

## Background

Laser-assisted in situ keratomileusis (LASIK) is a standard procedure to correct refractive error. It is contraindicated in patients that are more likely to sustain trauma to their eyes and adnexa. LASIK flap dislocation occurs in 1-2% of patients.<sup>1</sup> This case discusses strategies to improve vision in a patient with LASIK flap injury and epithelial ingrowth.

## Case History

A 43-year-old Caucasian male presented for a medical contact lens fitting. He complained of blurry and doubled vision in his right eye that could be alleviated if he tilted his chin up.

Patient History  
LASIK OU in 2008  
2020 OD suffered an injury from an electrical plug that disrupted the LASIK flap and caused epithelial ingrowth

## Clinical Findings

Visual acuities  
OD: 20/40 OD, 20/20 with pinhole  
OS: 20/20

Manifest refraction was  
OD: -3.50-1.00 x 107, 20/25  
OS: Plano, 20/20

Biomicroscopy  
OD: corneal opacity with visually significant epithelial ingrowth across the visual axis  
OS: unremarkable

Topography  
OD: central island of irregularity consistent with the area of epithelial ingrowth  
OS: unremarkable

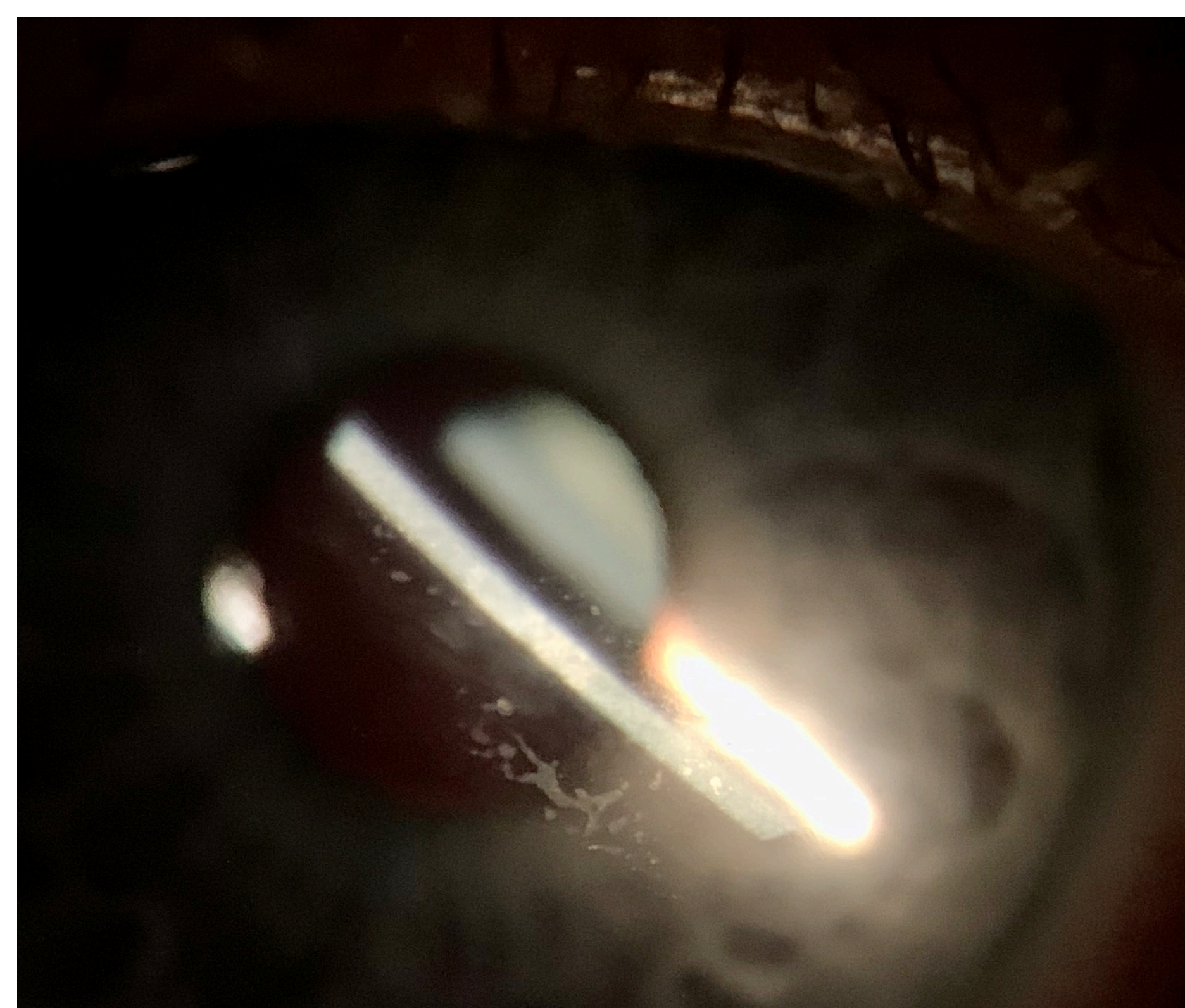


Figure 1 Initial presentation, epithelial ingrowth 3mm

## Treatment and Management

### Initial lens fitting:

SynergEyes Duette 7.5/ 8.1 (M) /14.5mm/-1.25 DS, VA 20/15, over-refraction Plano.

