

Small Diameter Lenses Improve Congenital Jerk Nystagmus

Stacy Zubkousky OD, FAAO, FSLS, Sydney Lin OD, Lia Vinciguerra OSP
Nova Southeastern University College of Optometry, Fort Lauderdale, Florida

Purpose

This case report details a patient with congenital jerk nystagmus with complaints of blurred vision with habitual spectacle lenses. The patient suffered from reduced visual comfort until being fit with small diameter scleral lenses.

Background

A 48-year-old Hispanic female presented for a contact lens evaluation. The patient had complaints of reduced visual acuity in spectacles and reported being visually disturbed by edge of her glasses. She also complained of the cosmetic appearance of her nystagmus and was interested in options to reduce the frequency if possible. The patient had a history of congenital, horizontal jerk nystagmus that worsened with near convergence, but dampened with left head turn.

Exam Findings

Manifest Refraction OD	Manifest Refraction OS
-2.00 -0.75 x 180, Add: +1.50, VA: 20/20, NVA: 20/20	OS -1.50 -0.50 x 180, Add: +1.50, DVA: 20/20, NVA: 20/20

HVID	Keratometry	Frequency of Nystagmus
11.2 OD, OS	42.10/43.50 @089, 42.70/43.70@110	2.8 Hz

Contact Lens Diagnostic Fitting:

The patient was initially fit with 16.0 prolate scleral lens with a center thickness of 350 microns. After lens settling, the central clearance was approximately 250 microns in both the right and left eye. With toric haptics, the lenses appeared to be well-centered.

OD	+5.12	4100	10.0	16.0	LZ: -100	90 BST	BO XO 2
OS	+9.25	4200	10.0	16.0	LZ: -100	90 BST	BO XO2

Contact Lens Follow-Up:

Upon follow-up, however, the patient reported a new symptom: shadowing of fine print letters. Lens flexure was ruled out and a spherical cylindrical over-refraction did not improve symptoms.

The patient was then refit into a 14.8 scleral lens designed for normal corneas. The lens thickness was 280 microns and did not require back surface toricity for a well aligned fit. After lens settling, the central clearance was 150 microns in both eyes.

OD	-4.25-1.00 x090	3850	7.50	14.8	LZ: STD	STD	BO XO 2
OS	-3.50-1.25x075	3830	7.34	14.8	LZ: STD	STD	BO XO2

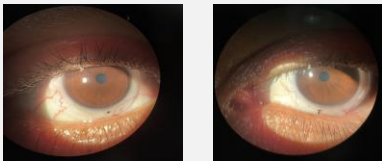


Figure 1: Anterior Segment Images of Scleral Lenses OU

Results:

This re-fit not only improved the patient's visual complaints of ghosting of letters, but the lenses reduced the frequency of the nystagmus from 2.8 Hz to 2.3 Hz. The patient continues to wear these scleral contact lenses successfully.

Discussion and Conclusion:

In patients with nystagmus, contact lenses can offer visual improvement and reduction of frequency of nystagmus. Contact lenses allow for the optical center to stay along the line of sight as the eye moves, and other theories suggest that the effect contact lenses have on the binocular system may play a role in the reduction of nystagmus frequency¹. In addition, it is theorized that rigid gas permeable material reduces the frequency of nystagmus by stimulating both tactile and proprioceptive sensory nerve endings of the trigeminal nerve in the cornea and conjunctiva.² However, there are a limited number of reports of utilizing scleral lenses for the treatment of nystagmus.

Scleral lenses combine crisp, gas permeable optics and have no movement compared to other lens alternatives, always keeping the optical center along the line of sight. Small diameter scleral lenses may play a role in treating congenital nystagmus if the patient has a normal cornea. Small diameter lenses are manufactured thinner and require less clearance, which often leads to higher visual quality. This case report supports utilizing scleral lenses for treating patients with nystagmus.

1. Allen ED, Davies PD. Role of contact lenses in the management of congenital nystagmus. Br J Ophthalmol. 1983;67(12):834-836.
2. Bagheri A, Abbasi H, Tavakoli M, Sheibanizadeh A, Kheiri B, Yazdani S. Effect of Rigid Gas Permeable Contact Lenses on Nystagmus and Visual Function in Hyperopic Patients with Infantile Nystagmus Syndrome. Strabismus. 2017;25(1):17-22. doi:10.1080/09273972.2016.1276939