Frequency of use, indications for, and complications of corneal neurotization in KPNC patients with neurotrophic keratopathy

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| Challenge | **Neurotrophic keratopathy (NK) is a condition in which sensory nerve loss from surgical and non-surgical trauma, tumors, contact lens-wear, infections, or congenital etiologies leads to corneal damage and vision loss. The condition is extremely challenging to treat, has high healthcare utilization, and limited community-based data in the literature.** |
| Existing Evidence | A French study of neurotrophic keratopathy describing 354 eyes in a tertiary care center (1) was the largest study available, with others being limited to case series. 1. Saad S, Abdelmassih Y, Saad R, Guindolet D, Khoury SE, Doan S, et al. Neurotrophic

keratitis: Frequency, etiologies, clinical management and outcomes. Ocul Surf2020;18:231–6. https://doi.org/10.1016/j.jtos.2019.11.008. |
| Target Population | KPNC members of all ages with a diagnosis of neurotrophic keratopathy recorded using the ICD10 (H16.23X), 10/1/16 – 5/31/2021. |
| Intervention or Exposure | Time since diagnosis and comorbidities |
| **Outcomes/Key Findings** | **Common etiologies for this condition are herpetic infection diabetes, ocular surgery, and central nervous system etiologies. Common treatment modalities are topical antibiotics, steroids, autologous serum tears, and oral antivirals. We have found serious complications include eyes with perforation, endophthalmitis, and evisceration/enucleations (loss of the eye). The affected eye has increased visual acuity compared to the unaffected eye.**  |
| **Resulting Action/Change** | **By establishing benchmarks, this study informs the effective planning and adoption of corneal neurotization in the region as a novel treatment for NK. Future study will evaluate the efficacy and healthcare utilization of corneal neurotization.** |
| Additional Recommendations | Target population for corneal neurotization based on this study: stage 2, 3 NK patients <65, Charlson ≤1 excluding serious complications (perforation, endophthalmitis) |
| Implementation Tools  | - Surgical set up for regional oculoplastic surgeons who can offer corneal neurotization with cornea support- Cornea note template for NK to allow for automated extraction of structured data |
| Implementation Measurement | Effectiveness measurement: clinical outcomes (such as serious complications, change in visual acuity) and healthcare utilization of NK treated with corneal neurotization |
| Reference |  MSS submitted to Ocul Surf |