

Edema Alert: Scleral Lens Precautions in a Previously Aphakic Eye

Rebecca Chung, OD, FAAO, FSLS
Salem, OR

EYE CARE
physicians & surgeons

INTRODUCTION

Aphakia is the absence of the crystalline lens in the eye as a result of surgery, trauma or congenital causes. Aphakic complications can affect visual prognosis and physiologic compatibility with a scleral lens. This case describes the diagnosis and treatment of recurrent cystoid macular edema and bullous keratopathy encountered at various stages of a scleral lens fit in a patient with recent secondary IOL placement after decades of uncorrected traumatic aphakia.¹

BACKGROUND

Chief Complaint: a 55 year old Caucasian male was referred in August 2021 for a medically necessary contact lens evaluation OS due to visually significant anisometropia s/p secondary IOL implantation.

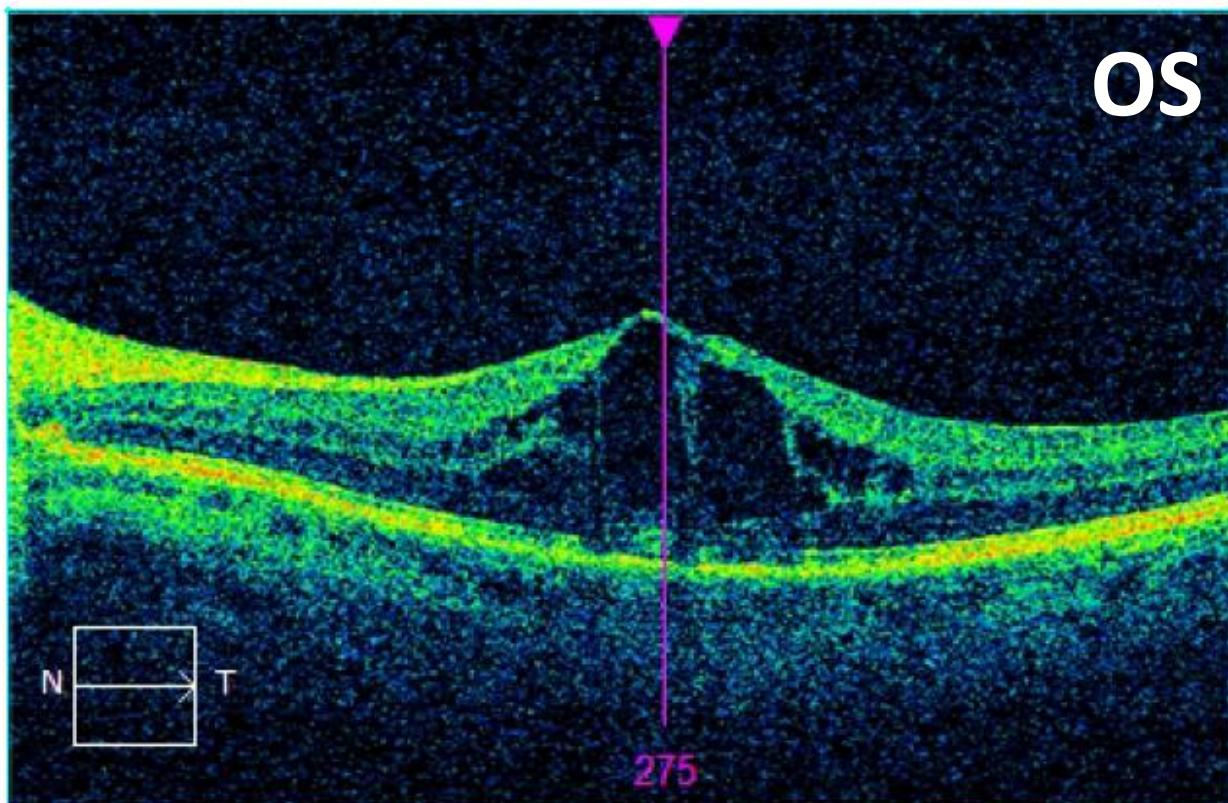
Ocular History: perforating injury with traumatic cataract removal OS s/p MVA in 1988, large angle sensory LXT, **post-operative CME s/p scleral fixated IOL/synechial removal/PPV** in March 2021.