The lens was slightly decentered inferior temporal and had good movement on blink, see Figure 4. He reported the vision improved binocularly, without having to tilt his head. Lens comfort was adequate with mild lens awareness.

Following the initial lens fitting, he elected to proceed with a LASIK flap irrigation and float, in an attempt to lessen the corneal opacity and prevent possible progression of the epithelial ingrowth. The patient will resume his contact lens fitting after he has fully healed

### Initial lens pickup and dispense

Initial lens: SynergEyes Duette 7.5/ 8.1 (M) /14.5mm/-1.25 DS, VA 20/150, over-refraction -2.00 DS. Centered and moved well, however not dispensed due to vision.

Reorder: SynergEyes Duette 7.5/ 8.1 (M) /14.5mm/-3.25 DS, VA 20/15, over-refraction Plano. Centered and moved well, lens dispensed.

### 3 mth follow-up

Patient reports discomfort wearing hybrids for an extended period of time. Changes were noted in vision, slit lamp and topography, likely leading to lens intolerance. After discussing the options, patient elected to proceed with soft contact lens.

Manifest refraction OD: +0.75 -1.00 x 066, 20/20-1

Trials ordered based on refraction: Acuvue Oasys 1 day for astigmatism 8.5/14.3/ +0.75-0.75x 070

