

Background

Specialty contact lenses have the potential to improve visual outcomes for many patients, including those with degenerative myopia. Spectacle lenses, soft contact lenses, and refractive surgery are not always the best option. Translating rigid gas permeable lenses have the potential to heighten optics at both distance and near for presbyopia. Being able to fit these lenses appropriately with topographies, refraction, and slit lamp evaluations can achieve stellar visual acuities at varying distances without compromising vision or relying heavily on readers.

Case Description

A 55 year old woman with degenerative myopia first came to the clinic in 2008 with spectacles that best corrected to 20/40 vision with high index. At this time, she was wearing rigid gas permeable lenses that allowed her to see 20/20 comfortably. After a few years of minimal adjustments, presbyopia began to make it difficult to perform near tasks. With poor adaptation to monovision, she was open to multifocal contact lenses. The ART Optical Expert Progressive lenses have wide parameters and blend similarly to a progressive spectacle. They have base down prism at the bottom of the lens to keep stability and appropriate translation as the patient looks in downgaze to read, providing vision for distance and near that is incomparable to any other lens modality.

Methods

Once the decision for specialty lenses was confirmed, topographic maps were taken with the Medmont (Fig 1a & 1b). The flat and astigmatism were considered when designing the lens empirically to determine how much to steepen the base curve. Lower lid position was also considered when determining the initial segment height. Any changes made afterwards, were dependent on the staining pattern and fit during the slit lamp examination.

