

Contact Lens Challenges for Microcornea with a Glaucoma Drainage Device

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Introduction

- Microcornea is a rare corneal condition characterized by a horizontal visible iris diameter (HVID) of less than 10 mm.¹
- It has been associated with high refractive errors.²
- Secondary open-angle glaucoma may result, thought to be from early angle dysplasia, and may require glaucoma surgery.³
- Pressure or rubbing from scleral contact lenses (CL) haptic zones over glaucoma drainage valves may elevate intraocular pressure and lead to complications.⁴
- There is little mention of prescribing CL for microcornea in the literature.

Case Details

A 57 year-old Asian male was referred to the clinic for a consult for a scleral CL OD. He had a corneal transplant OS and was happy with his vision with spectacles in that eye. He had worn a small diameter corneal rigid gas permeable contact lenses (GP) OD but reported frequently losing lenses from that eye and wanted a more stable option.

Pertinent Ocular Hx: HSK OD (2017), **microcornea** OD/OS

Surgical Hx: Cataract surgery OD/OS
s/p LPI OD
Laser trabeculoplasty

Multiple glaucoma sx: **Express shunt and Baerveldt implant** OD

Medication: Acyclovir 800 mg QD, rosuvastatin, metoprolol, blood glucose, Durezol BID OU

Allergies: ACE inhibitors, Timolol, Iohexol, adhesive sensitivity



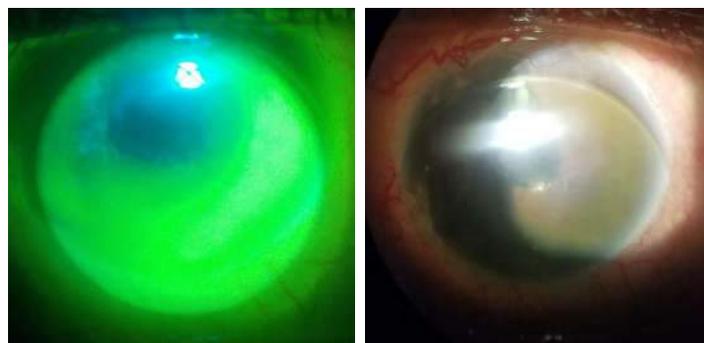
Images taken with patient's permission.

Exam Findings

CC (spectacles) OD -7.75-1.25 x 175 20/300 PHNI
OS +2.00-3.25 x 045 20/40+2

Slit lamp findings

	OD	OS
Conj.	3+ bulbar injection, Baerveldt valve implant sup-temp ~2 mm from limbus	3+ bulbar injection, Baerveldt valve implant sup-temp
AC	Tube present	ACIOL, tube
Iris	Irregular 2' Sx, HVID 8.5 mm	Inferior located pupil 2' Sx
Lens	PCIOL	
Cornea	Anterior stromal opacity and pannus superior, neovascularization, 2+ guttae, Microcornea	s/p DSAEK, microcornea



Images taken at 1 week follow-up

References

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Treatment and Management

Lens #1: Diagnostic 13.5 mm Essilor Semi-scleral CL

- Findings: decentered inferiorly and the peripheral edges were not aligned.
- Plan: Toric peripheries were not available with this semi-scleral design, so a 13.5 mm Jupiter scleral contact lens was created.

Lens #2: Jupiter Scleral CL (BC 7.8, OAD 13.5, Power -6.50)

- VA 20/40-
- Findings: 3-4 mm inferior decentration, excessive clearance (450 microns central, 900 microns inferior), inferior impingement. With centered CL, compression on the elevated portion of drainage device
- Plan: discussed with lab to decrease CL diameter, but Jupiter scleral CL was not originally designed in those parameters.

Lens #3: Rose K2 post-surgical GP (BC 8.91, OAD 10.0 mm, Power +0.25 DS)

- VA 20/50+
- Findings: 2 mm inferior decentration, 1.5 mm central touch, low edge lift, minimal movement.
- Plan: Dispense CL, RTC x 1 week for follow-up

Results

1 week Follow-up

- VA 20/50
- Findings: Similar to details at CL dispense. Patient reported stable vision.
- Intraocular pressures measured 12 mmHg OD, 11 mmHg OS
- Patient reported CL did not "pop off" of eye like previous GP.
- Plan: RTC x 1 month for follow-up.

Conclusions

- Microcornea patients have a rare abnormality presenting with a variety of corneal sizes in addition to corneal and conjunctival irregularities from possible surgical intervention to address associated conditions.
- Multiple trial contact lenses may be required to provide a suitable fit. Small diameter scleral CLs may also be a viable option if they properly navigate irregularities without sequelae.
- Customizing corneal GP parameters and design produced a successful outcome.