Multifocal Scleral Contact Lens Fitting in the Management of an Aphakic Glaucoma Patient Following Tube Shunt Surgery

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Abstract:

Aphakic patients requiring refractive correction and lens stability may benefit from multifocal scleral contact lenses. In aphakic glaucoma cases involving tube shunts, close monitoring is imperative due to the risk of ocular infection and erosion.

I. Case History

- 14-year-old Caucasian male
- Chief complaint of difficulty playing sports with progressive addition spectacle lenses and requesting scleral lenses for playing volleyball.
- Systemic medical history significant for seasonal allergies. Ocular history significant for aphakia OU, primary open angle glaucoma OU, and strabismus. Ocular surgical history includes complex infantile cataract surgery OU, Baerveldt implants OU, trabeculotomy OS, and pupil surgery OS. Family history unremarkable.
- Current medications include Azopt and Latanoprost.
- Patient has worn corneal gas permeable (GP) contact lenses until the age of 5 but discontinued due to lens intolerance and visual instability. Since then, he has only worn a spectacle correction.
- Referred for a bilateral scleral contact lens fitting.

II. Pertinent findings

- Entering unaided visual acuity
  - OD: 20/1000 OD
  - OS: <20/1250 OS.
- Best corrected spectacle visual acuity
  - OD: 20/20
  - OS: 20/20-2
  - OU: 20/15-1
- Corneal topography revealed a relatively spherical and regular corneal surface OU.
  - OD: Sim K 44.50 x 44.50 x 180
  - OS: Sim K 44.50 x 44.62 x 180
- Biomicroscopy revealed temporal corneal cataract extraction scars in both eyes, with mild conjunctival entrapment OS. Mild asymmetry in pupillary response observed in inferior portion of pupil OS, a tube shunt in the anterior chamber at 12 o’clock, and mild anterior vitreous prolapse with suspended pigment in anterior chamber OS.

III. Diagnosis and discussion

- Bilateral Aphakia
- Primary open angle glaucoma secondary to infantile cataract extraction
- Discussion of contact lens options for aphakia and intraocular lens implantation. (Lindsay et al., 2010)
- Incidence of aphakic glaucoma, open-angle glaucoma being most common form and requiring lifelong medical treatment. (Chen et al., 2004)
- Discussion on Baerveldt implants. (Abbot Medical Optics)

IV. Treatment, management

- Patient was successfully fit in a Jupiter scleral GP lens with 15.4mm OD and 15.6mm OS overall diameters.
  - OD: intermediate refractive correction (standard Jupiter scleral lens)
  - OS: Distance and near refractive correction (Jupiter Plus scleral lens)
Fit demonstrated adequate tear vault, limbal clearance, no excessive edge lift, and minimal compression of the conjunctiva.

Visual acuity was 20/20 OD, OS, OU with good comfort and no indications of conjunctival erosion or infection.

He is being followed on a 1-2 month schedule to monitor IOP, evaluate the fitting relationships, and examine his overall eye health.

V. Conclusion

Scleral contact lenses can be a viable option for managing aphakic patients especially in cases where corneal gas permeable lenses are not tolerated.

With careful fitting and close monitoring, aphakic glaucoma patients with a history of tube shunt surgery can benefit from options provided with scleral lenses.

Comments to reviewer:
The patient’s topography, photograph of a Jupiter Plus multifocal design, and photographs of tube shunt will be illustrated. Lens parameters will be included.

Primary Topic: Contact Lenses – Scleral
Keywords: Contact Lenses – case report, aphakia, glaucoma
Requested format: scientific case report/case series: poster first, paper second