



Visual Rehabilitation of Pediatric Chemical Burn with Scleral Contact Lens

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BACKGROUND

Young children are at greater risk for ocular chemical burns in comparison to adults. In 1- to 2-year-old children, household cleaners are most often to blame for ocular chemical injury. In fact, 1-year-olds are twice as likely to suffer chemical eye burns in comparison to 24-year-olds

Clinical manifestations after chemical injury vary and can change over time. Acute periocular signs of injury include periorbital edema and erythema, loss of epithelium of the skin, and loss of eyelashes and eyebrows. Conjunctival and corneal epithelial defects, chemosis, conjunctival inflammation, limbal ischemia, corneal cloudiness, sterile ulceration, edema, and perforation also may occur.

High intraocular pressure may result from damage to, and inflammation of, the trabecular meshwork. Extensive damage to the limbus may lead to limbal stem cell deficiency, causing loss of normal epithelial corneal healing, neovascularization, and conjunctivalization of the cornea. Conjunctival inflammation may lead to lagophthalmos, symblepharon formation, cicatricial entropion and ectropion, and trichiasis.

MANAGEMENT OPTIONS

Ocular chemical injury may ultimately result in corneal opacification. The irregular astigmatism from the corneal scar can be visually addressed with GP contact lenses or a corneal transplantation. The disadvantages of keratoplasty, especially in pediatric patients, include risks of examination under anesthesia, higher incidence of graft rejection and graft failure, suture-related astigmatism, and higher cost.

CASE EVALUATION FINDINGS

Consider a 6-year-old male diagnosed with amblyopia from a large corneal scar in his left eye due to a chlorhexidine chemical burn acquired at 4 years of age. Due to increased risks in children, corneal transplantation was deferred by his parents. Thus, this patient was managed conservatively with occlusion therapy and a scleral contact lens to correct his irregular astigmatism (Figure 1). This young patient was able to apply and remove the contact lens completely by himself (Figure 2). With this management, the patient's vision improved from 20/200 to 20/60

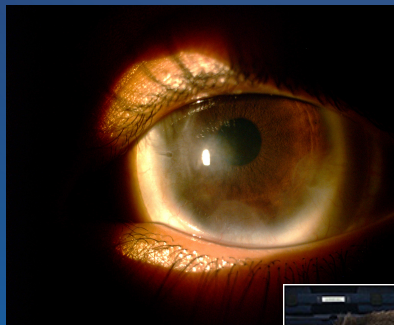


Figure 1. Scleral lens correction of irregular astigmatism from corneal scarring due to pediatric ocular chemical burn.



Figure 2. Consider prescribing scleral lenses to manage irregular astigmatism in children; this population is often able to successfully apply and remove these lenses themselves.

Corneal Topography

OD Norma Finding
OS Irregular Mire Distortion from Chemical Burn

Cell Density /mm²

OD 2871
OS 1916 reduced with signs of pleomorphism from trauma

Scleral Lens Design for Pediatric Chemical Burn

VS Menicon Z (SynergEyes)
OS 8.40/+1.50/16.00 vault 3400 tangent haptic 36-42

SUMMARY

Children are at increased risk ocular chemical burns in comparison to adults. Ocular chemical burn can lead to severe ocular surface disease and decreased vision. In cases of corneal scarring, contact lenses should be considered for vision rehabilitation after chemical burn injury.

SELECTED REFERENCES

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