



Southern California College of Optometry

Introduction

- Conjunctival prolapse is a possible complication of scleral lens wear, where perilimbal conjunctiva is drawn up underneath a scleral lens due to negative pressure created by the lens¹
- The conjunctiva may eventually adhere to the peripheral cornea over the limbus and cause neovascularization and scarring, particularly in areas of relative corneal depression²
- Traditional methods of troubleshooting conjunctival prolapse include:
- Decreasing the amount of suction created by the lens
 - Decrease the corneal vault
 - Minimize limbal clearance
 - Ensure proper scleral alignment to avoid inferior decentration
 - Decrease the overall diameter
- Enforcing proper application technique of the lens
- However, in the event these methods cannot be employed, different management options must be considered to preserve ocular health

Case

- GJ is a 54 year old male with a history of pellucid marginal degeneration (PMD) OD>>OS
- Habitual corneal rigid gas permeable (RGP) lens wearer, but complaining of frequent lens ejection OD and was thus fit in scleral lenses OU
- Due to the severity of the corneal ectasia in the right eye, a large vault was necessary to clear the steepest part of the cornea, resulting in excessive superior clearance

Pertinent Clinical Findings

	OD
ScCL VA	20/20
Scleral fit	Minimal clearance over cone, limbal clearance 360, mild heel blanching nasal and temporal
Corneal findings	Significant steepening of inferior cornea, neovascular vessels inferiorly from 3 to 9 o'clock extending 1.5mm beyond prolapse

Management of Severe Conjunctival Prolapse in Scleral Contact Lens Patients Jocelyn Ou, OD Elaine Chen, OD

