

Piggybacks Are Not Extinct

Non-surgical Management of Multiple Ocular Complexities Post-Globe Rupture

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Introduction

Ocular trauma accounts for one third of all eye-related emergency visits in the U.S. annually. Many cases lead to vision impairment, significantly impacting the quality of life for those affected.¹ Open globe injuries are generally accompanied by complications such as irregular astigmatism due to corneal scarring, loss of accommodative function from surgical aphakia, and traumatic iris function.² Contact lenses can play a critical role in determining visual potential and visual rehabilitation following trauma.¹ This poster illustrates how a unique piggyback method with a prosthetic iris contact lens and scleral lens is utilized to improve outcomes in a post-globe rupture case when further surgical intervention is deemed too risky.

Case History

Purpose of Visit:

A 58-year old male presents on Oct 17, 2022 reporting moderate light sensitivity in the left eye while wearing his habitual scleral lens

Ocular & Surgical History:

Globe rupture OS with complex surgical history and multiple sequelae

Date	Event	Visual Acuity
Mar-08 2021	Ruptured globe with wood foreign body, HM sc corneoscleral laceration, iris trauma, hyphema and lens dislocation	
Mar-09 2021	Corneoscleral laceration repair	
Apr-07 2021	Traumatic vitreous hemorrhage	CF @ 2 ft sc
Apr-19 2021	Pars plana vitrectomy	
Aug-11 2021	Cystoid macular edema	20/200 PH sc
Sep-8 2021	Cystoid macula edema resolved	20/40 PH sc
Nov-30 2021	Scleral-fixated IOL implant	20/300 sc
Jan-12 2022	Scleral lens fitting	20/40 c scleral
Oct-17 2022 (present)	Reporting blurred vision & light sensitivity with scleral lens	

Examination Findings

Left Eye	
VA	20/30 c scleral lens
Conjunctiva	Inferotemporal sutures
Cornea	Central horizontal scar with NV Diffuse corneal edema
Iris	Absence of inferior iris
Lens	Scleral-fixated PCIOL

