Case Report:
Easy Scleral Fitting

Dr. Barry Leonard

Dr. Barry Leonard is a therapeutic Optometrist with glaucoma certification and is skilled in the treatment and management of eye diseases, speciality contact lenses, corneal refractive therapy and the pre and post-operative care of patients. He combines his clinical experience with his task as Adjunct Clinical Professor for the Western University of Health Sciences, Pacific College of Optometry and Pennsylvania College of Optometry at Salus University. He is a member of the American Optometric Association, the California Optometric Association and a member of the AOA Contact Lens and Cornea Section.

Introduction

A 31 male had previously worn scleral lenses. With his last pair of lenses there were complaints of red eyes after 4 hours of wear and blurred vision when driving at night. First pair was fitted using a 'regular' placido type topographer, this time it was decided to do a refit based on Profilometry data using the Eaglet-Eye, Eye Surface profiler (ESP). Accurate sagittal height data of the ocular surface was obtained which was used to order the best fitting lenses.

Profilometry measurement

Profilometry directly measures sagittal height, and creates a bi-sphere elevation map which shows where data is more elevated or depressed.

An elevation map consists of 2 bispheres, one estimating the corneal height parameters (green dotted line), and 1 visualising the sclera (orange dotted line). These two are combined into one bisphere elevation map which is displaying the elevated and depressed areas of the ocular surface.

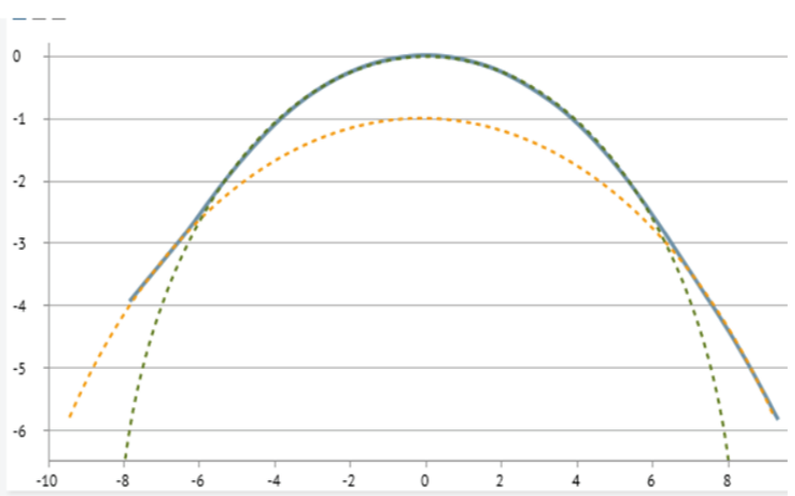

Figure 1

The images of the right and left eye both display scleral toricity (FIgure 2). This is visible due to the red colouring in one meridian, and blue colouring area in the other meridian. Which are suggesting a difference in elevation between both meredians. Everything which is displayed as red is suggested to be higher, everything that is blue is lower.

We expect the final fitting lens to have a toric landing zone for the optimal fit.

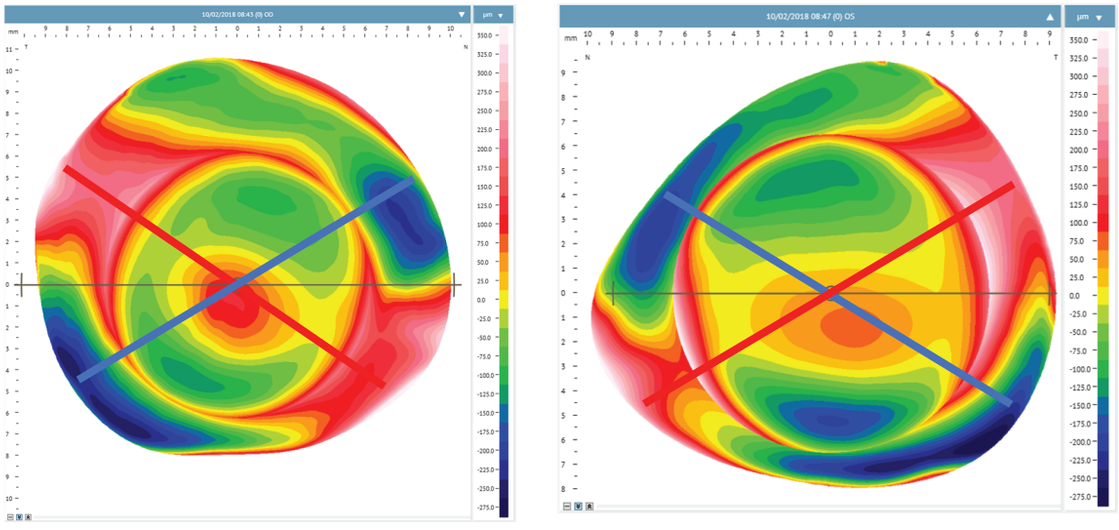

Figure 2

Lens Fit

OCT image is visualising a good central clearance of the lens (OD 270 micron). There was no blanching or impingement visible when reviewing the lens. The lens had a good central centration and no rotational issues.

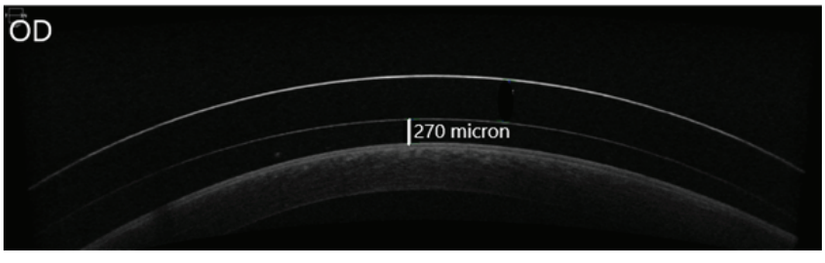

Figure 3

Lens Order

In this case the final order was determined following the suggested lens by the ESP algorithm. Two measurements were taken and the outcomes were put together in one lens order, which concluded in the order stated below.

RE: Zenlens 17 Prolate, BCR 7.80, S-2.50, SAG 5050, Flat 3 / Steep -5

LE: Zenlens 17 prolate, BCR 7.80, S-2.75, SAG 4900, Flat 4 / Steep -2

The first lens order was the final fitting lens including a toric landing zone.

Conclusion

With the last ordered lenses the patient stated a better comfort and improved vision. In addition, the patient felt confident driving at night again. No redness occurred and no deposits were noticed on the scleral lens. The ESP algorithm is very accurate guideline to help practitioners decide on the best fitting lens, aiming for the first fitted lens to be the final fitted lens.