



Improving Comfort of Scleral Lenses

LINH CHIEU, OD

State University of New York, College of Optometry's Cornea and Contact Lens Resident, 2020-2021
State University of New York, College of Optometry, Class of 2020

BACKGROUND

A 30 year old male presented for contact lens evaluation with moderate keratoconus OD and mild keratoconus OS. The patient has a history of crosslinking OD, strabismus surgery at age 1, and a longstanding right exotropia causing headaches and eyestrain. He habitually wore soft contact lenses OU prior to transitioning to a corneal RGP OD lens for improved vision.

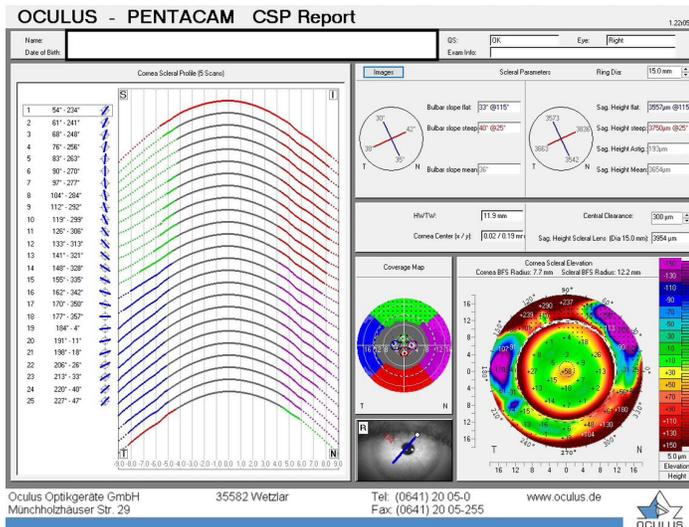
In 2016, due to RGP intolerance, the OD eye was re-fit with a scleral lens. He has struggled with overall lens awareness, discomfort, and poor VA resulting in only 4 hours of wear every other day. Despite this, he remains highly motivated to continue wearing his scleral lens as it dramatically minimizes his eyestrain and headaches.

EVALUATION

Current scleral lens OD, provides 20/80-1 V/A. Upon initial evaluation the Landing Zone (E) appeared well aligned to the scleral asymmetry 360°. Patient states he still has lens awareness and discomfort.

Upon closer evaluation, leakage was observed, and patient's comments of lens discomfort were confirmed despite multiple toric haptic alterations to the lens. Mild stromal thinning OD>OS consistent with Keratoconus was observed, but otherwise the lens and eye appeared unremarkable.

Oculus Pentacam was utilized for profilometry mapping and CSP imaging revealed an extremely irregular scleral profile indicating a need for a quadrant specific landing zone (E) to better align to the eye's scleral asymmetry.



PLAN/GOAL

Blanchard Onefit MED scleral lenses were fitted with the plan to add a quadrant specific toric landing zone (E value) to address the highly irregular scleral asymmetry indicated with CSP Profilometry. CSP software program available within the Onefit MED online fitting tool helped define the specific E values to address poor scleral alignment and discomfort. Front surface toric optics may be added to improve quality of vision. The front toric custom design tool available online easily determined proper axis specification needed for habitual orientation of the front surface toric optics.

NEW LENS

Onefit™ MED OD: SAG 4150 / Dia 15.6 / Power: +4.00-1.50x130

Mid Peripheral Zone (M Value): Standard

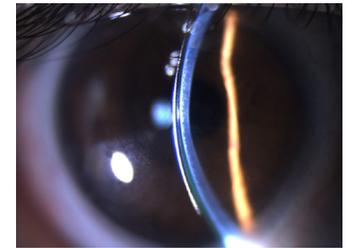
Limbal Zone (L Value): +50

Quadrant Specific Landing Zones (E Values):
12:00: Standard / 3:00: -75 / 6:00: -50 / 9:00: -25

Optimum Extra / Hydra-PEG

SUBJECTIVE COMMENTS

Patient very satisfied with the immediate improvement in VA and comfort of his new OD lens, allowing 12-16 hours of daily wear. States his vision is much more balanced, headaches and eyestrain are well controlled, and he forgets he is even wearing a contact lens in his right eye.



CONCLUSION

The Blanchard Onefit MED scleral lens was chosen due to its thin lens profile with one of the goals being oxygenation of the cornea and limbal stem cells. Fitting this lens in a mid (100) Dk material, with a thin lens and controlled fluid reservoir depth contributes to long term ocular health. In addition, the ability to control the landing zone (E values) in 4 different quadrants resolved discomfort. The front toric design improved visual clarity resolving the patient's headaches and eye strain. OD vision is now more equalized with that of the OS in a soft lens (20/20-1), as opposed to prior OD acuity of (20/80-1). This improved the prognosis for vision therapy and his ability to meet his high daily visual demands.