

Case Report:

Fitting Hybrid lenses based on sagittal height

Cian Gildea

Cian Gildea completed his bachelor degree at the Dublin Institute of Technology where he gained his BSc Optom with honors. During his course, 6 months were spent at the university of Houston expanding his knowledge on contact lenses. He is currently working as a clinical optometrist at the Wellington Eye Clinic in Dublin, Ireland. The Wellington Eye Clinic is a laser and refractive practice, with a special interest in corneal cross linking.

Mr Gildea has a strong interest in specialty contact lenses and their application for irregular corneas.



Introduction

Male 49 years old, diagnosed with a keratoconus grade 3+ in his left eye. Current lens is pressing on the top of the cornea and needs to be replaced. VA with the lens is 6/15 (logMAR 0.4). Patient presented a pinguecula on both of the eyes. It was decided to use a hybrid lens to provide the visual acuity of a rigid lens and the comfort of a soft lens. The aim for the soft skirt was to drape over the pinguecula and prevent irritation.

Profilometry

A sagittal height map was obtained using the Eaglet-Eye, Eye Surface Profiler (ESP) (Figure 1). With the ability to accurately measure sagittal height we concluded that the exact height of the cone is 150 micron. This image contains 3 captured measurements which are combined into 1 bisphere elevation map. This way we can collect as much data as needed to provide a suggestion for the best fitting lens. Together with the algorithms created by the Eaglet-Eye we can suggest the best fitting lens.

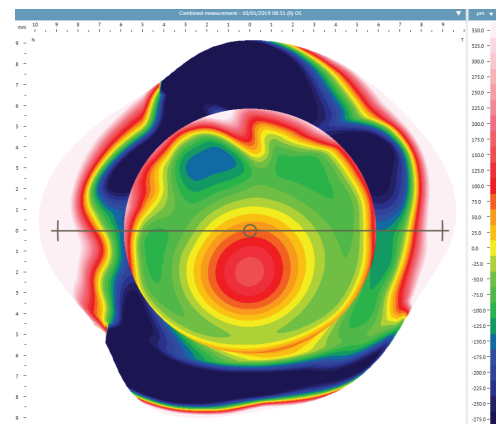


Figure 1

Lens Fit

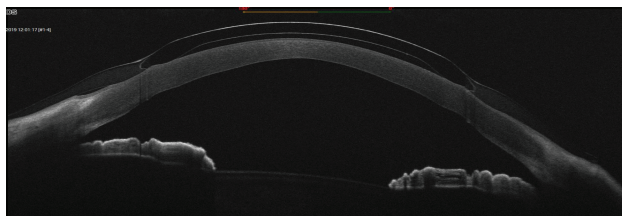


Figure 2

Figure 2 shows the hybrid lens vaulting over the cornea. Visualizing a well distributed fluorescein pattern following the cornea.

Final Order

In this case the first fitted lens was the final lens order. The lens order was determined following the suggestions made by the ESP algorithm. The lens provides approximately 50 micron of clearance and is comfortable for the patient

OS Synergeyes Ultrahealth: 350 Vault, Medium skirt, S-3.00, BCVA 6/7.5 (logMAR 0.1)

Conclusion

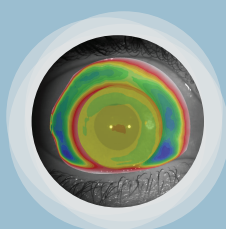
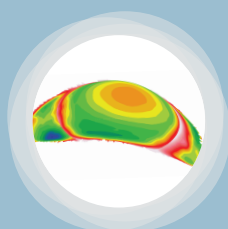
The ESP can help practitioners in estimating the best fitting lens. It is able to do a vault prediction for hybrid lenses. Therefore, it causes a reduction in refits or time spent per patient.



eaglet-eye

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