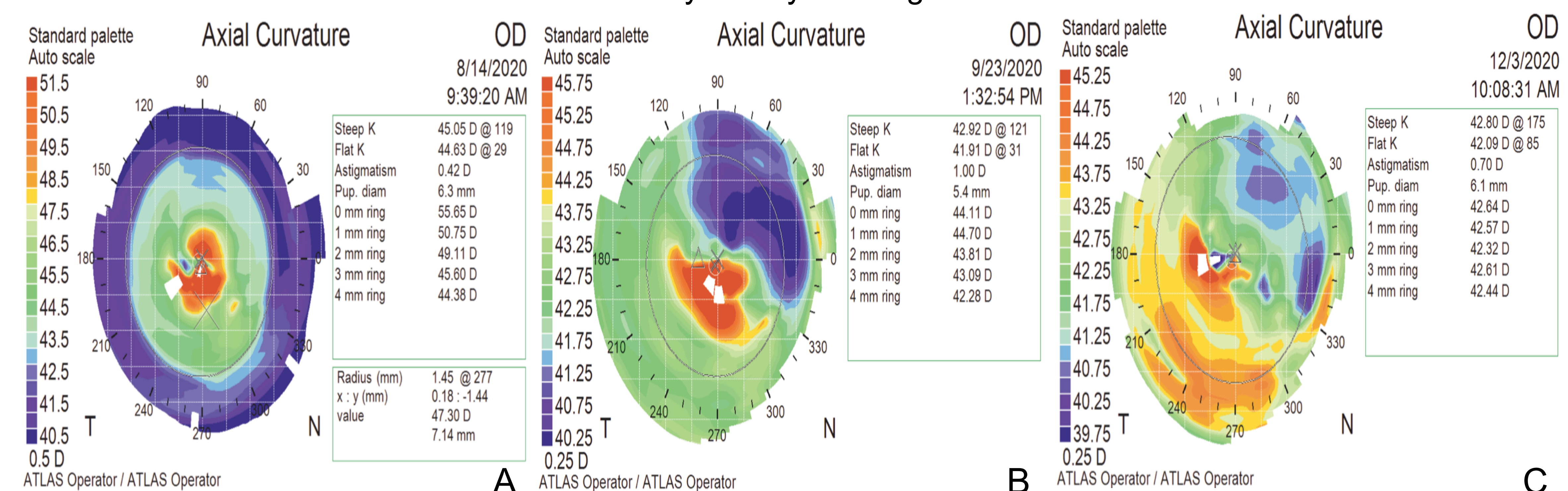


Figure 2 Topography progression. A) initial onset, a central area of steepening where injury occurred. B) After epithelial washout C) 3 months after procedure, inferior steepening occurring

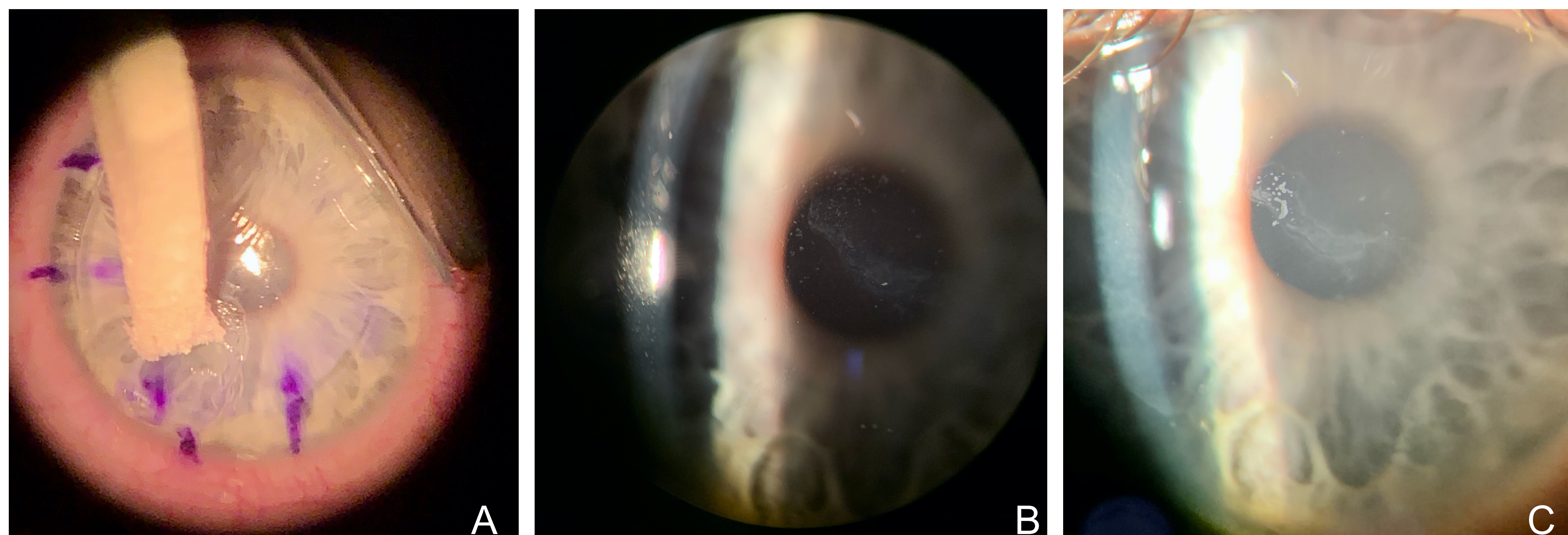


Figure 3 A) During epithelial ingrowth washout procedure B) After epithelial washout C) 3 months after procedure, reoccurrence of epithelial ingrowth

