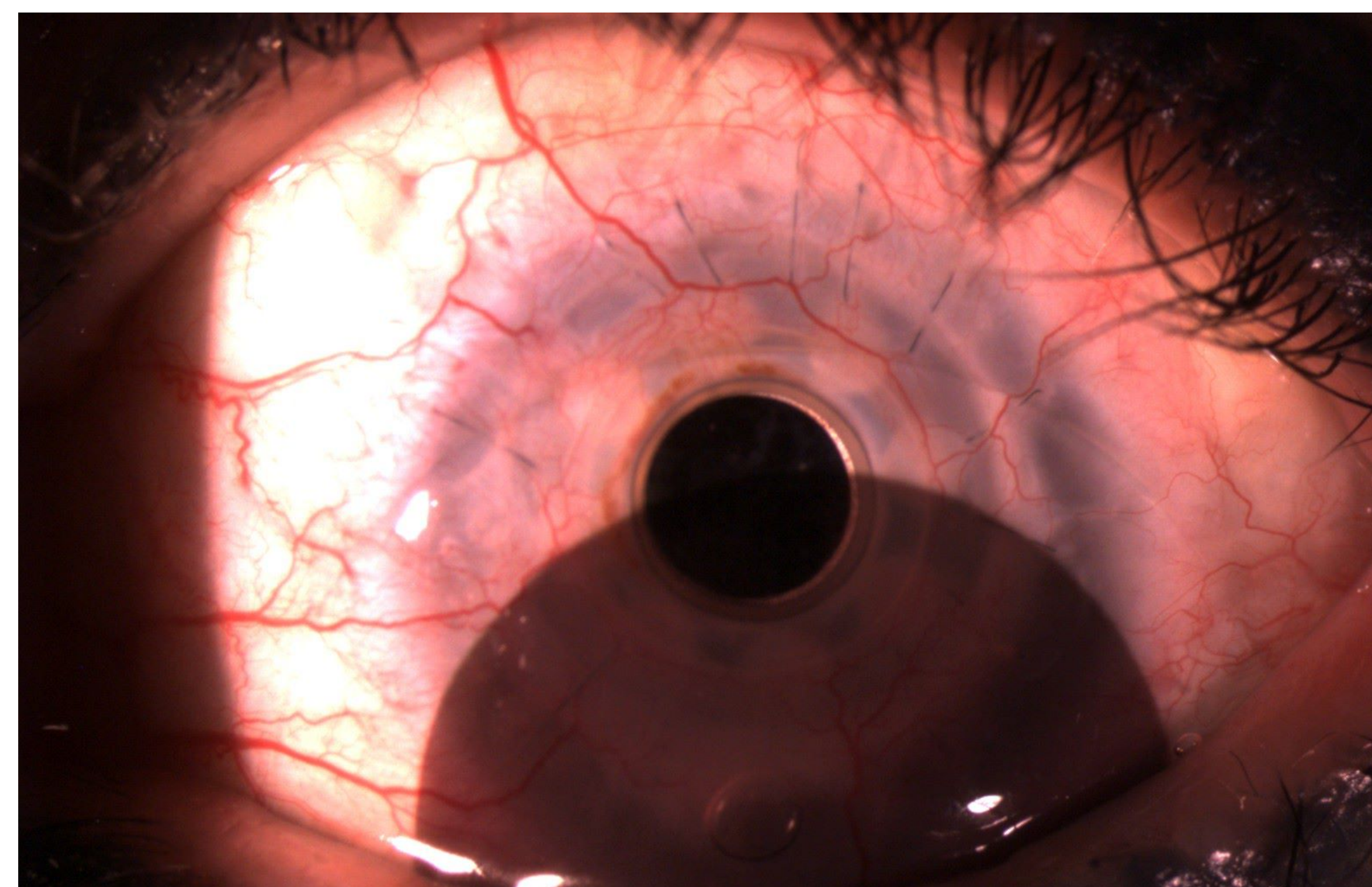


IMAGE 2: The patient's previous habitual lens (finalized 3 years prior) now yielding significant inferior decentration with limbal exposure

Due to poor cosmesis, a variety of clear lenses were trialed in-office, with base curves ranging from 8.30 to 9.80, and diameters ranging from 14.0 to 16.0. The best-fitting clear soft lens (+2.00 sphere, 9.80 BC, 16.0 Dia) remained decentered but the KPro implant was inscribed into the fitting lens to account for significant lens decentration. The lens was tinted brown with a 2 diopter base down prism ballast for added stability. However, the final lens was still not acceptable aesthetically (IMAGE 3), despite initial in-office success.