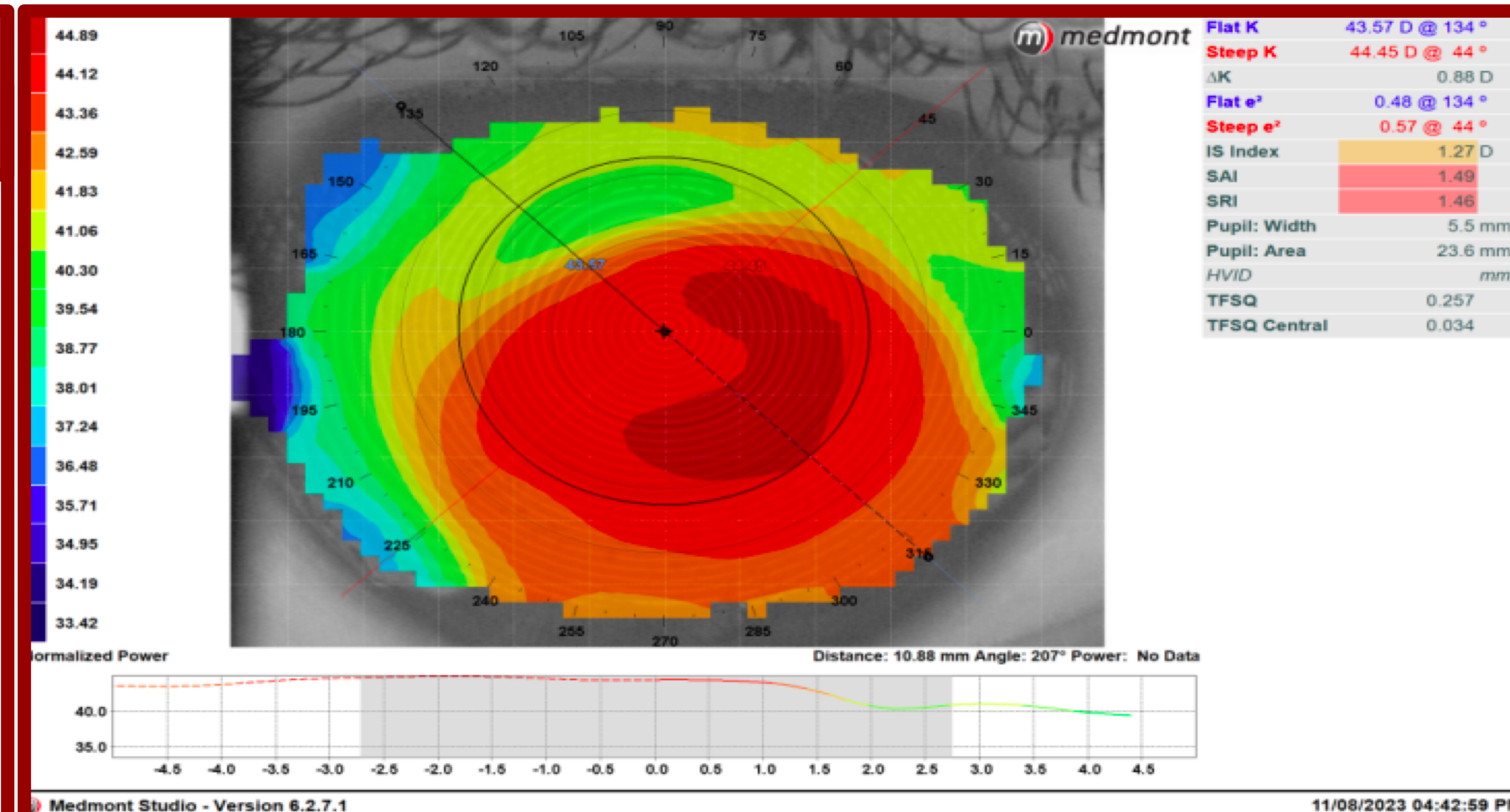


Figure 1a: Medmont image of the corneal topographic map of the right eye.

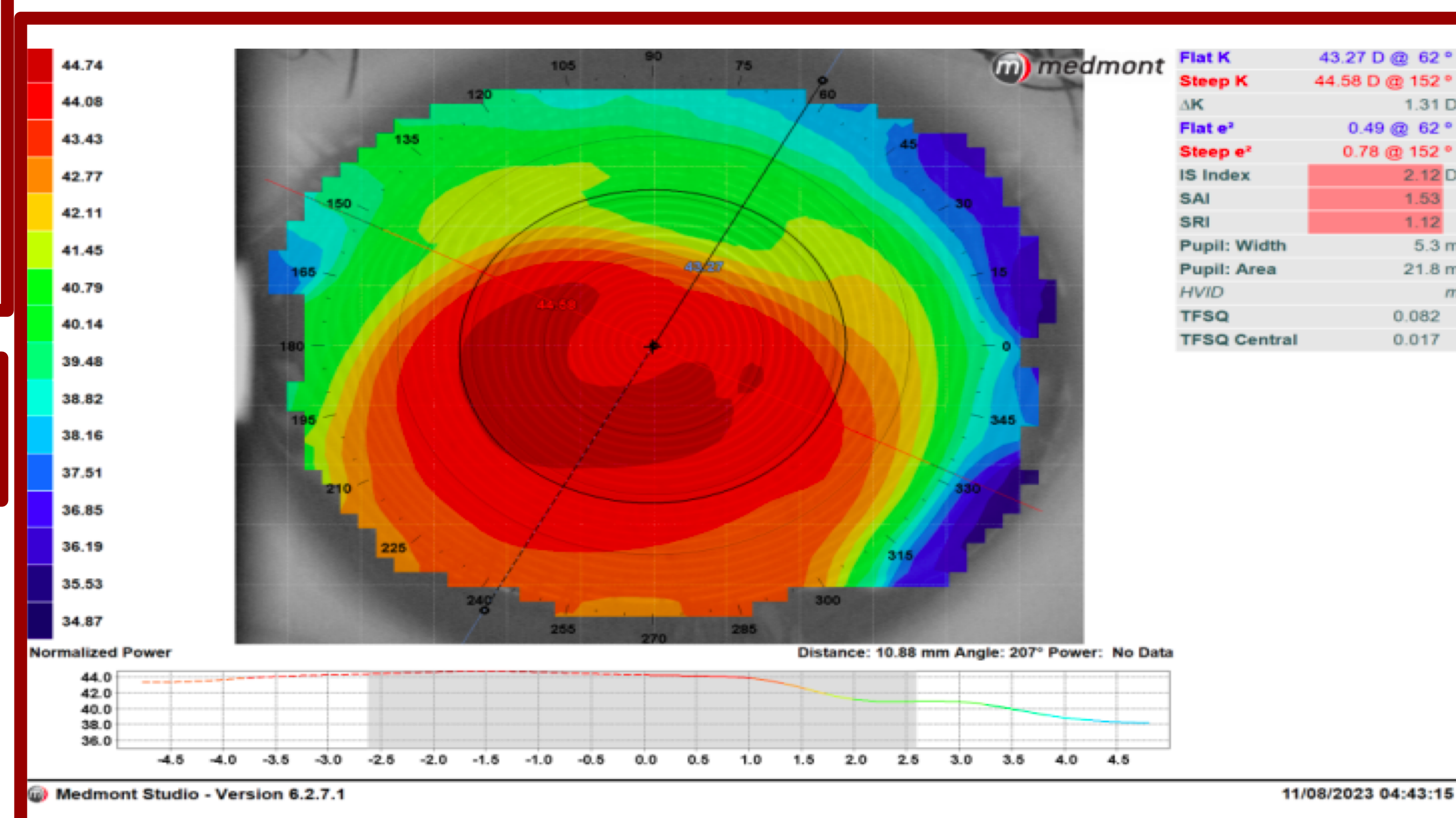


Figure 1b: Medmont image of the corneal topographic map of the left eye.