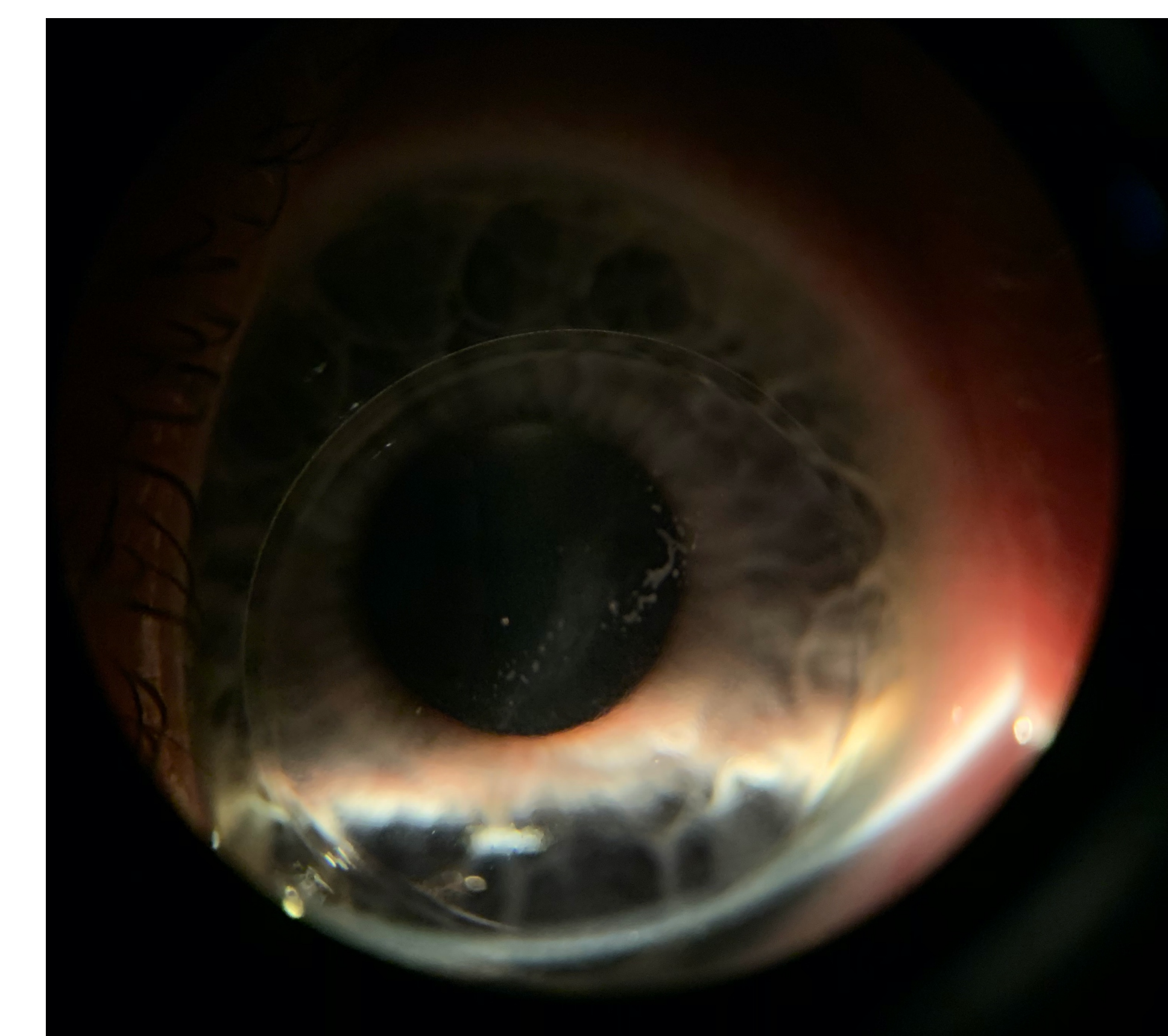


Figure 4 Duette Hybrid lens on eye, epithelial ingrowth visible

## Discussion

Hybrid lens combine a RGP lens with a soft silicone skirt to provide the optimal vision of an RGP with the comfort of a soft contact lens. The SynergEyes Duette lens is considered off label for use in irregular corneas. However, the patient's need for the superior vision provided by a rigid lens and his history of soft contact lens use made him an ideal candidate for a hybrid lens modality.

As his cornea continued to heal after the epithelial ingrowth washout, modifications were needed to meet his visual needs. If distortion continues with soft contact lens, RGP can be consider as an alternative to achieve similar visual results as hybrid design.

## Conclusion

Although Lasik flap dislocation is rare, it does have long standing consequences when it occurs. There have been documented cases of late traumatic flap dislocation up to 14 years after the procedure.<sup>1-3</sup> The resulting vision will vary from case to case.<sup>1-3</sup> In circumstances where the vision is inadequate, a specialty contact lens can be implemented.

## References

Available on request.