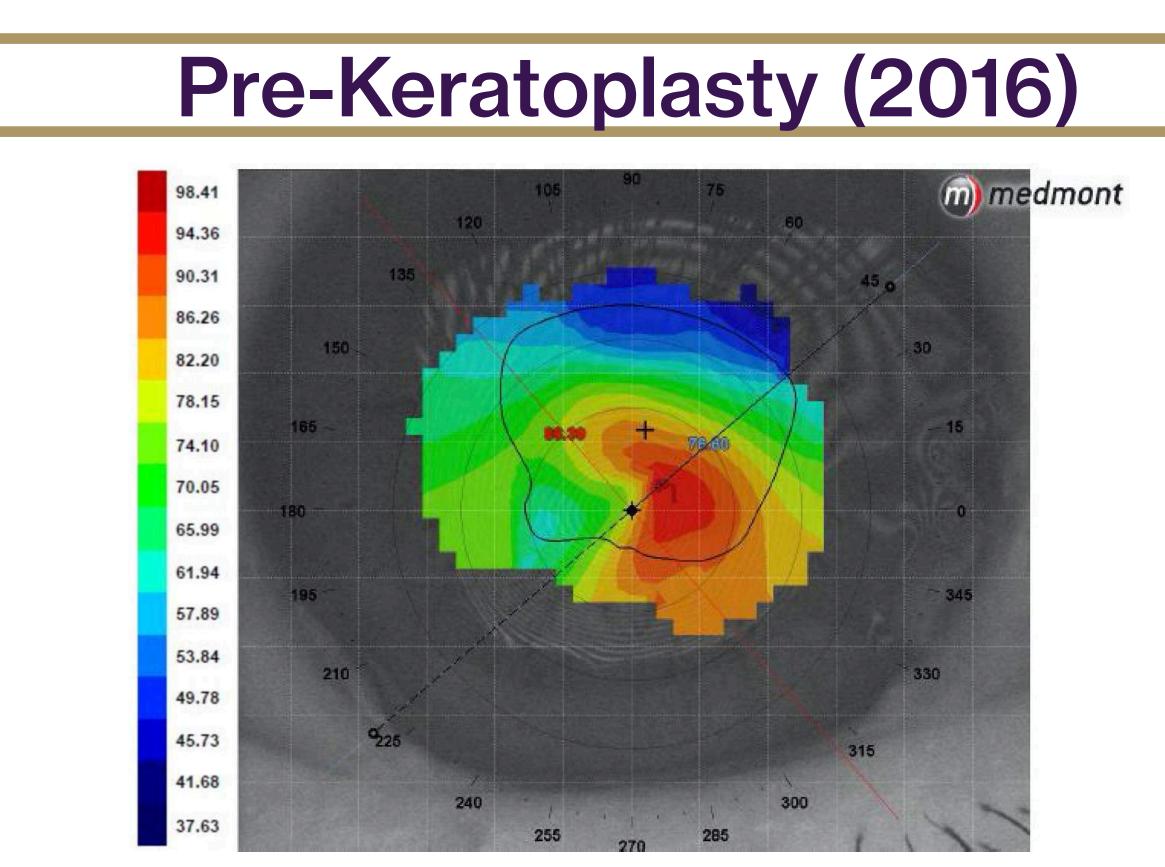


Fig 1a. Corneal topography of the right eye. SimK: 76.60 / 86.39 @131. Image quality was limited by the severity of the inferior irregularity

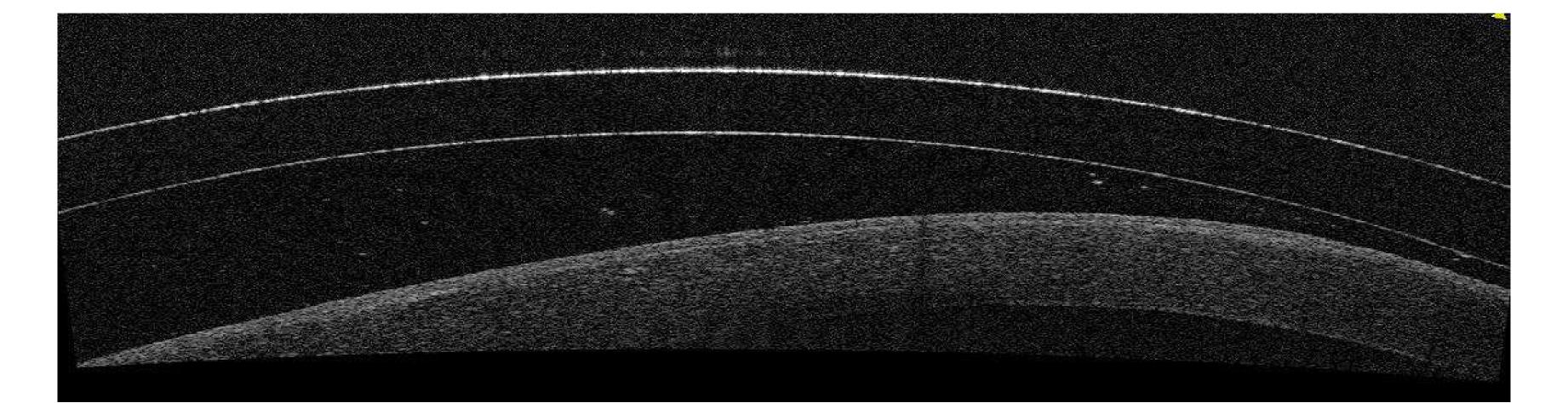


Fig 2a. A representation of the best possible scleral lens fit achievable. Excessive superior clearance is noted to the left of the image, with minimal clearance inferiorly. (Lens CT: 350 microns)

