

Persistent Epithelial Defect Secondary to Trigeminal Schwannoma Treated With Overnight PROSE Wear

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BACKGROUND

- Patients who have undergone resection of a trigeminal schwannoma (TS) can develop neurotrophic keratopathy (NK) which can lead to persistent epithelial defects (PEDs) and possible vision loss if not properly treated.¹
- Management of PEDs can be quite challenging due to the loss of corneal sensory innervation from damage to the trigeminal nerve.
- When traditional treatments have failed, the Prosthetic Replacement of the Ocular Surface Ecosystem (PROSE) device offers an advantageous environment for the cornea to heal.^{2,3}
- This case discusses a patient with a longstanding PED from TS who showed complete resolution from overnight PROSE wear in just three days.

CLINICAL FINDINGS

History and Chief Complaint:

A 31-year-old female was referred to BCM in April 2021 to be fitted with a PROSE device on the left eye. The patient was diagnosed with TS in October 2020 and underwent resection in December, which resulted in a PED that was recalcitrant to treatment. She had been on maximum therapy without resolution: autologous serum tears, Oxervate, Regener-Eyes, 2 amniotic membranes, bandage contact lenses, punctal plugs, eyelid taping, topical antibiotics and 2 rounds of Avastin injections.

POHx: OD: unremarkable, OS: PED centrally without resolution

PMHx: unremarkable

FOHx: unremarkable

Medications: prenatal vitamin, autologous serum tears QID OS, Regener-Eyes BID OS, Besivance BID OS, PFATs q1hr

VAsc: OD: 20/20, OS: 20/200, PH: 20/100

Biomicroscopy:

OD: Unremarkable, make up debris in tear film

OS: 2 BCLs in place, **epi defect 2.1mmV x 2mmH** with smooth edges, deep stromal neovascularization temporal and nasal, central stromal haze in area of defect, 1+ PEE, temporal subconjunctival heme

Trial lens:

OS: PROSE trial 8012

Ordered lens:

OS: PROSE/ 8.0/ +0.25/ 18.5mm/ 2880 sag/ .31 CT/ optimum infinite dK/ 4 SmartChannels

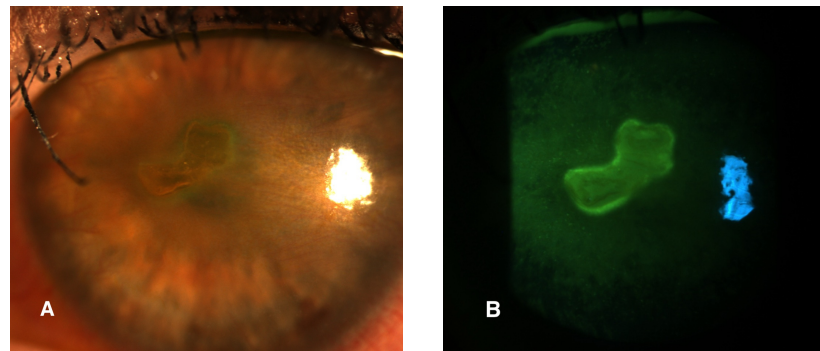


Figure 1. Biomicroscopic images of left eye before PROSE treatment
A. White light. B. Cobalt blue filter showing PED centrally

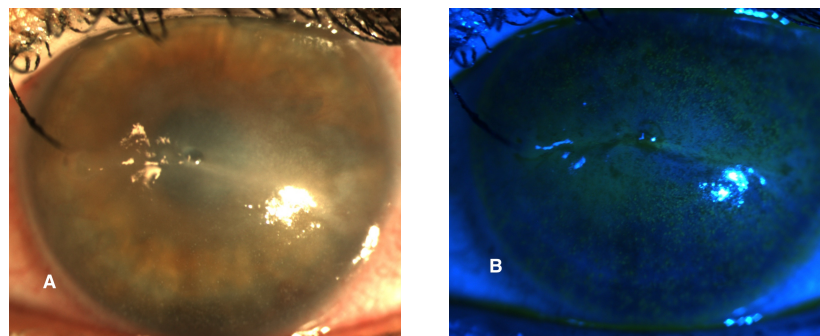


Figure 2. Biomicroscopic images of left eye after 2 days of overnight PROSE treatment
A. White light. B. Cobalt blue filter showing resolution of PED with healing line and edema

REFERENCES

1. Dua, Harminder S et al. "Neurotrophic Keratopathy." *Progress in retinal and eye research* 66 (2018): 107–131. Web.
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3. Rosenthal, Perry, Janis M Cotter, and Jules Baum. "Treatment of Persistent Corneal Epithelial Defect with Extended Wear of a Fluid-Ventilated Gas-Permeable Scleral Contact Lens." *American journal of ophthalmology* 130.1 (2000): 33–41. Web.

DISCUSSION

- Continuous overnight PROSE wear offers an optimal environment for corneal re-epithelization in severe ocular surface disease by providing an oxygen rich environment, barrier against the eyelids, and constant lubrication to the cornea.²
- 24-hour wear is advised until complete resolution of the defect is noted, then daily wear is recommended.² To reduce the risk of infection during overnight wear, one drop of BAK-free topical antibiotic is instilled in the bowl of the lens along with preservative free saline.
- Daily follow up exams are indicated to evaluate for infection as well as to remove, disinfect, and replenish the device.
- This case demonstrates complete corneal epithelization by day 3. The patient was followed up daily for a total of 5 days and was advised to continue long-term daily wear since she is at risk for recurrence.
- At the 5-month follow up, the patient showed stability with no ED recurrence and vision improved to 20/25.

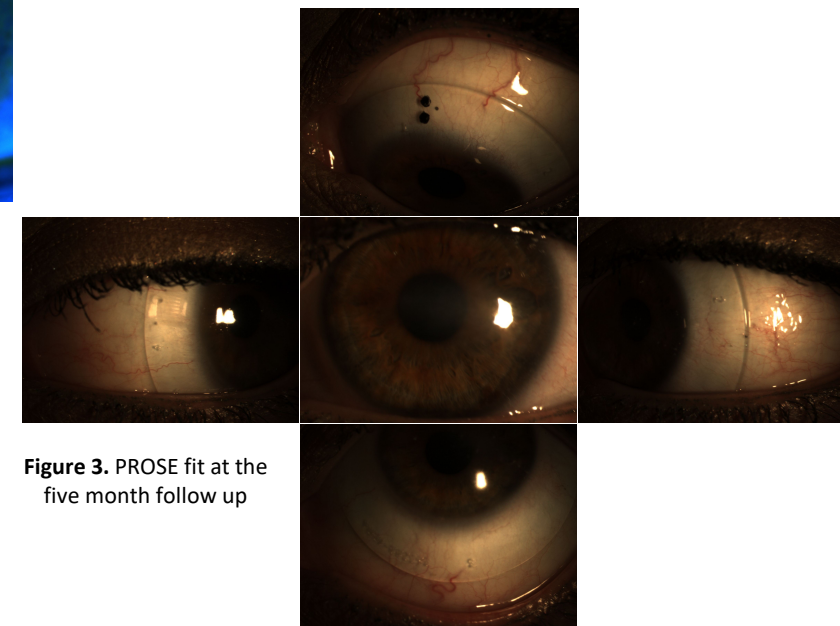


Figure 3. PROSE fit at the five month follow up