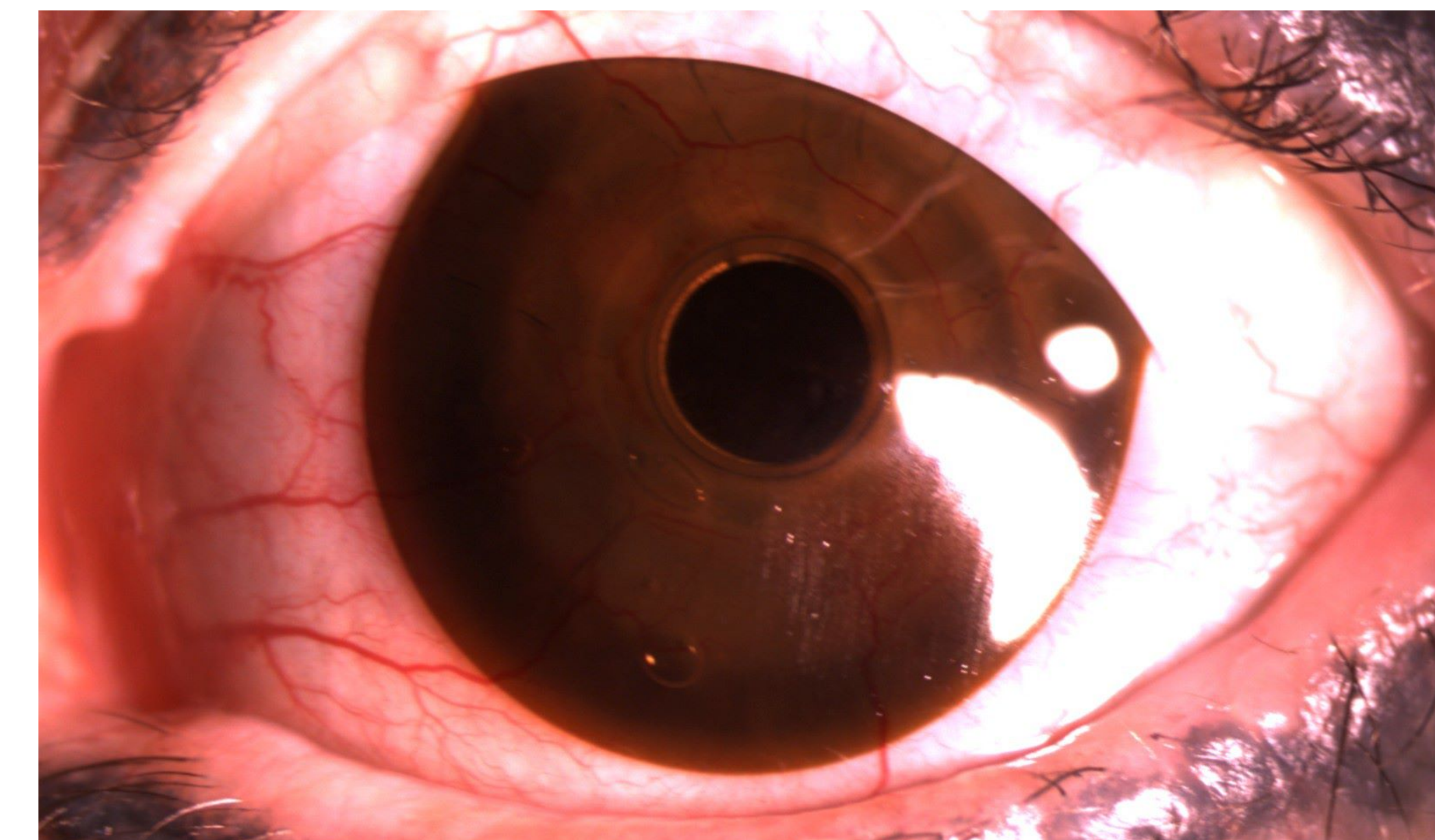


IMAGE 3: Best-fit lens with decentered tint and prism ballast (image taken in-office, prior to dispense). Upon habitual wear, fit worsened.

After a lengthy process of re-ordering duplicate lenses and re-drawing ideal locations of tints on decentered lenses, an AIR OPTIX® COLORS (gray) lens was trialed in the non-operated eye to color-match the KPro OS. This lens system was ultimately finalized (IMAGE 4), with a clear bandage lens overlying OS.