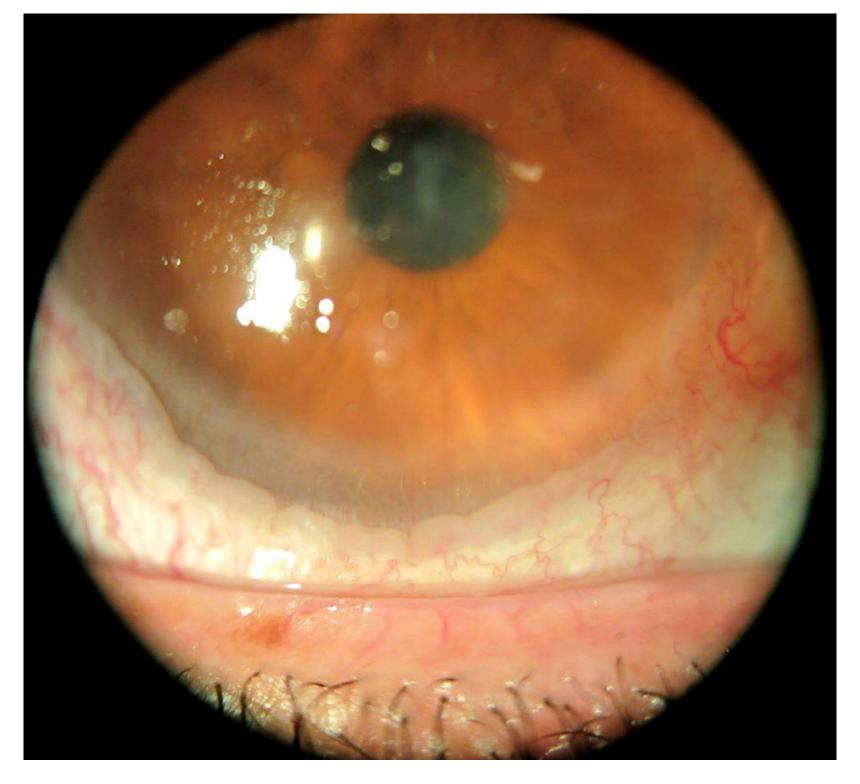


Fig 3a. With the scleral lenses, extreme conjunctival prolapse with underlying neovascularization Fig 3b. Significant improvement in prolapse – limited to 2 clock hours and the remaining conjunctival tissue is not adhered to the cornea. is present in all inferior quadrants.

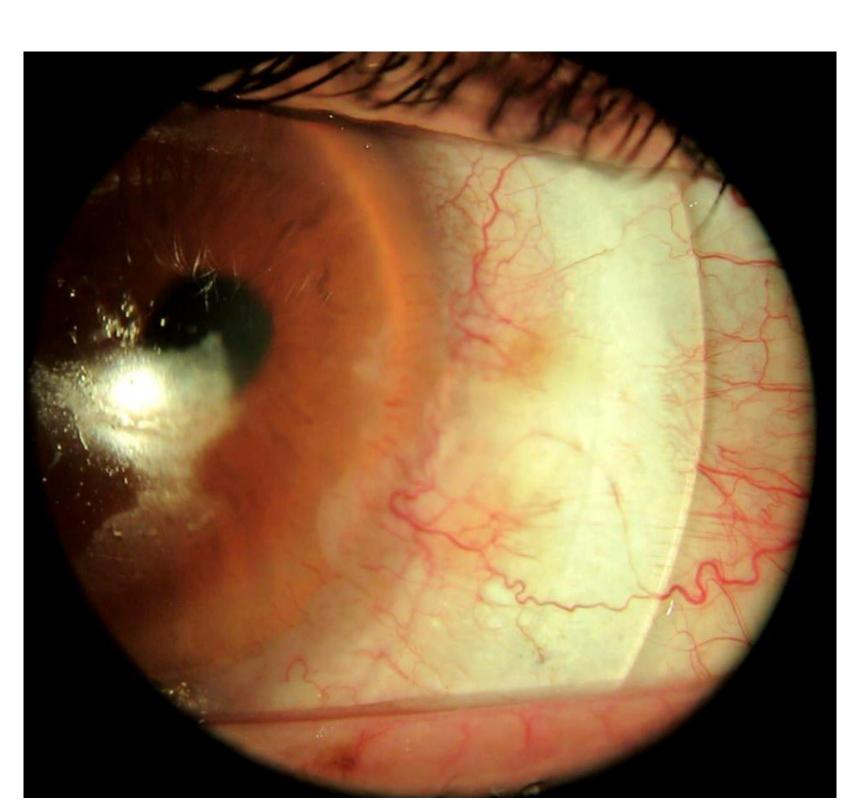


Fig 4a. Extreme nasal corneal neovascularization developed secondary to prolapse.

