

Corneal RGP Management of a Pediatric Patient After Corneal Laceration Repair

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BACKGROUND

Pediatric patients account for about one third of all cases that present after ocular trauma.¹ Additionally, one in five of pediatric patients with ocular trauma result in a ruptured globe.¹

The initial goal of treatment is to reestablish the integrity of the globe through emergency surgery and to prevent infection. However, repairing the globe can result in significant corneal scarring and irregular astigmatism that can limit visual potential. To avoid a penetrating keratoplasty in a young patient, a rigid gas permeable (RGP) corneal contact lens can be used to mask the irregular ocular surface. Use of corneal RGP in pediatric patients can be complicated by contact lens compliance, difficulty with insertion and removal and contact lens intolerance.²

CASE DESCRIPTION

An 8-year-old male presents for a contact lens fitting in the right eye after traumatic corneal laceration repair. Six months prior the patient sustained a full thickness corneal laceration from a tree branch in the right eye. He also developed a traumatic cataract in the right eye secondary to trauma. The patient had undergone corneal laceration repair and cataract extraction with insertion of a posterior chamber intraocular lens.

Entering uncorrected visual acuity in the right eye was 20/100 and pinhole acuity was 20/70. The right eye cornea was remarkable for a paracentral stromal scar extending from 2 o'clock to 6 o'clock (Figure 1). The patient was fit with a diagnostic reverse-geometry corneal RGP lens. This design was utilized due to the peripheral position and elevation of the corneal scar (Figure 2). Best corrected visual acuity with the corneal RGP contact lens was 20/30+.

After two lens remakes this lens design was unsuccessful due to the inability to vault over the corneal scar without creating excessive pooling/bubbles in the area surrounding the scar (Figure 3&4) Instead a lens design with a spherical base curve and aspheric peripheral curves was fit. This lens was able to provide adequate clearance over the corneal scar while not creating an excessive amount of clearance elsewhere (Figure 5). Lens comfort was improved and visual acuity remained at 20/30+.