Medical History: GERD, former smoker
Medications: tadalafil, pantoprazole sodium

MEDICAL CL CONSULT #1

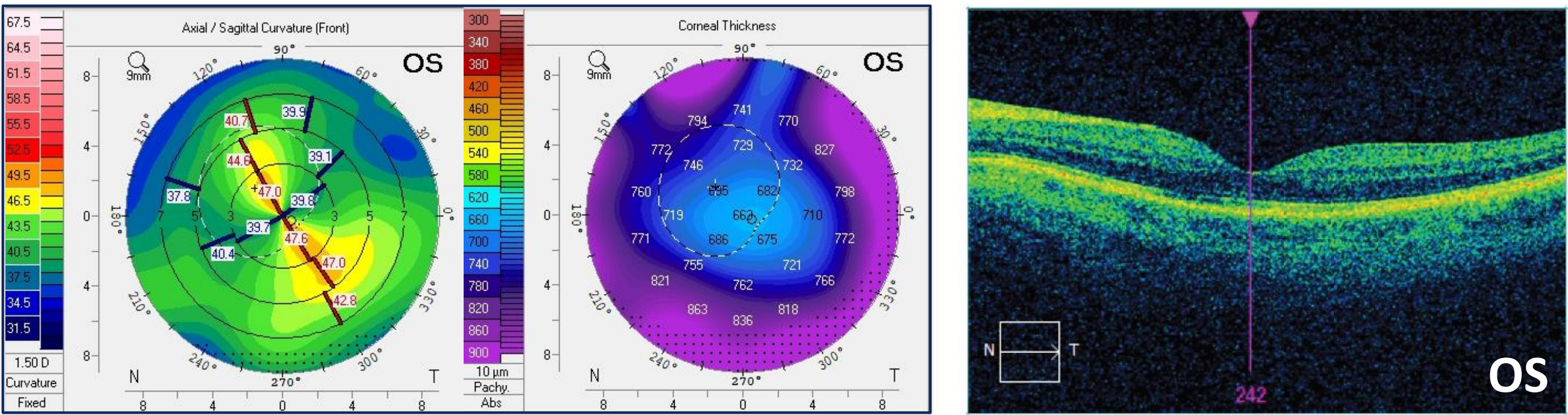
Pertinent Findings	Left Eye
VA sc	20/400, PH 20/80
EOM	50 PD sensory LXT, no restriction
Cornea	Superior full thickness scar, superficial nasal NV, 2+ diffuse stromal edema with mild inferior microcystic edema, scattered inferior endothelial pigment, diffuse PEE
Iris	Peaked and fixed pupil, loss of iris tissue at 11:00, temporal TIDs

- BSCVA had dropped to **20/200** from **20/80 OS** with his surgeon 2 months prior when he was tapered off treatment for post-op CME.
- No VA improvement OS with scleral lens over-refraction.
- Macular OCT OS: recurrent CME.
- Treatment: pt was restarted on prednisolone acetate 1% QID OS, bromfenac BID OS.



MEDICAL CL CONSULT #2

- 1 MONTH LATER:**
Manifest refraction OS: +0.50 -6.50 x034, VA 20/80
Pentacam corneal tomography OS (left):
 - 7.7D limbus-to-limbus, oblique corneal astigmatism
 - diffuse stromal edema with mild inferior MCEMacular OCT OS (right): normal foveal contour, fully resolved CME.



MANAGEMENT

- Scleral lens OS was recommended due to the degree and pattern of his corneal astigmatism.²
- Toric peripheral curves OS were added to optimize lens centration and haptic alignment.
- In consult with his surgeon, he was advised to taper PA 1% to BID OS, bromfenac to QD OS x 1 month then discontinue all drops.
- BCVA in final scleral lens: 20/50+ OS**
- Fit evaluation: 250 central clearance, good alignment 360, no MOB, adequate limbal clearance nasal>temp, good comfort.

Eye	BC	Power	CCZ	LCZ	SLZ	Material	Tint
OS	7.76	-3.00	STD	-2 lite	-3/-4	Optimum Infinite	Green
Lens Design & Diameter: Custom Stable Elite Oblate, 14.8 mm Manufacturer: Valley Contax, Springfield, OR							

- His right eye was fit with a multifocal soft CL to reduce his dependence on glasses. However, this pt was non-compliant with CL handling instructions and had to be counselled repeatedly on A&R precautions and appropriate lens care for each modality.
- Due to the pt's desire for improved binocular vision and ability to sight his scleral lens during A&R, he was also referred to an adult strabismus surgeon for surgical correction of his sensory LXT.
- Unilateral lateral rectus recession & medial rectus resection OS with adjustable sutures was performed in Fall 2022.

FOLLOW-UP

- At 6 month follow-up: BCVA remained stable at 20/50+ OS. However, more corneal edema with **inferior epithelial bullae** were noted.
- Optic section through scleral lens

Cobalt blue filter with NaFl

Anterior segment OCT
- Upon further questioning, pt admitted he often forcibly removed the lens by applying the plunger at the center, rather than the bottom edge as previously instructed.
 - Proper A&R and handling technique were reviewed at length.
 - Treatment: pt was advised to discontinue scleral lens wear and start 5% sodium chloride drops QID and ointment QHS OS.
 - At 3 month follow-up: the bullae OS had significantly flattened. Scleral lens wear was reinitiated after this visit without incident.

CONCLUSIONS

- Traumatic injury, complex intraocular surgery and aphakia are pro-inflammatory risk factors that can predispose the eye to short and long-term complications including, refractory corneal edema, bullous keratopathy and cystoid macular edema. These should be actively evaluated for in a medical contact lens consult, with priority given to managing these conditions first whenever possible.
- Astute monitoring of the anterior and posterior segment at all stages of a scleral lens fit, with abundant patient education, are critical for at-risk patients to ensure an effective and healthy fit is maintained. Judicious prescribing and frequent monitoring are recommended particularly in patients with a demonstrated history of non-compliance to medical advice and safe CL handling protocols.³

REFERENCES

- Hahn, TW et al. (1992). Secondary intraocular lens implantation in aphakia. *J Cataract Refract Surg*, 18(2), 174-179.
- Alipur, F, Hosseini, SS. (2016). Visual management of aphakia with concomitant severe corneal irregularity by mini-scleral lens design contact lenses. *J Current Ophthalmol*, 28(1), 27-31.
- Fadel, D, Kramer, E. (2019). Potential contraindications to scleral lens wear. *Cont Lens Anterior Eye*, 42(1), 92-103.

ACKNOWLEDGEMENTS

The author has no financial interest in any of the products referenced in this case, nor was the author supported by any company referenced in this presentation.