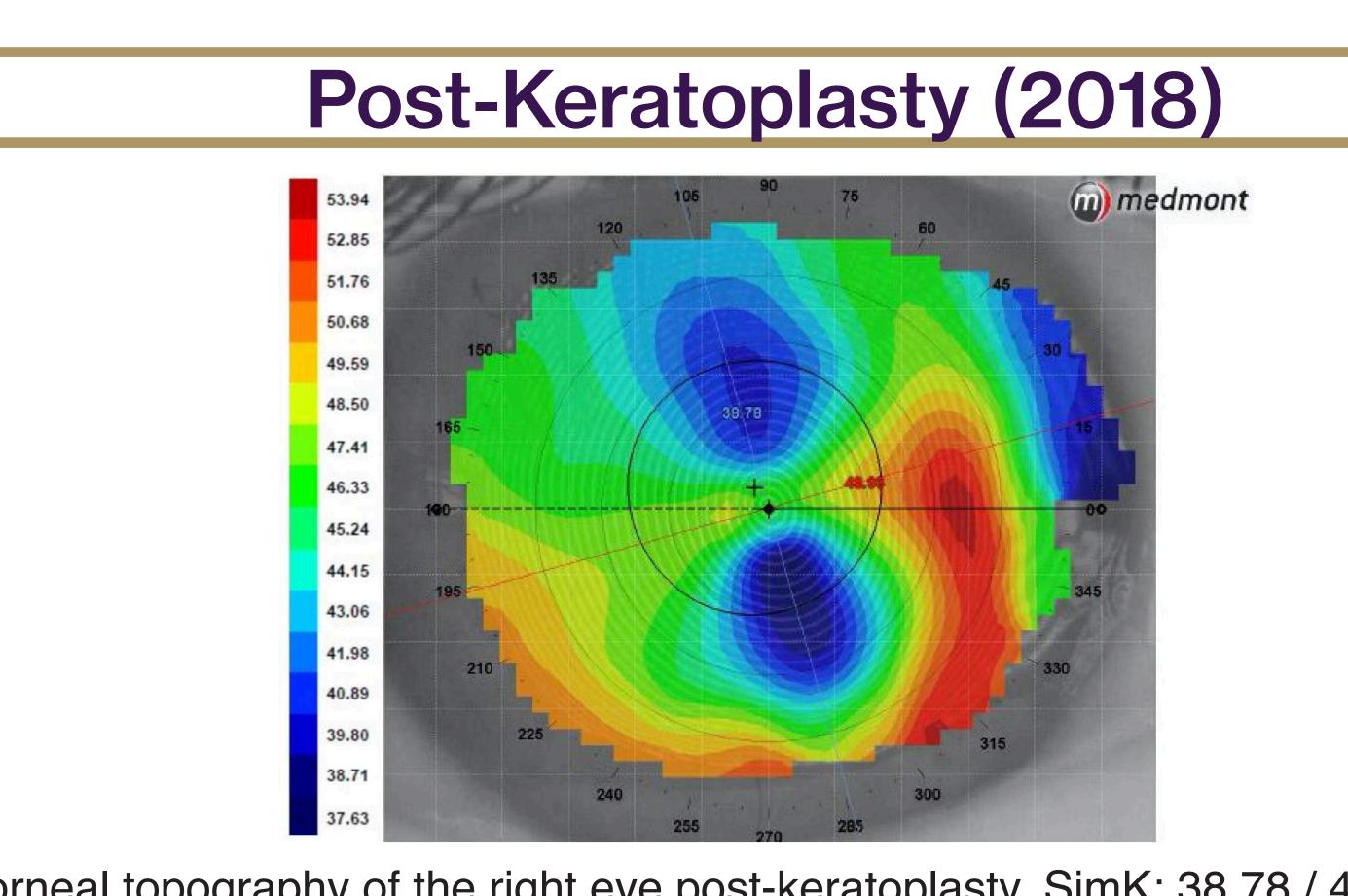


Fig 1b. Corneal topography of the right eye post-keratoplasty. SimK: 38.78 / 48.93 @16. Residual astigmatism is relatively regular.