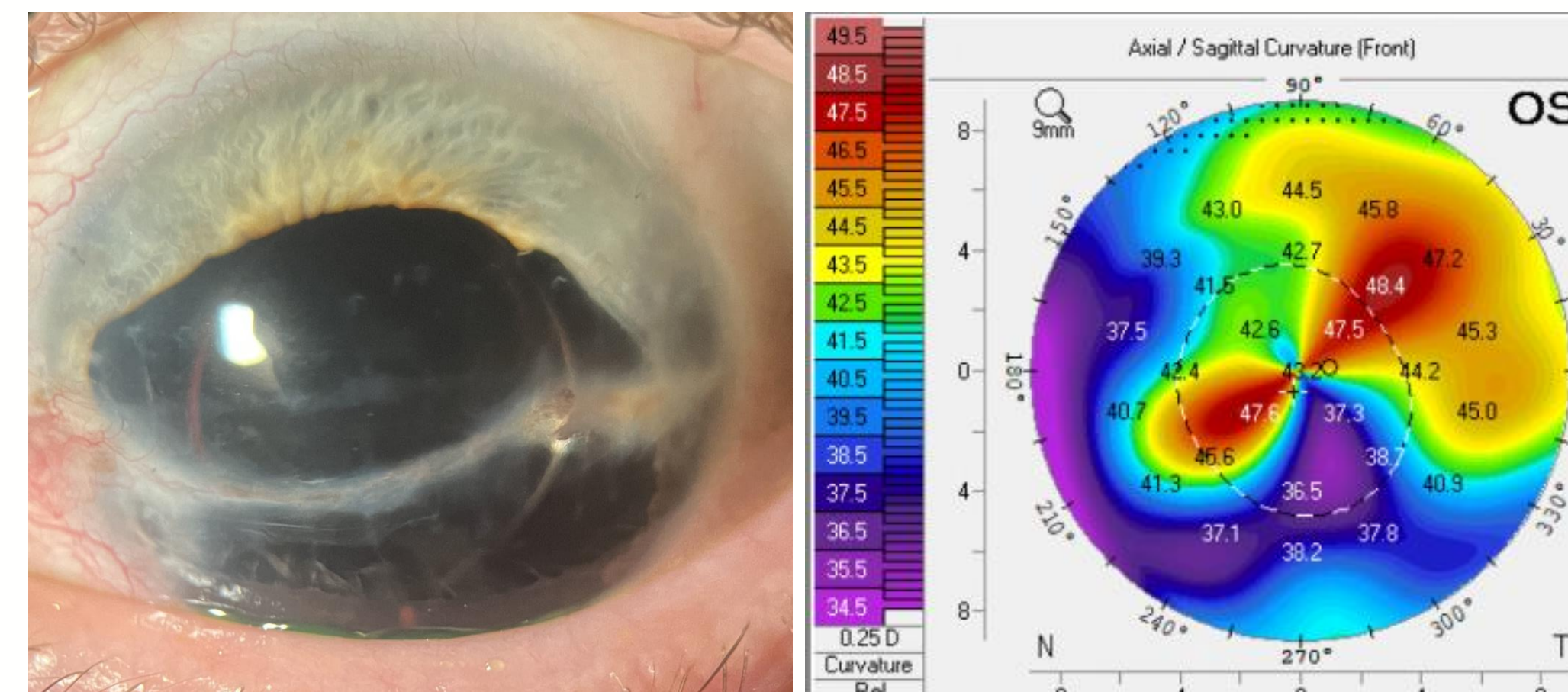
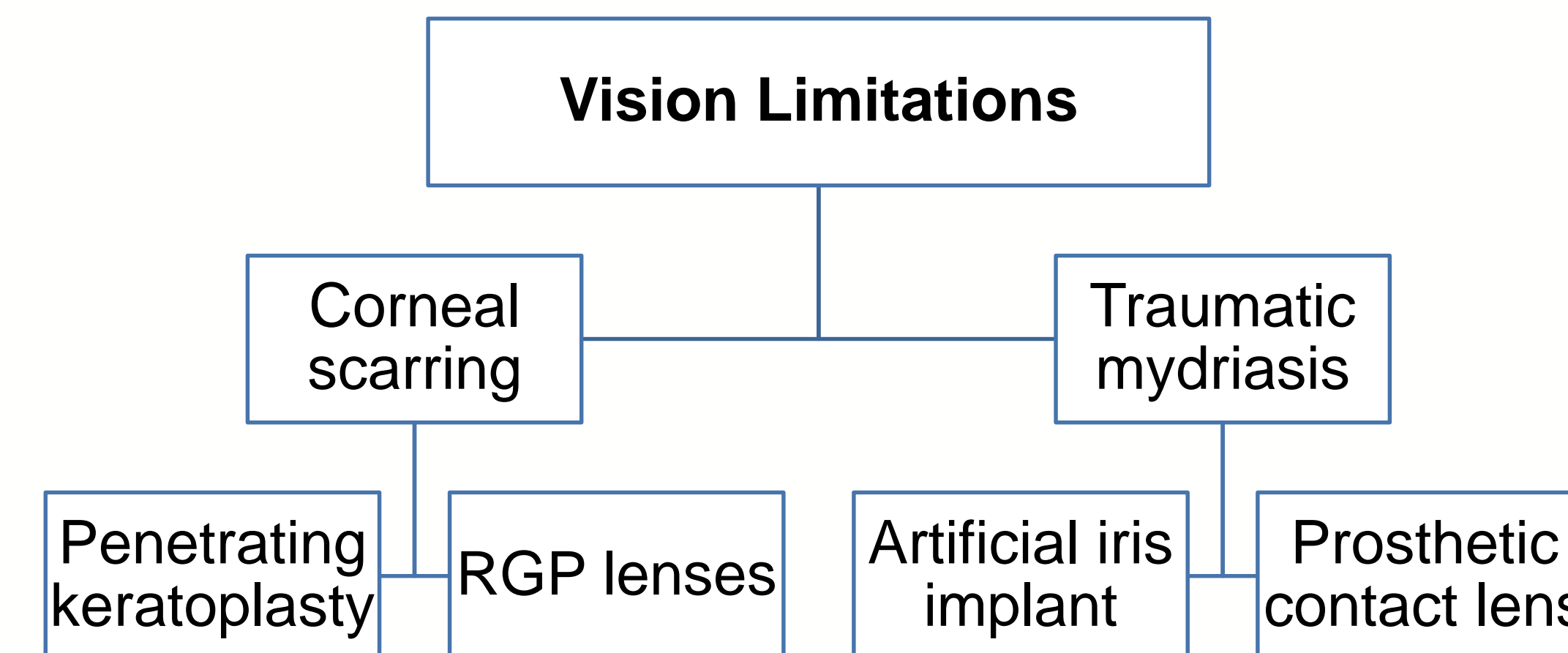