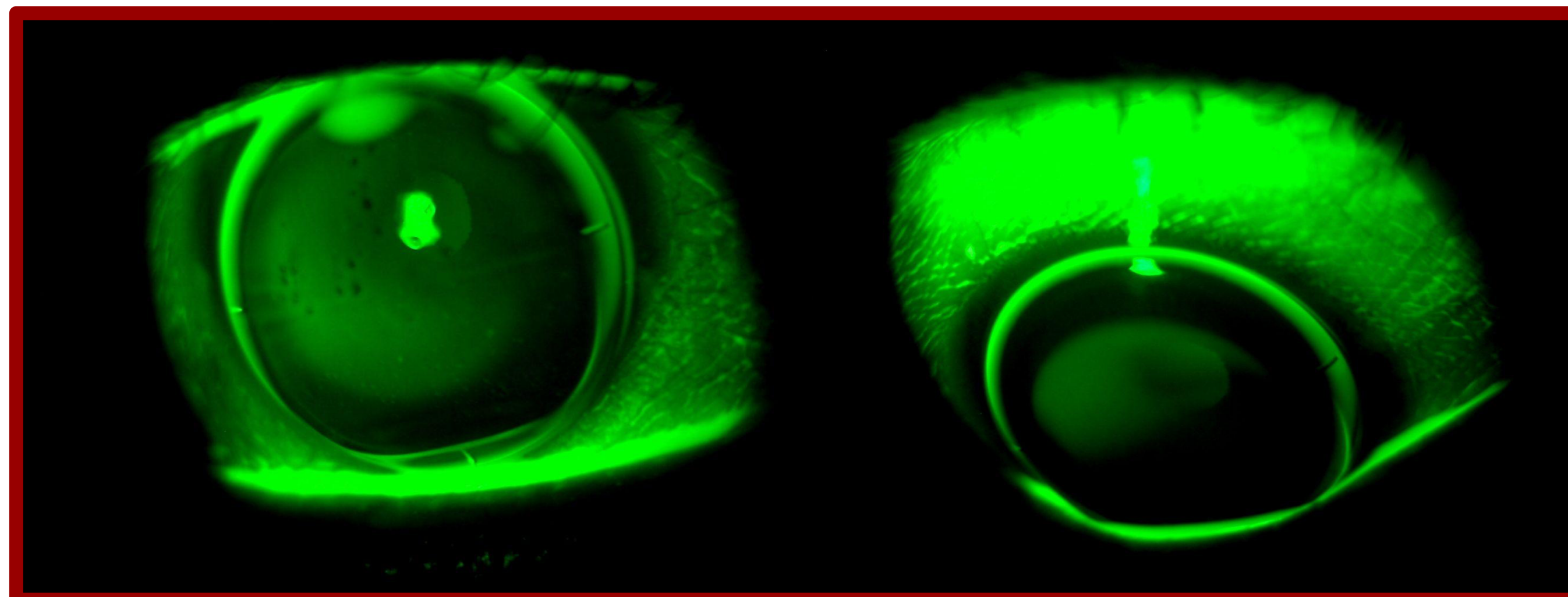


Figure 2: See below.