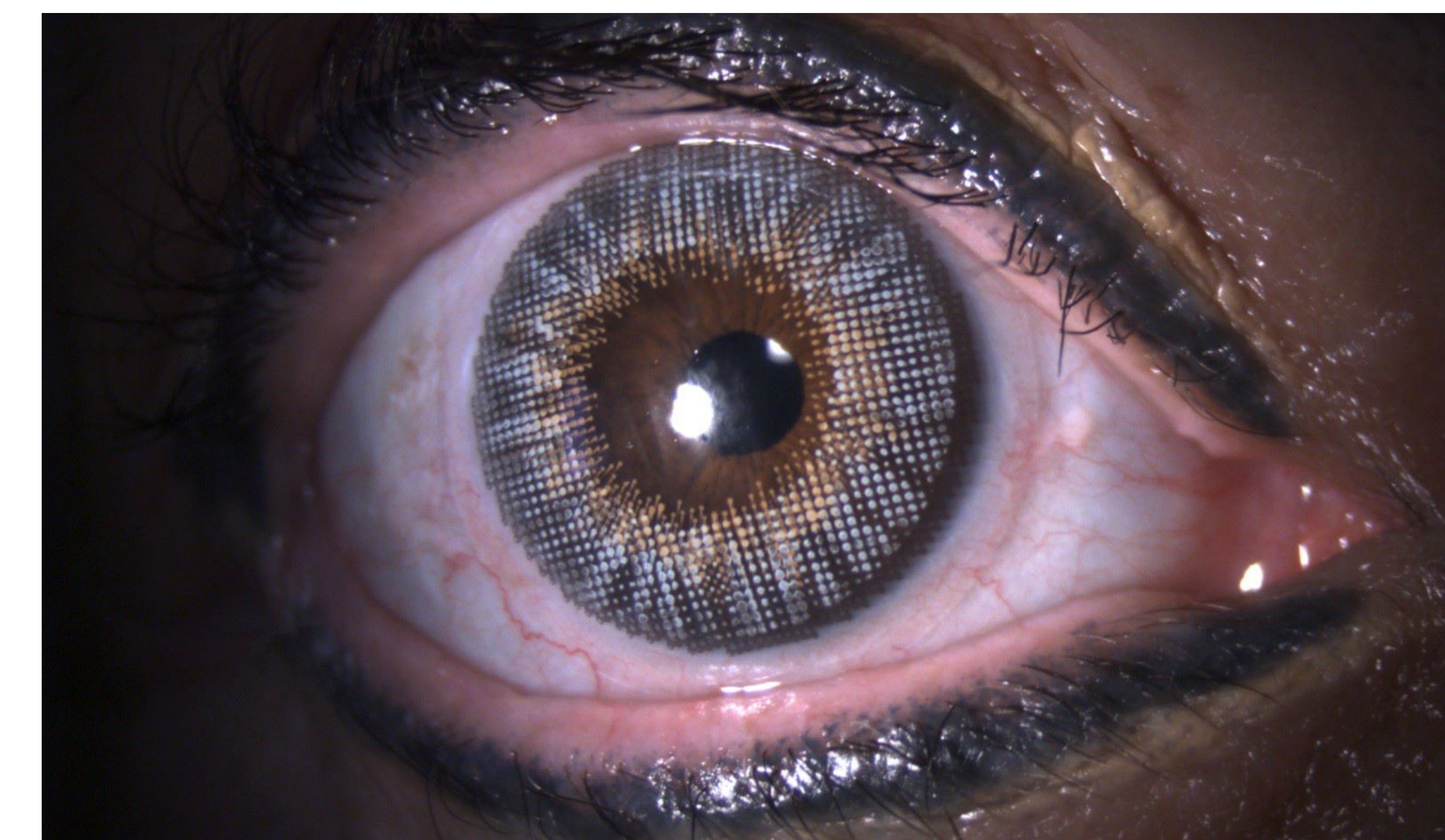


IMAGE 4: Finalized gray soft contact lens OD

DISCUSSION & CONCLUSIONS

Soft prosthetic custom contact lens fittings can appear daunting as lens customizations are almost infinite, especially with the ability to decenter tints and add prism ballasting. Therefore, it is important to be familiar with all the tools and lens alterations available in order to achieve each patient's individual success. However, remaining creative and flexible is also imperative, as the best decision may be different for each patient, and may lie in a "gray area".

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