Figure 1. Patient's left eye highlighting the corneal scar and absent inferior iris.

Figure 2. Pentacam axial map of the patient's left eye revealing 8D of irregular corneal astigmatism.

Treatment Considerations



Surgical vs Non-Surgical Considerations

Given the patient's prior trauma and complex surgical history, non-surgical treatment with contact lenses was preferred to minimize risks & complications.

Case Management

Prosthetic Iris Contact Lens Fitting

- A prosthetic contact lens with custom parameters (Orion Vision Group, Marietta, GA) was fit to reduce photophobia by decreasing pupil size.
- VA improved to 20/30 with his prosthetic lens alone, but patient reported distorted central vision due to his irregular astigmatism.

Prosthetic & Scleral Lens Piggyback

- A novel method of piggybacking the patient's habitual CS Elite scleral lens (Valley Contax, Eugene, OR) over the prosthetic lens was utilized to improve visual outcomes, by reducing photophobia and masking irregular astigmatism.
- Lenses were approved for limited wear to reduce risks of hypoxia.

Outcomes

- VA improved to 20/20, and the patient was pleased with the comfort and vision.
- No adverse effects were found at follow-ups.
- Corneal health check planned every 4 months.

Conclusion

Non-surgical options should always be considered in patients that have experienced significant trauma and surgery. Contact lenses have demonstrated to be great non-invasive options that can provide significant vision rehabilitation.¹ A scleral-prosthetic piggyback system is a unique fitting method to improve outcomes that involve multiple vision-limiting factors (i.e. corneal scarring and iris trauma).³ When piggybacking lenses, it is essential to consider compromised oxygen transmissibility and monitor these cases carefully.



Figure 3. The patient wearing the custom prosthetic lens OS.