FIGURE 1

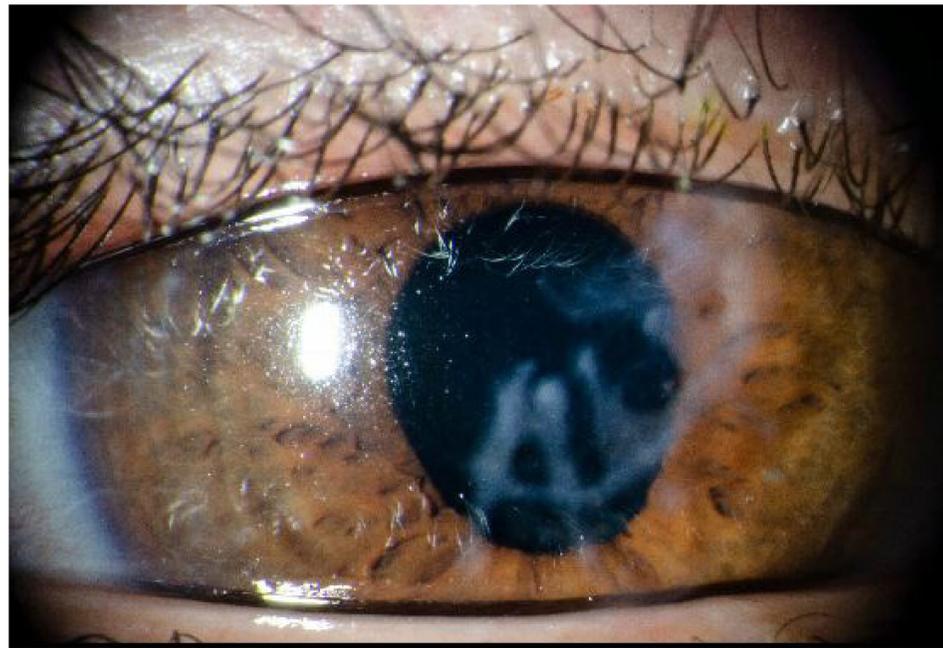


FIGURE 2

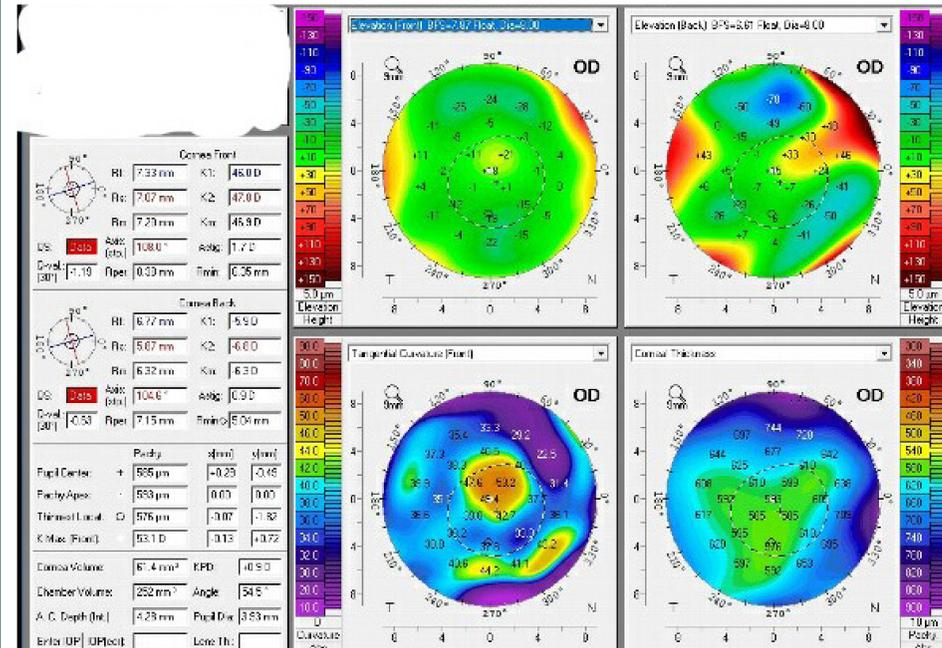


FIGURE 3

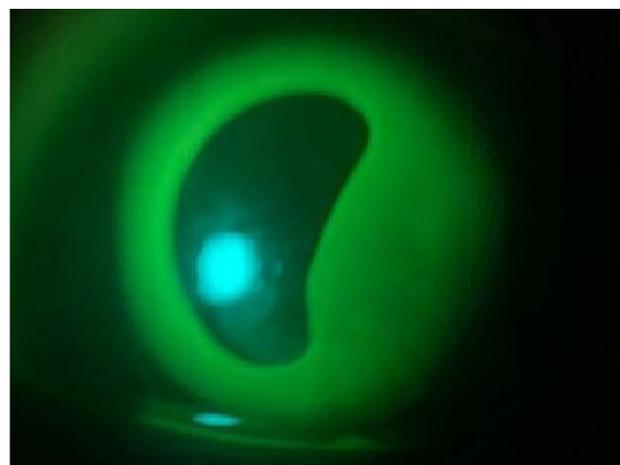


FIGURE 4

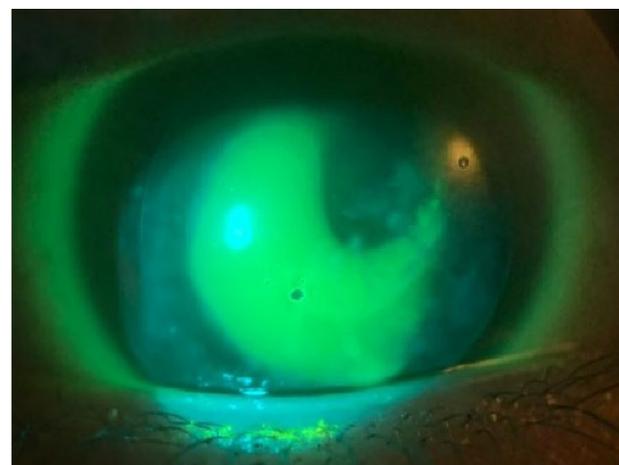
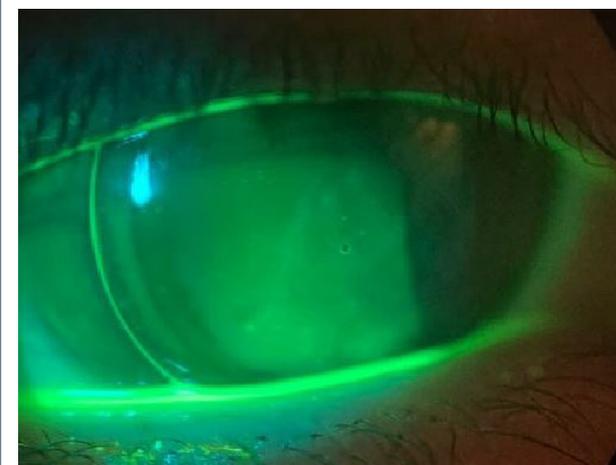


FIGURE 5



CONCLUSION

In patients with irregular astigmatism secondary to corneal laceration repairs, corneal gas permeable lenses often improve best corrected visual acuity from spectacles.³ RGP contact lenses were found to be well tolerated in a pediatric population, have the advantage of excellent oxygen transmissibility and low bacterial and protein adherence.^{4,5} A corneal RGP was chosen over a scleral contact lens because of its smaller diameter for a pediatric patient with a smaller palpebral aperture and for easier handling for the patient's caregivers. Comprehensive education to patient's caregiver should be given to stress the importance of good compliance with lens wear and regular follow-up to monitor contact lens fitting. The patient and caregiver were educated on importance of wearing full-time polycarbonate spectacles as protection from further traumatic events

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