Bilateral Prosthetic Management for Enhancing Cosmesis and Ocular Function

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BACKGROUND

Ocular prosthetics can encompass fitting devices from artificial eyes to prosthetic soft contact lenses (SCL). Indications for fitting ocular prosthetics include improving cosmesis of disfigured eyes and visual function[1]. We present a bilateral prosthetic management case for a patient with previous enucleation in one eye and iris atrophy in the fellow eye.

CASE HISTORY

A 49-year-old Caucasian male presented for an ocular prosthetic fitting

- OD: Habitual prosthetic 30+ years old
- OS: Proclear SCL: BC 8.6 / DIA 14.2 / PWR +8.75 (monthly replacement)

Ocular history:

Early 1980s: Enucleation OD following traumatic childhood accident

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Late 1980s: Iris atrophy OS post pneumatic retinoplexy with post operative aphakia

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Early 1990s: Fit in prosthetic eye OD which he has worn for 30+ years

Primary complaint:
Mucous discharge OD, which caused discomfort and concern for negative appearance from constantly wiping and drying his adnexa

Secondary complaint:
Persistent glare and photosensitivity OS

EXAMINATION FINDINGS

	OD	OS
Unaided VA	NLP	20/800 PHNI
BCVA	NLP	20/250 PHNI
Palpebral Conjunctiva	1+ hyperemia 1+ papillae	1+ hyperemia
Cornea	N/A	1.5mm band keratopathy N&T, 1.5mm round stromal scar SN to visual axis
Iris	N/A	Atrophy 360
Lens	N/A	Aphakia

TREATMENT AND MANAGEMENT

SUMMARY OF VISITS:

1. Initial prosthetic eye fitting

- Habitual prosthetic was used as a template
- Determined an increase in vertical palpebral fissure opening was needed

2. Initial prosthetic soft lens fitting

- In office trial and evaluation of prosthetic soft contact lens colors

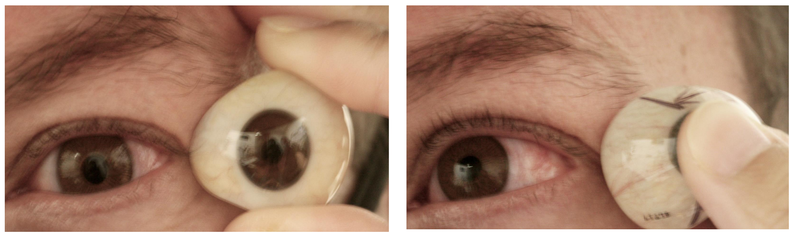

Figure 1: Color matching iris (left) and sclera (right)

3. Dispensing visit

- Prosthetic eye OD and prosthetic SCL OS

OD: Palpebral fissure aperture height: 5-8mm / Prosthetic iris DIA: 12mm / Pupil DIA: 3.5mm
OS: Cantor / BC 8.60 / PWR +8.75DS / DIA 14.5mm / Iris DIA 12.0mm / Pupil 3.5mm open / COLOR 09 Black back

Figure 2: Habitual prosthetic with Proclear SCL (top) vs. new prosthetic with Cantor SCL (bottom)

4. Follow up visit

- Patient education - recommend prosthetic eye polishing every 6 months and prosthetic SCL replacement annually

Figure 3: Habitual prosthetic (left) vs. New prosthetic (right)

DISCUSSION

- It is important to remove the prosthetic to inspect underlying tissue for pathology. The patient's worn and scratched habitual prosthetic provided a surface for mucous build up, causing increased inflammation in the palpebral conjunctiva[2]
- A well-fitting prosthetic eye corrects the volume deficit of the anophthalmic socket without gaps between the ocular cavity and prosthesis, which can cause irritation from tear film debris and mucous accumulation
- The optical quality of contact lenses is superior to spectacles in patients with aphakia by avoiding induced aniseikonia and prism while allowing wider field of view[3]
- Iris occlusion lenses help alleviate glare and photosensitivity for patients with pupillary abnormalities
- When fitting a prosthetic eye and prosthetic SCL concurrently, the prosthetic eye must be designed to match the appearance of the prosthetic SCL. As the patient was monocular, the SCL iris color was carefully selected to best fit the patient's goals and natural coloration
- Protective eyewear should be recommended to prevent injury in the remaining eye for monocular patients

CONCLUSION

- Ocular prosthetics serve the dual functions of maintaining orbital structure and improving cosmesis
- Prosthetic SCL can reduce glare and significantly improve quality of life for patients with pupillary abnormalities
- Prosthetic eyes should be regularly evaluated for changes related to age and orbital atrophy
- Both prosthetic devices can enhance psychological and physical well-being for patients with ocular disfigurements

REFERENCES

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