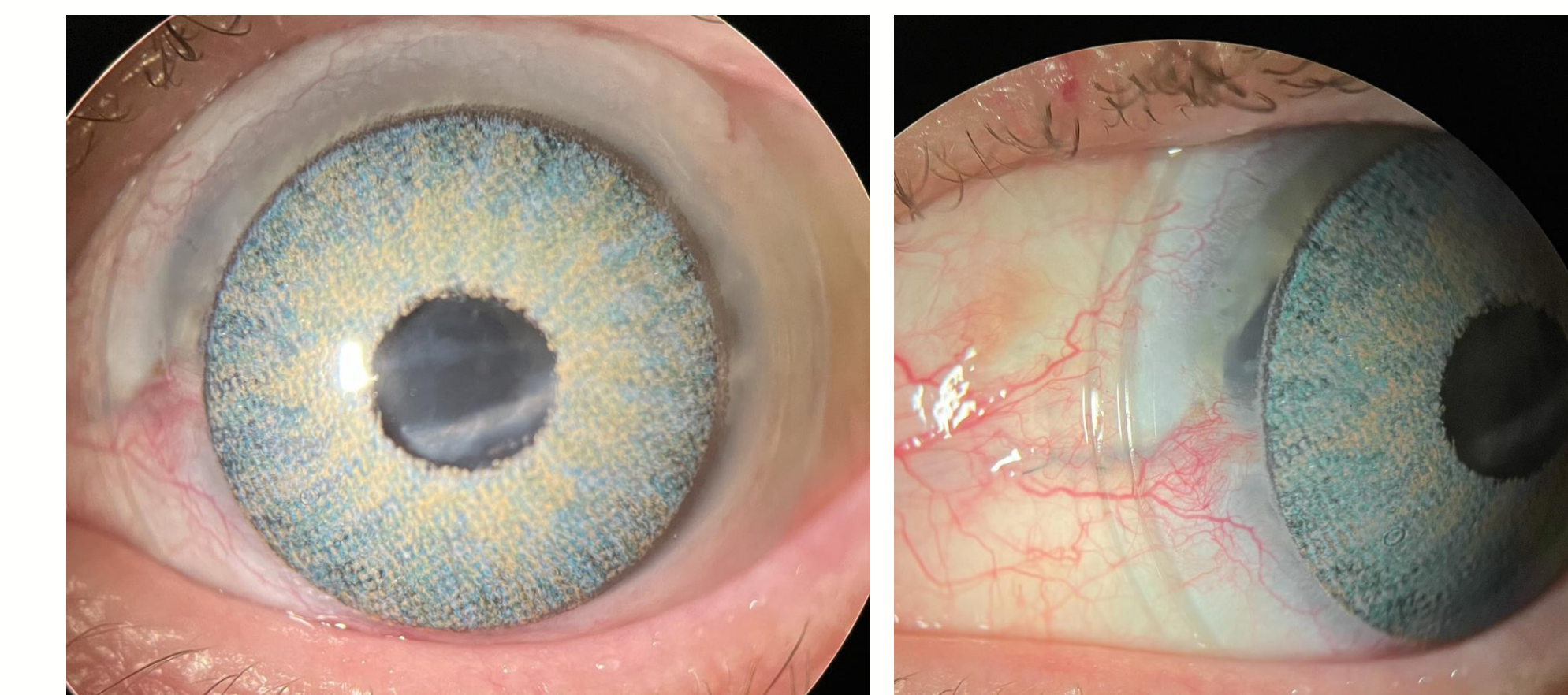


Figure 4. The scleral lens piggybacked over the prosthetic soft lens in primary and left gaze. Edges are both well aligned.

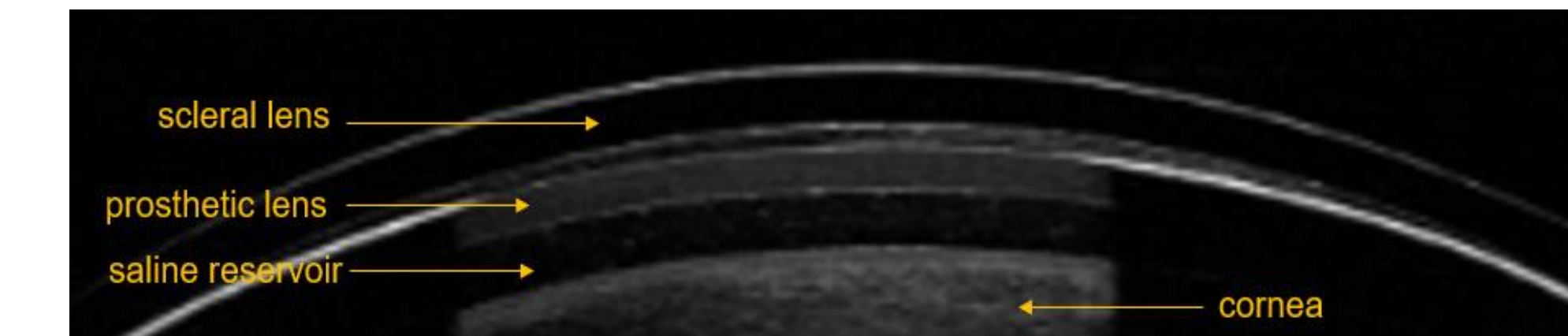


Figure 5. AS-OCT cross section of the piggybacked lenses.

