

Case Report:

Calculating a custom Maxim from sagittal height information

Dr. Alex Gibberman

Dr. Alex Gibberman is an OD currently working at Harper's Point Eye Associates, Cincinnati, Ohio. He graduated with honors from Pennsylvania College of Optometry in 2014. Having more than 5 years of diverse experiences, particularly in specialty contact lens fitting.



Introduction

23-year old Caucasian showed a keratoconus in both eyes. He has had crosslinking done in the left eye and is scheduled for crosslinking in his right eye soon. After the procedure on his left eye he was referred to Dr. Gibberman to be fit with a scleral lens. A scleral fitting will be done on his right eye as soon as it has recovered from the upcoming crosslinking procedure.

Best corrected visual acuity with glasses is currently OD 20/30 (0.20 logMAR) and OS 20/60 (0/50 logMAR).

Profilometry

An elevation map was retrieved with the Eye Surface Profiler (ESP), Eaglet-eye, Houten, The Netherlands. With this information available he gained information off the ocular surface with up to 2 micron accuracy. The top of this cone is marked by the central elevation which is coloured red in image. This describes an elevation of 120 micron, suggesting the need for a good fitting scleral lens.

Lens Fit

Working together with the consultants of Acculens, Dr Gibberman came to a customized fit based on the sagittal height measurement. A slab-off prism was added to the lens for centration. A toric peripheral curve was not found to be necessary.

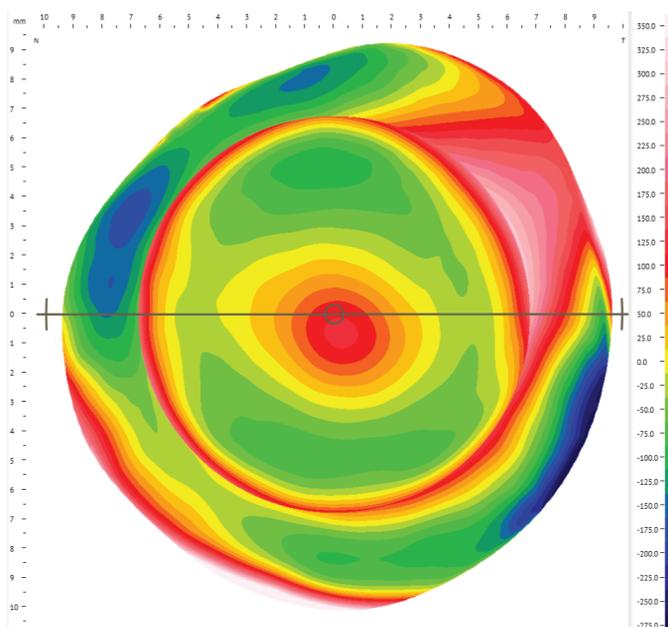


Figure 1

Final Order

A Maxim (Acculens, Denver, Colorado) was ordered using optimum extra, with a final base curve of 8.23 and diameter 16.4. The back optical diameter used is 9mm with a center thickness of 0.252mm. The reference sag is 4.51. No blanching or impingement was visible when reviewing the lens, a good central clearance was achieved with no complications.

Conclusion

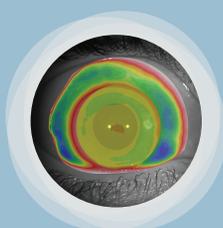
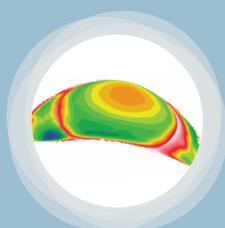
The achieved visual acuity with the new lens provided by Acculens was 20/25 (0.1 logMAR) .
Profilometry can help guide consultants in how to adjust the lens to achieve a good fitting lens. The ESP can provide all information needed to select and customize the best fitting lens. This makes it easier to personalise a lens fit when necessary without the need for a refit.



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