Prosthetic Contact Lens Fitting for Traumatic Mydriasis

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Abstract:
A 27 year old male presents with a history of traumatic mydriasis after ocular injury with a tennis ball OS over a decade prior to the visit. He experiences persistent photophobia, worse when outside, and only has slight relief with squinting. The patient wears no correction aside from the fellow eye. The traumatic eye is left unable to react normally to light resulting in pupil dilation. This leads to the inability of the eye to see properly, especially when in bright light.

Case Synopsis:
Entering VA: OD 20/15 sc
OS 20/15 sc

Entrance testing: WNL (except pupils below)

Pupil testing: illumination bright / moderate / dim; light reaction
OD 2.5mm / 4.0mm / 5.0mm; 4+ LR
OS 3.5mm / 6.5mm / 7.0mm; 4+ LR

Refraction
OD plano 20/15
OS plano 20/15

Silt Lamp
OD clear lids, lashes, cornea, conjunctiva
OS clear lids, lashes, cornea, conjunctiva

After trialing all three lenses binocularly for outdoor activities over the weekend, he noted that the best overall combination of comfort and vision was achieved with the 60 minute dark grey version. Monocular wear caused a notable Pulfrich effect when viewing moving objects so binocular wear was encouraged.

Conclusions and Discussion:
While the lens selected contains a UV-blocking monomer (benzophenone) and blocks 70% of UV-A radiation and 96% of UV-B radiation, it should be noted that contact lenses should never be relied upon as a sole source of UV protection for any patient. Despite this patient’s desire to be fit with a UV-blocking lens and be free of sunglasses wear, we discussed the continued need for wear of sunglasses in conjunction with these “sun lenses”. In the case of traumatic mydriasis, the need for UV protection becomes even more critical due to the risk of cataract.

Selecting the proper tint color and shade for prevention of photophobia is likely patient specific. This patient was successfully fit in custom dark grey-tinted silicone hydrogel lenses, tinted for 60 minutes, made using an 11.5mm mask and no pupil opening on the SoftChrome system. The patient stated the lenses were both comfortable and “perfect” for his daytime outdoor activities. He denied tunnel vision with the lenses and no longer needed to squint as much when outside. He was able to wear the lenses for as much time as needed on weekends and evenings (usually no more than a few hours at a time) and the color lasted the life of the lens (2 weeks) with no leaching.

Mask tinting of lenses in shades of grey can be effective for relief of photophobia due to traumatic mydriasis, especially when a patient fails with clear or tinted pupil designs. Both eyes should be fit to minimize any cosmetic difference, as well as to avoid any detrimental effect on vision.

References

Figure 1: Slit lamp camera images showing final prosthetic lens fit. Preferred lens was enfilcon A, tinted with an 11.5mm mask (no pupil opening) using dark grey tint (60 minutes).