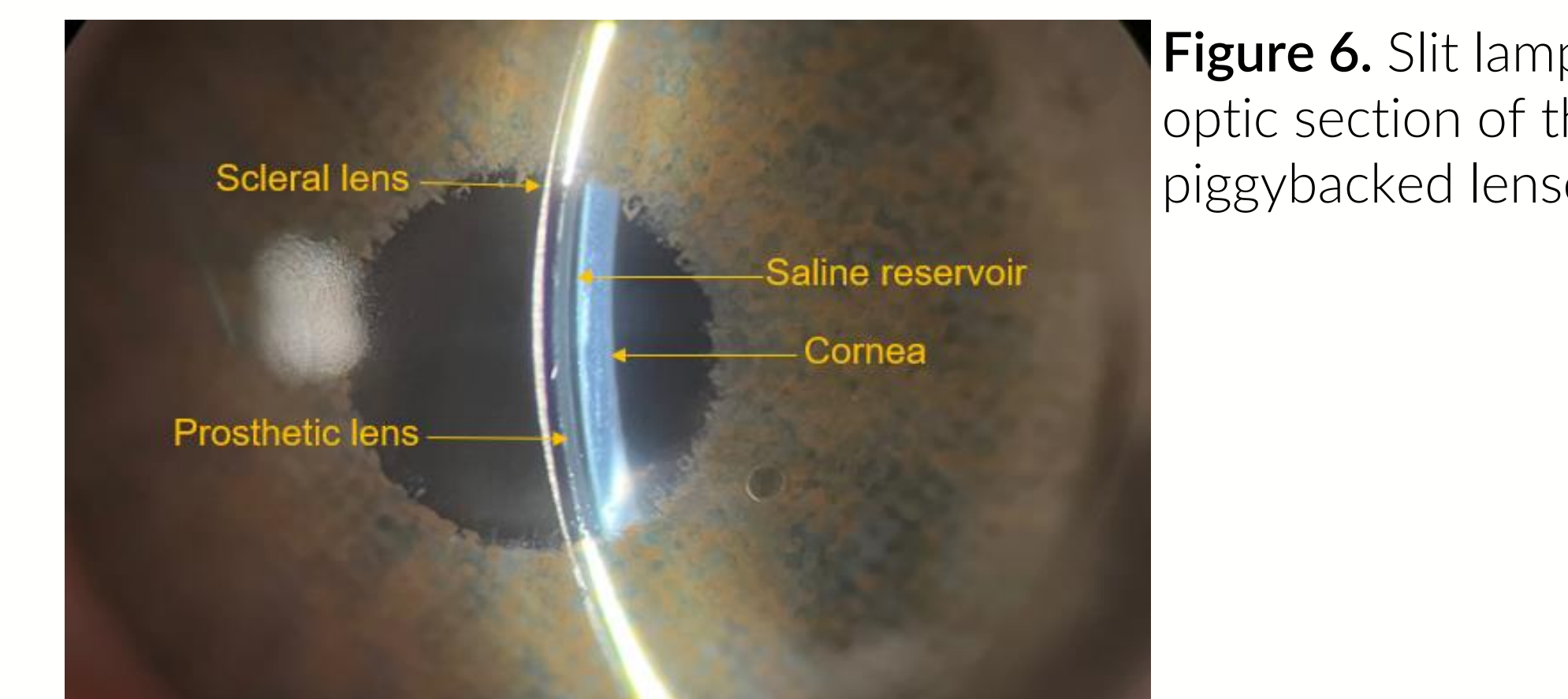


Figure 6. Slit lamp optic section of the piggybacked lenses.

References

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