

Case Report:

Nystagmus Eyes: Need for Speed

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Dr. John Samsredi is an optometrist with almost two decades of experience in Eyecare. He is a graduate of the University of Benin and holds a Clinical Observation certification from the State University of New York College of Optometry (US). Dr. Samsredi is the Medical director of Ocuville Eye Centre in Nigeria and the founder of Ocuville Foundation, a NGO that lends its voice to the awareness, advocacy and support for eye health and youth related developmental issues.



Introduction

Female of African origin, albino, with nystagmus. Nystagmus is a condition where the eyes move rapidly and uncontrollably side-to-side, up and down or circular motion, usually associated with reduced visual function and contrast sensitivity. This patient has been visiting Occuvile since 2018 when she was 11 years old, with a number of vision related complaints associated with albinism, including blurred vision at distance and near, photophobia, significant nystagmus in both eyes. VA RE 6/36, LE 6/36 N24.

Current spectacle correction gave minimum improvement in vision and lifestyle: RE +3.50/-3.50 x180 and LE +3.75/-3.25x174 VA 6/18. She was also dispensed with low visual aids, which improved visual acuity to 6/12, but she reported her current manual-focus spectacle mounted telescope device as being heavy and cosmetically not great.

Background

It is worthwhile considering scleral lenses for patients who have infantile or even acquired nystagmus if the underlying condition/etiology cannot be addressed. It is a safe treatment option for patients who are usually left with little or no other hope for improvement and for whom even mild symptom relief is often appreciated by the patient.

However fitting of scleral lenses on a patient with nystagmus can be technically difficult. The rapid eye movement can make it very challenging to measure the surface of an eye with most devices. In particular any device that uses scanning or multiple images to measure the ocular surface will find it near impossible to produce accurate and repeatable measurements.

Profilometry Measurement

The Eye surface Profiler (ESP) was used to take measurements (Eaglet Eye, The Netherlands). This corneo-scleral profilometer gathers sagittal height data of the cornea and the sclera and creates a bi-sphere elevation map (see Figure 1). This map shows where the cornea and the sclera are more elevated or depressed. On this patient we see a high-toric eye “with the rule”, with a sagittal height difference of 350 microns at a 15mm chord length. A custom scleral lens MAXIM 3D (AccuLens, USA) was designed based on Profilometry data.

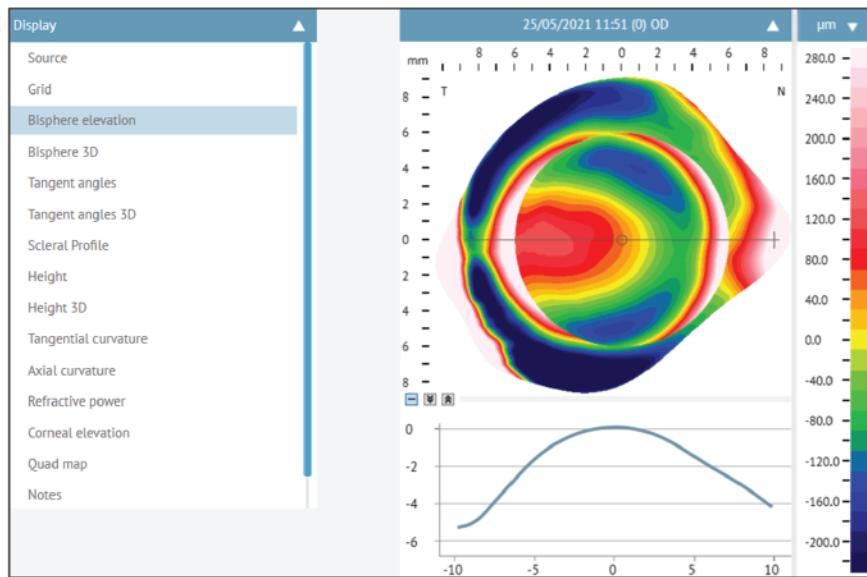


Figure 1

Final Lens Fit

The ESP *First Lens Fit* algorithms are a very accurate guideline to help practitioners: based on the Profilometry data they suggest the best fitting lens (see Figure 1), aiming for the first fitted lens to be the final lens.

For this patient, the initial MAXIM 3D lenses dispensed were the final lenses:

OD: BC 7.85 | SAG 4.42 | Dia. 15.9mm | OR +0.50 | V/A 6/9

OS: BC 7.50 | SAG 4.73 | Dia. 15.9mm | OR 0.0 | V/A 6/6 N8



Conclusion

The fast, single shot measurement process of the ESP allows for good measurements even on patients with nystagmus. As a result, the scleral lens approach for this patient was the best approach. The patient is comfortable with the lenses and vision they are giving her. This has improved her quality of life, and should give her comfortable wear for years to come.