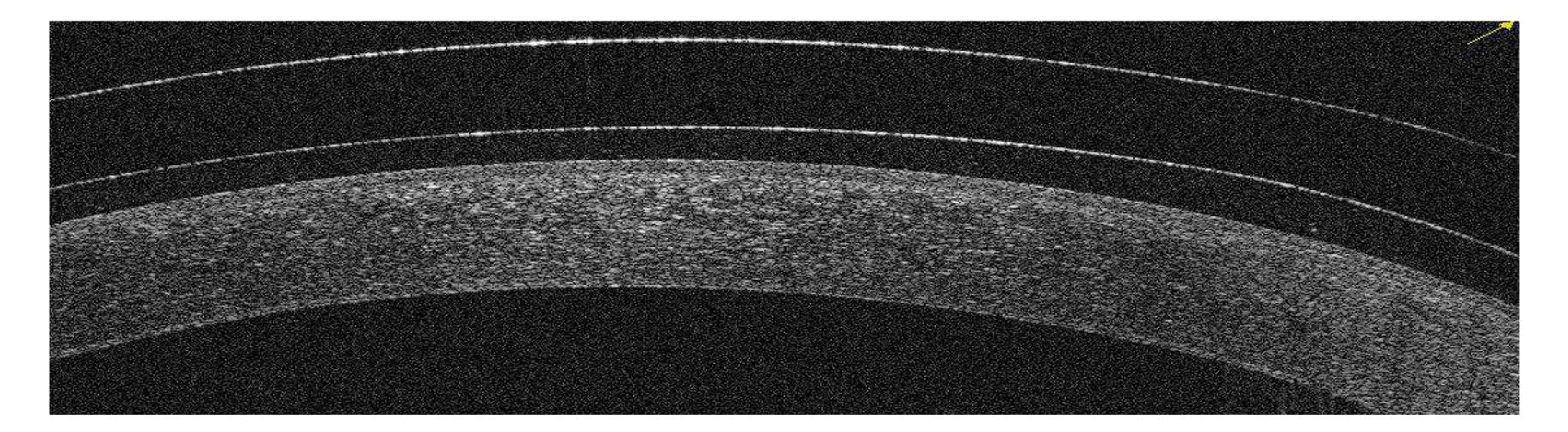
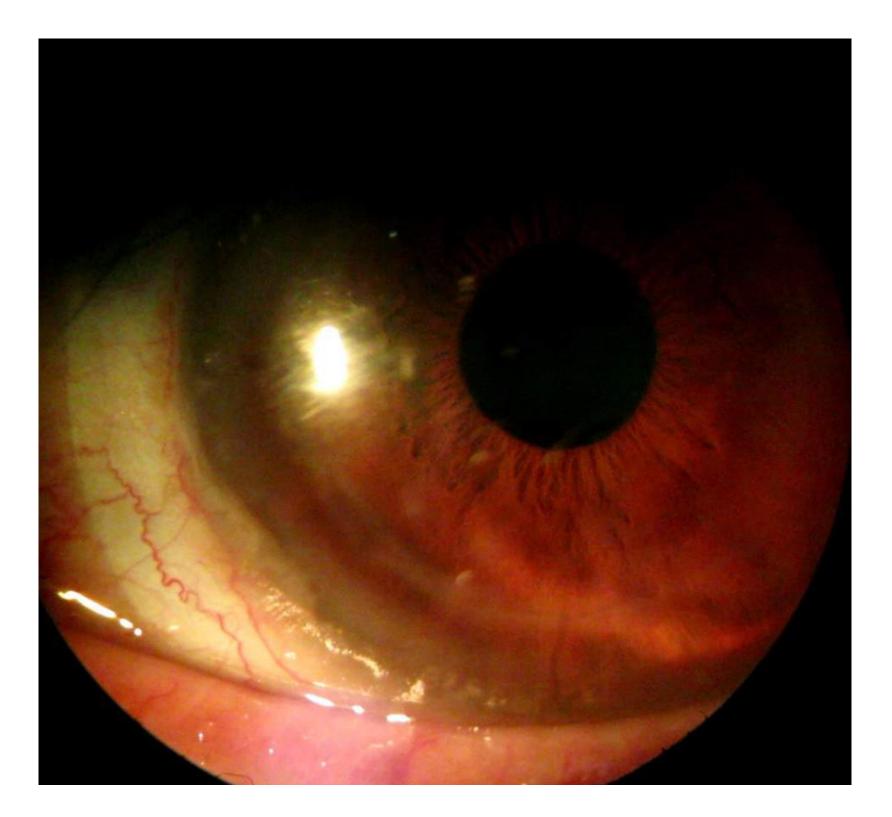


Fig 2b. An ideal fitting relationship was achieved. (Lens CT: 350 microns)