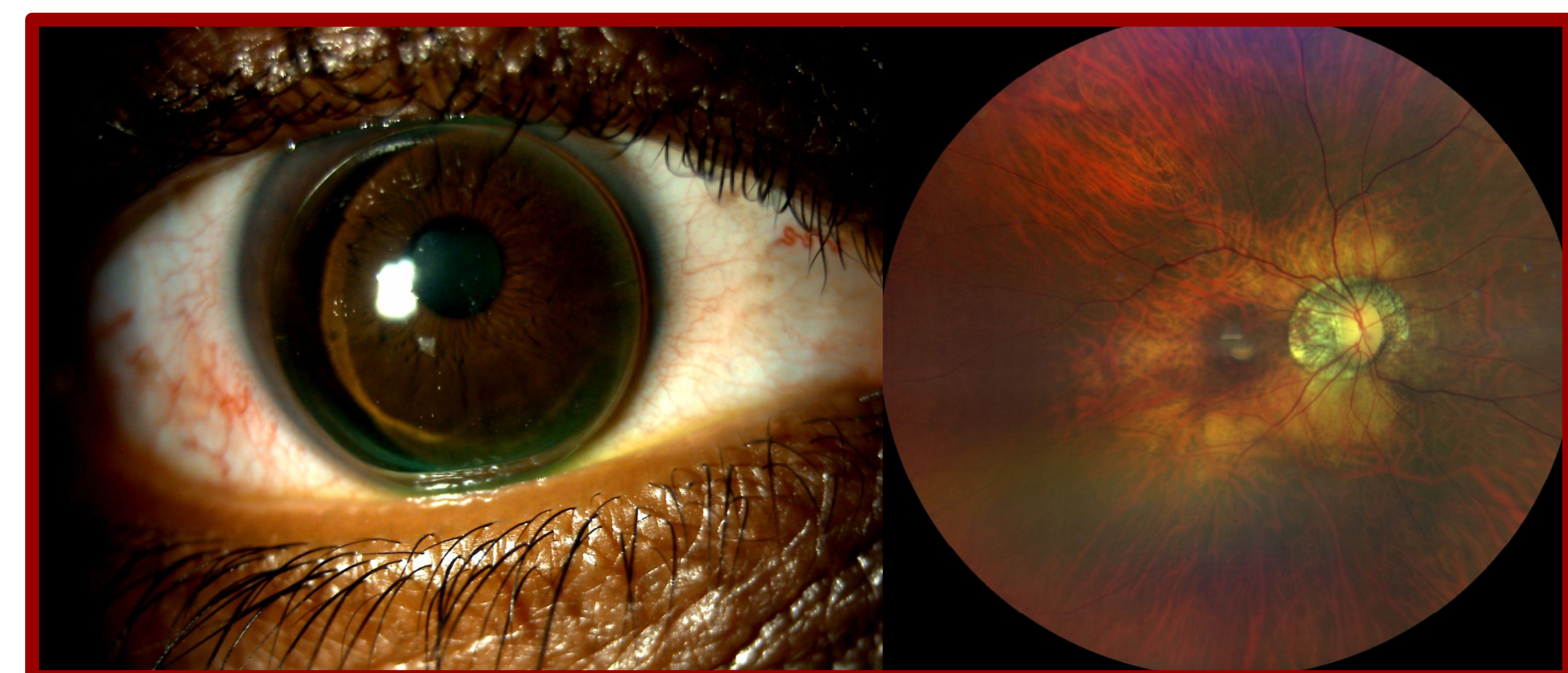


Figure 3: See below.

Figure 4: See below.

Figure 2 (above): Lens placed on eye with fluorescein dye depict a well centered intrapalpebral trifocal RGP lens with good translation on downgaze for optimal near aid.
Figure 3 (above): Lens on eye with diffuse lighting represents good centration and lid stability with a thicker edge at the bottom due to prism ballasting.
Figure 4 (above): Fundus photo of right eye captures the extent of degenerative myopia.

Case Description with Results

The prism ballasted lens will allow for correct orientation of the lens and for the lower lid margin to push the lens up in downgaze so the patient will be able to focus into the intermediate or reading corridor. Our patient was able to achieve 20/20 at distance and near with these lenses, which is better than any other technology she had tried in the past. With her demanding job as a lawyer, it allows her to comfortably navigate without reliance of glasses. At one of her appointments, she reported becoming more reliant on readers to get optimal near vision. After slit lamp examination and careful observation of lens fit and translation, it was clear that the segment height needed to be increased by 0.2mm to be sure that she is able to reach the full add power towards the bottom of the lens. At the follow up visit with the new lenses, she found that her reading was sharper without reliance on the readers. It was imperative that only small adjustments are made when fits are near perfect to avoid setting progress back.

Conclusion

Specialty lenses typically require several visits to get good comfort and vision. With translating rigid gas permeable lenses, there is the chance to achieve quality vision at distance, intermediate, and near without compromising too much at any point. These lenses are good for long days and various activities. The base down prism keeps stable vision as the patient looks between different zones while adjusting focus. Though it may take a few attempts at finding the ideal measurements to fit the patient's needs, once achieved, very little changes need to be made in the future years to uphold patient satisfaction.

Acknowledgement and References

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