

Acquired CNIII Ptosis to Iatrogenic Exposure Keratopathy: Management with a Scleral Lens

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INTRODUCTION

Cranial nerve III (CNIII) palsies may require frontalis sling surgery to correct for ptosis and can induce iatrogenic exposure keratopathy.<sup>1,2</sup> Scleral contact lenses (ScCL) may be utilized as part of the long-term management strategy to limit symptomology, corneal desiccation, and the propensity for corneal ulceration, scarring, perforation, and vision loss.<sup>2</sup>

CASE BACKGROUND

Case History

55-year-old Asian female presented for complaints of dryness in the right eye worsening by end of day:

- Referred by corneal specialist for ScCL evaluation
- Failed Therapy: artificial tears QID, erythromycin ointment QHS, olopatadine PRN

Medical / Ocular History:

1997	Ruptured basilar tip aneurysm and right middle cerebral artery aneurysm s/p clipping x2
2002	LASIK OD/OS
2021	Diplopia induced by stressful life events
2022	RLR & RIR recession (01/2022) RLR disinsertion and amputation; RSO resection and transposition (04/2022) Silicone Frontalis sling, OD (10/2022)

Medications:

Adderall XR, amlodipine, erythromycin ointment, fenofibrate, levocetizirine, lovastatin, metoprolol succinate, olopatadine, trazodone, Systane, Xanax

Previous Pertinent Findings:

Cover Test (sc): 2 RET, 8 RHypoT; 9 RET', 6 RHT' (6/21/22)  
External: RE fissure 9 mm w/ brow, 3 mm rest (1/24/23)

