

INTRODUCTION

Congenital cataracts account for 5-20% of visual impairment in children worldwide¹. Cataract extraction is critical to remove the opacity and prevent deprivational amblyopia. Infants are left aphakic and refractive correction becomes critical in visual development during the sensitive period within the first 4 years of life. In addition, glaucoma and strabismus are at higher predilection after congenital cataract surgery especially if the infant underwent cataract surgery before 4 months of age².

CASE DESCRIPTION

Chief Complaint: A 4 year-old Caucasian female presents to the Moran Eye Center in July of 2022 for a pediatric contact lens fitting.

Ocular History:

1. History of wearing soft contact lenses 3 years ago but discontinued due to discomfort
2. Oculofaciocardiodental syndrome
3. Bilateral aphakia s/p cataract extraction at 6 weeks of age
4. Ocular Hypertension OD s/p anterior vitrectomy, laser peripheral iridotomy x2, and nasal goniotomy, micropulse laser
 - Cosopt BID OD and Vyzulta QHS OD
 - IOP (tonopen): 37 OD, 16 OS
5. Intermittent Right Exotropia

CONTACT LENS SELECTION

Initial Fitting: Proclear

- OD: BC 8.4 mm, Dia 14.2, +12.00 DS
- OS: BC 8.4 mm, Dia 14.2, +20.00 DS

	1 month f/u	2 month f/u
Chief Complaint	Lenses fell out and eyes felt dry OU	Improved comfort OD, continued irritation issues OS
Presenting Lens	Proclear OD: BC 8.4 mm, Dia 14.2, +12.00 DS OS: BC 8.4 mm, Dia 14.2, +20.00 DS	SilSoft OD: BC 7.9mm, Dia 12.0 mm, +12 DS OS: BC 7.9 mm, Dia 12.0 mm, +20 DS
Fit	Decentered inferiorly and showed significant amount of movement	OS: significant amount of movement
Change in fit	Switched lens brand to steepen BC and decrease diameter	Steepen BC by 0.2 mm OS
Final lens to be ordered	SilSoft OD: BC 7.9mm, Dia 12.0 mm, +12 DS OS: BC 7.9 mm, Dia 12.0 mm, +20 DS	SilSoft OD: BC 7.7mm, Dia 12.0 mm, +12 DS OS: BC 7.9 mm, Dia 12.0 mm, +20 DS

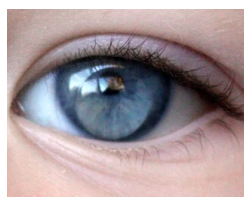


Figure 1. Silsoft
(Lensesforless, 2021)

Figure 1. Rigid Gas
Permeable
(Ento Key, 2016)

DISCUSSION

Refractive Treatment Options:

IOL implants are cautioned against for infants, because there are greater risks for adverse events and secondary intraocular surgeries. Implants are not easily replaceable with the growing and changing eye power. Often times, visual outcomes are similar to that of contact lenses.

Glasses can cause distortions and aberrations³, which would not be ideal for patients when they are going through the sensitive period.

Contact lenses are the optimal treatment modality for aphakic infants.

- Rigid gas permeable are great for patients with highly irregular corneas as they are fully customizable but may be uncomfortable and potentially can fall out
- Soft contact lenses (i.e. SilSoft) have high oxygen permeability, which give the added benefit of allowing patients the option to sleep in their lenses for up to a week at a time. They are generally more comfortable than RGPs but can cause greater adverse reactions such as bacterial infections due to the lower oxygen permeability that soft contact lenses provide.

Secondary Glaucoma Post Congenital Cataract Surgery:

Early cataract surgery, which is defined as surgery performed before 9 months of age, has an increased risk for development of glaucoma by 7.2x compared to that of late cataract surgery⁴.

Although the mechanism behind secondary glaucoma after pediatric cataract surgery is not well understood, a few possible theories have been proposed. One being that the trabecular meshwork is premature and is susceptible to postoperative inflammation and surgical trauma. Another proposition is that the eye is continually exposed to toxic degenerating lens proteins that is damaging the filtration system.

Risk factors include microcornea and other ocular anomalies such as microphthalmia and persistent hyperplastic primary vitreous. One study found that 96% of eyes had forward positioning of the iris to the posterior or middle trabecular meshwork.

CONCLUSION

The optimal contact lens prescription and parameters becomes crucial for the infant as it can help with visual development if done in a timely manner. Although the risk for secondary glaucoma becomes a concern for patients who undergo cataract surgery before 4 months of age, it is not recommended to delay cataract surgery in lieu of decreasing chances of glaucoma.

REFERENCES

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