Background

Graft-versus-host disease (GVHD) is a rare and associated with hematopoietic stem cell transplantation (HCT). GVHD is a complication that occurs after HCT, which primarily involves the lungs, skin, and eyes. Ocular GVHD can cause severe keratoconjunctivitis sicca (KCS) with clinical findings of dryness, foreign body sensation, eye pain, punctate keratopathy, scarring, and vision loss. The following case report will discuss the treatment of KCS secondary to GVHD with scleral contact lenses.

History

Chief Complaint
A 35 year old white male was referred for treatment of severe KCS secondary to ocular graft-versus-host disease.

History of Present Illness
The patient was diagnosed with GVHD which caused severe bilateral KCS. His symptoms included blurry, fluctuating vision, photophobia, and burning. He has tried multiple drops including Restasis, artificial tears, and serum tears with little long term relief.

Medical/Ocular History
Medical history includes lymphoma which was treated with HCT 2.5 years ago and afterwards was diagnosed with GVHD. Other medical history of note is respiratory and gastrointestinal problems secondary to GVHD.

Exam Findings

Initial Visit
Anterior Biomicroscopy
Slit lamp examination revealed mild lid crusting and erythema with clear adnexa OU. The cornea had diffuse moderate punctate epithelial erosions (PPE) OU. The tear meniscus and tear break up time (TBUT) were both reduced. Filamentary keratitis and tear the saponified were also noted OU (Figure 1). Trace posterior sub capsular cataracts in the visual axis were observed OU.

Contact Lens Evaluation
The patient was fit with Europa (Visionary Optics) scleral lenses to treat his ocular surface disease. The following diagnostic lenses were used:

OD: 43.00 / -0.50 / 16.0 VA: 20/70
OS: 43.00 / -2.75 / 16.0 VA: 20/40

The patient noted significant subjective improvement of his symptoms. The large diameter lens provides consistent lubrication in order to heal and protect the ocular surface, thus allowing for vision rehabilitation, and ultimately improve the quality of life in GVHD patients.

Follow up visit #1
OD: 43.00 / -3.50 / 16.0 VA: 20/50
OS: 43.00 / -2.75 / -1.25 D toric haptic)VA: 20/40

The fit was determined to be adequate in both eyes with approximately 350 µm of central vault OU, adequate limbal vault and aligned landing zone OU. The patient was taught insertion and removal successfully at this visit.

Subsequent Follow-up Visits
Flamimetary keratitis had improved significantly and he had no visual complaints. His cornea still showed mild diffuse PEE. The patient had significant improvement in subjective symptoms and was able to return to a better quality of life. No changes were made in the lenses due to continued adequate lens fitting. He was advised to return in 3 months for follow up. Due to the severity of his condition, he was being kept on a tighter follow up schedule.

Figure 1. Ocular graft versus host disease with severe keratoconjunctivitis sicca symptoms right eye.

Figure 2 (Lower Left). Right eye diagnostic scleral lens lens showing the central vault.

Figure 3 (Lower Right). Left eye diagnostic scleral lens showing the central vault.

Figure 2 (Lower Left). Right eye diagnostic scleral lens lens showing the central vault.

Figure 3 (Lower Right). Left eye diagnostic scleral lens showing the central vault.

Discussion

Scleral lenses work well for ocular GVHD since the corneal-scleral contour is generally more complicated systemically, their scleral contact lens fit is simpler in comparison to patients with severe dry eyes because they provide both vision correction and therapeutic benefit by placing a reservoir of tears next to the corneal epithelium.

Ocular GVHD can cause severe KCS symptoms, break down of the ocular surface, and eventually lead to vision loss. Scleral contact lenses should be considered as an alternative for treatment for KCS secondary to GVHD when conventional topical treatments are not effective. The large diameter lens provides consistent lubrication in order to heal and protect the ocular surface, thus allowing for vision rehabilitation, and ultimately improve the quality of life in GVHD patients.

Conclusion

Ocular GVHD can cause severe KCS symptoms, break down of the ocular surface, and eventually lead to vision loss. Scleral contact lenses should be considered as an alternative for treatment for KCS secondary to GVHD when conventional topical treatments are not effective. The large diameter lens provides consistent lubrication in order to heal and protect the ocular surface, thus allowing for vision rehabilitation, and ultimately improve the quality of life in GVHD patients.

Selected References