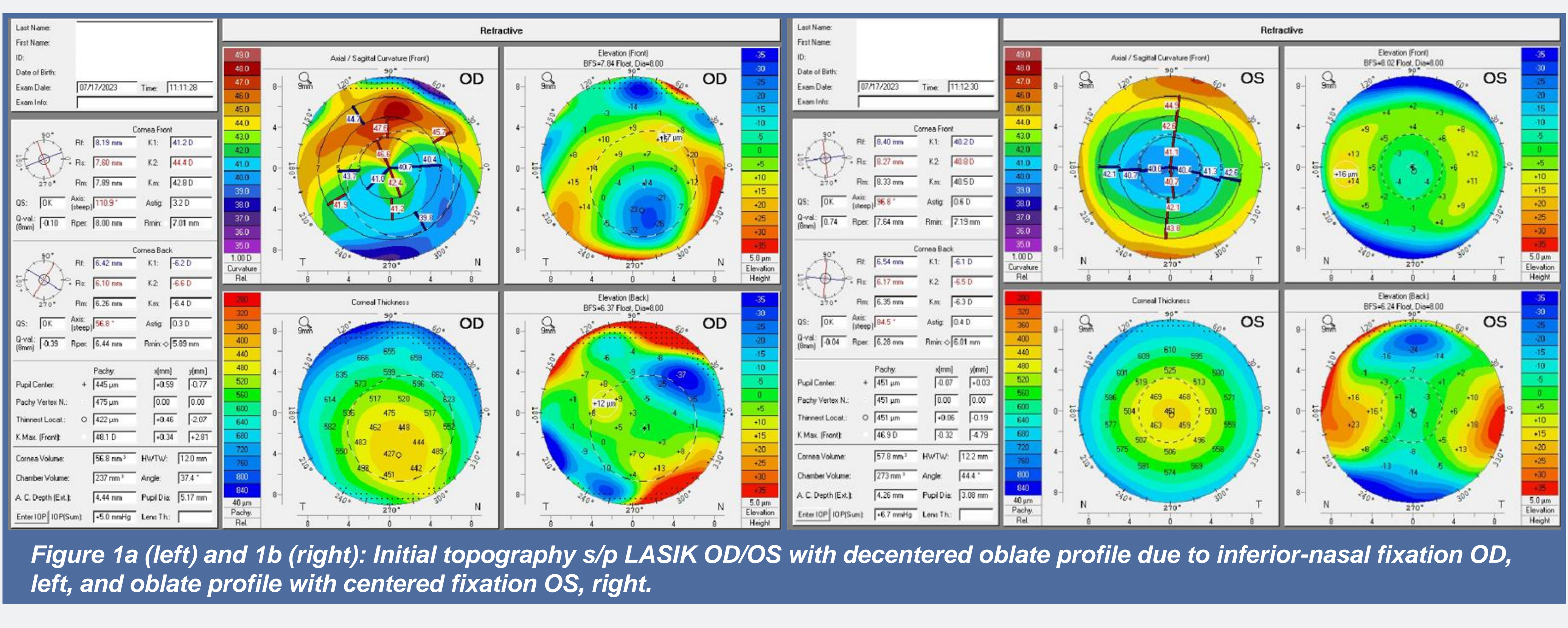
Pertinent Findings

Entering Acuity		
	OD	OS
w/o correction	20/40 +2 (20/20 -2 PH)	20/20
Anterior Segment		
	OD	OS
Lids/Lashes	ptosis	normal
Conj/Scleral	white/quiet	white/quiet
Cornea	3+ NaFl coalesced > inf 1/3	1-2+ NaFl punctate > nasal and inf
Lens	1+ NS, trace CC	1+ NS

Imaging

Topography (See Figures 1a and 1b)

TOPOGRAPHY

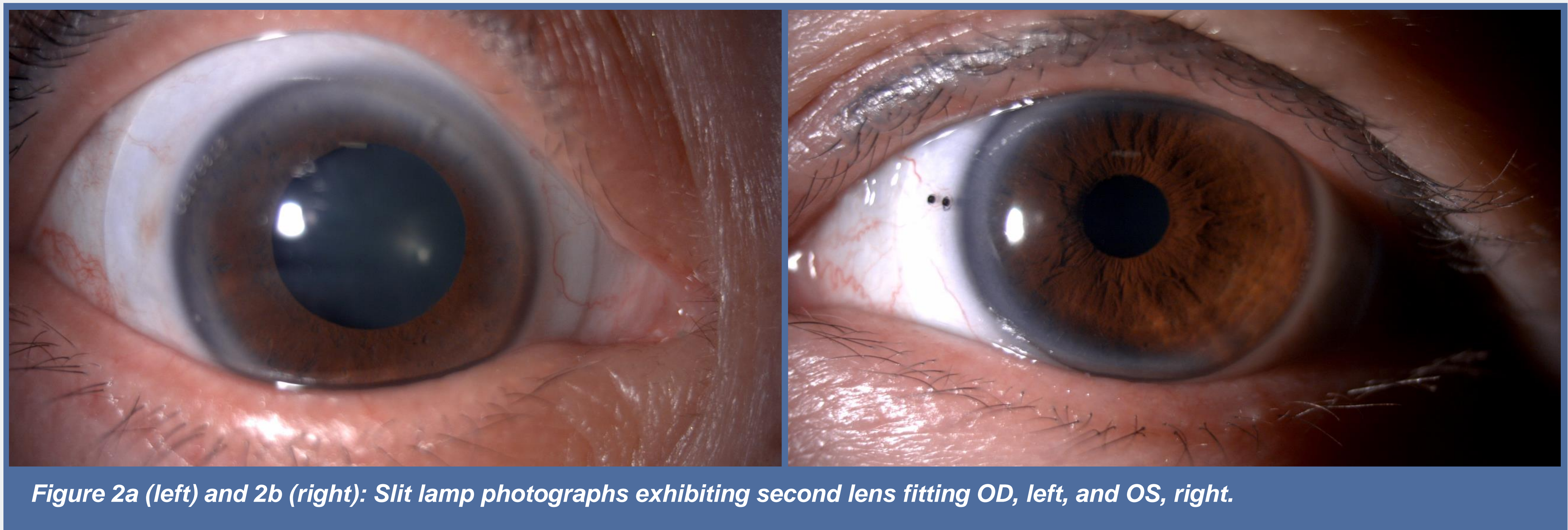


LENS PARAMETERS & ASSESSMENT

Scleral Lens, 2 <sup>nd</sup> Set, OD/OS							
	Diameter	Base Curve	Sphere	Cylinder	Sagittal Height	Limbal Zone	Scleral Zone
Right	17.0 - Prolate	7.3	-6.25	DS	5450	+150	APS: F4 / S3
Left	17.0 - Oblate	9.1	+2.75	DS	5350	-	APS: F4 / S3

