PREMIER VISION CARE

OPTOMETRY

Corneo-Scleral Tomography to Aid in the Fitting of Corneal Ectasia with Scleral Lenses

Calista Ming, O.D., F.A.A.O., F.S.L.S.

ABSTRACT

The advent of corneo-scleral tomography has improved the approach to fitting scleral lenses by measuring both the corneal shape and the scleral shape beyond the limbus.

INTRODUCTION

A 42 year old Hispanic male presented to our clinic for a scleral lens fitting. His ocular history was positive for keratoconus OU. He was currently wearing glasses but complained that vision was no longer sufficient with glasses. Based on his complaint and history, we proceeded to fit him with scleral lenses OU.

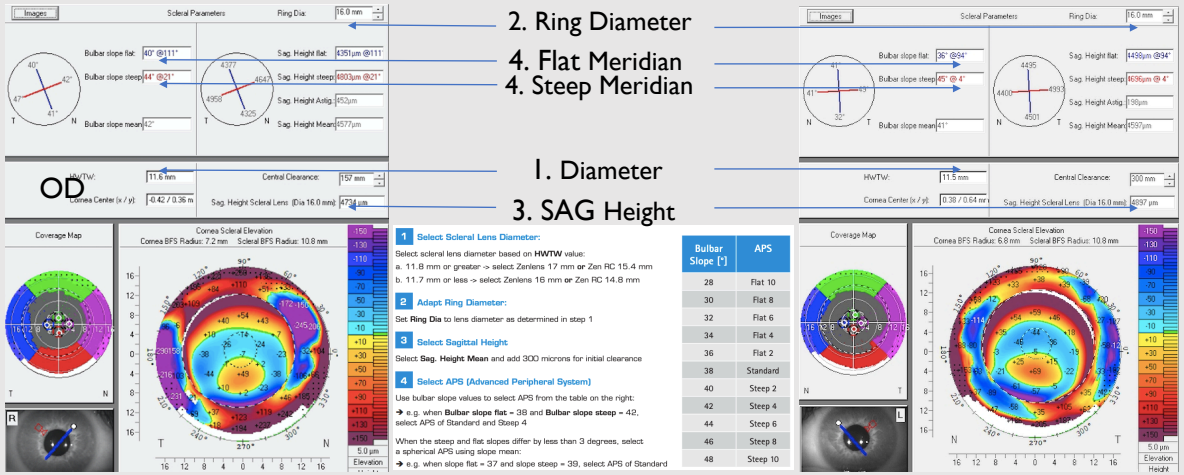

Figure 1: Pentacam CSP (Cornea Scleral Profile) Report of the patient's OD (Left) and OS (Right) with predicted scleral lens parameters using Scleral Lens Fitting Guide for Zenlens (Center)

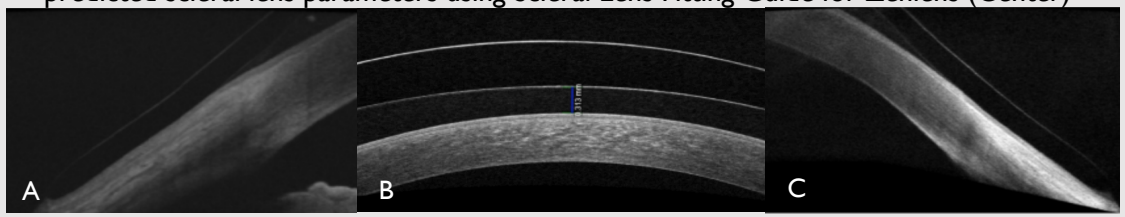

Figure 2: OCT of scleral lens OD a) nasal b) central c) temporal

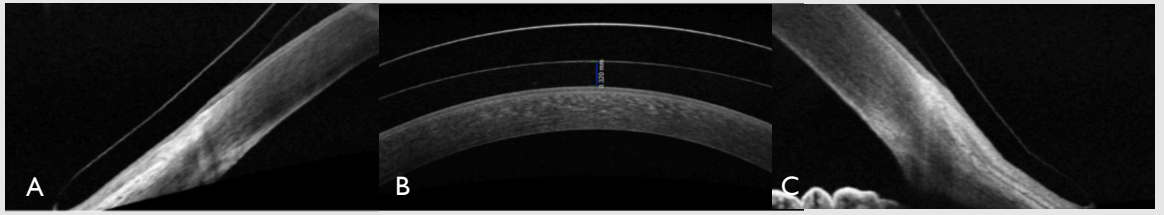

Figure 2: OCT of scleral lens OS a) temporal b) central c) nasal

Parameters	Predicted OD	Final OD	Predicted OS	Final OS
SAG	4734µm	4700µm	4897µm	4800µm
Edge Profile (Flat)	Steep 2	Steep 1	Flat 2	Flat 1
Edge Profile (Steep)	Steep 6	Steep 5	Steep 7	Steep 8
Diameter	16.0mm	16.0mm	16.0mm	16.0mm
Central Clearance	300µm	313µm	300µm	320µm

DISCUSSION

Prior to corneo-scleral mapping, SAG could be extrapolated from corneal topography or anterior segment OCT, however, corneo-scleral tomography now allows us to more accurately determine SAG measurements. Also the amount of scleral toricity was harder to quantify previously. These features of corneo-scleral tomography aids in the successful fitting of a scleral lens, which in turn promotes optimal cornea health and successful scleral lens wear for the patient.

CONCLUSION

In this case the final scleral lens parameters were close to those predicted by the CSP Report, which facilitated in streamlining the fitting process. Corneo-Scleral tomography can be used to aid in the scleral lens fitting process of both regular and irregular corneas.