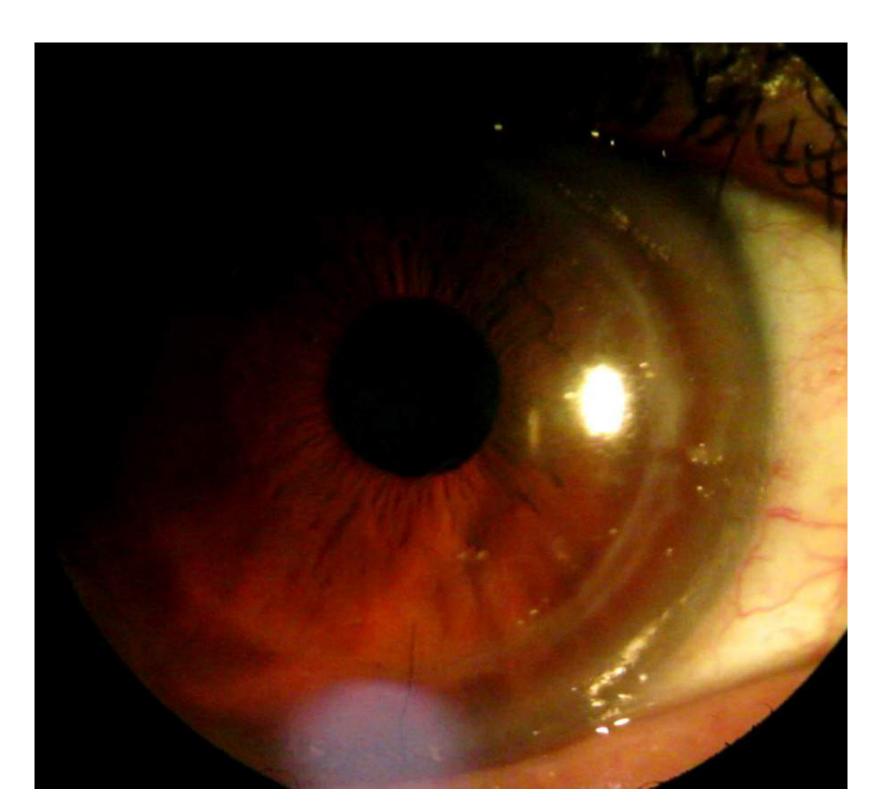


Fig 4b. Regression of the nasal corneal neovascular vessels.

Treatment and Management

- GJ was referred for a corneal transplant OD to replace the area of inferior steepening with a graft so that future lens fits would allow for more even alignment across the entire cornea
- GJ's post-transplant scleral lens fit has improved the prolapse
- Decrease in corneal area affected (Fig 3b)
- Remaining prolapse is freely mobile
- A majority of the neovascularization has regressed (Fig 4b)

Discussion

- Conjunctival prolapse is a known complication of scleral lens wear, but is often dismissed as a cosmetic problem
- However, prolonged interaction with the limbus may promote neovascularization and scarring of the underlying cornea
- Promoting corneal physiology is important for patients with irregular corneas because they may need a penetrating keratoplasty in the future
- 10-15% of keratoconus patients require transplants³
- The presence of corneal neovascularization prior to keratoplasty increases the risk for graft failure and rejection⁴
- Other management options:
- EyePrint PRO: custom scleral GP lenses created from a mold of the cornea, allowing the lens to contour the cornea more closely and minimizing the negative force created by the lens
- Conjunctivoplasty: conjunctivalchalasis may be a risk factor for conjunctival prolapse, so procedures to resect the conjunctiva may be beneficial

Conclusions

- Conjunctival prolapse may be monitored in mild cases, but should not be dismissed as a cosmetic incidental finding
- It is important to prevent serious sequelae from conjunctival prolapse, as development of peripheral corneal neovascularization may complicate future surgical procedures to restore vision, such as penetrating keratoplasty

References

- M. Walker; et al. Proposed Mechanism of Scleral Lens Induced Conjunctival Prolapse. Poster presented at the 2014 Global Specialty Lens Symposium, January 2014, Las Vegas.
- 2. M.K. Walker; et al. Complications and fitting challenges associated with scleral contact lenses: a review. Contact Lens and Anterior Eye, 39 (2) (2016), pp. 88-96
- 3. H. Wagner; et al. Collaborative longitudinal evaluation of keratoconus (CLEK) study: methods and findings to date. Contact Lens Anterior Eye, 30 (2007), pp. 223-232
- B. Bachmann; et al. Corneal neovascularization as a risk factor for graft failure and rejection after keratoplasty: an evidence-based meta-analysis. Ophthalmology, 117 (2010), pp. 1300-1305