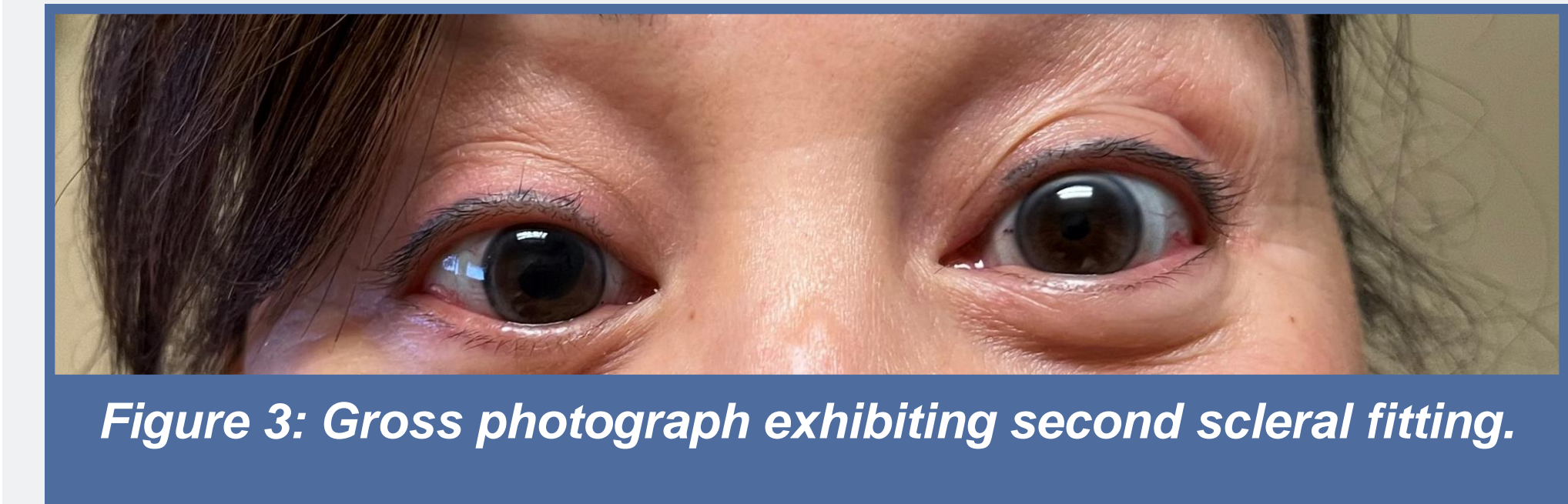
Scleral Lens, 2 <sup>nd</sup> Set, OD/OS						
	Central	Mid-Peripheral	Limbal	Edge	Centration	Over-Rx
Right	400	400 inferior 100 nasal	Min. Nasal	Lift temp	Inf/Temp	+0.25 DS 20/25+2
Left	200	200	Adequate	Aligned	Inferior	-0.25 DS 20/20

OD: steepened APS 360 (F3 / S4), added plasma treatment, incorporated over-Rx; new lens ordered 11/2/23  
OS: lens finalized at visit; dispensed 11/2/23



MANAGEMENT STRATEGY

- Acute and long-term lagophthalmos management with copious preservative-free artificial tears and antibiotic ointment nightly.<sup>2</sup>
- Daytime wear ScCL to limit exposure keratopathy and improve vision 2° to ocular surface disease.<sup>3</sup>
- Discussed hand hygiene, contact lens care with approved cleaning systems, and return to care instructions.<sup>4</sup>



DISCUSSION

- Frontalis sling surgery with silicone rod demonstrates improved elasticity for better lid closure to limit post-surgical corneal complications.<sup>5</sup>
- CNIII paresis may limit Bell's phenomenon as protective mechanism leading to desiccation.<sup>5</sup>
- Acute and long-term management for lagophthalmos includes topical medical therapy.<sup>2,3</sup>
- Long-term management may also include ScCL, lid taping, moisture goggles, and tarsorrhaphy.<sup>2,3</sup>

CONCLUSIONS

Exposure keratopathy secondary to CNIII palsy and ptosis repair requires a suitable long-term management plan that may include scleral lenses to mitigate corneal ulceration, scarring, perforation, and vision loss.

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