

Microbial Keratitis–Related Corneal Scar in a Keratoconic Eye: Aberrations, Refraction, and Visual Rehabilitation

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ABSTRACT

To report a case of keratoconus complicated by post-infectious corneal scarring and to discuss visual rehabilitation guided by refraction and higher-order aberrations (HOAs). A 33-year-old male with bilateral keratoconus, previously treated with corneal collagen cross-linking (CXL), developed microbial keratitis in the right eye resulting in anterior stromal scarring. Spectacle correction improved best-corrected visual acuity (BCVA) to 6/12; however, rigid gas-permeable (RGP) contact lens fitting restored vision to near 6/6. Pentacam imaging revealed vertical coma and trefoil, in the affected eye. (Mannis et al., 2016; Mountford et al., 2018). The patient was managed with culture-guided topical antibiotics followed by corticosteroid therapy for scar modulation and ocular surface optimization. Visual rehabilitation included RGP contact lens fitting. Surgical options such as phototherapeutic keratectomy (PTK) or deep anterior lamellar keratoplasty (DALK) were reserved for future consideration if optical rehabilitation failed (Zarei-Ghanavati et al., 2017; Anwar et al., 2018). Spectacle correction alone may underestimate visual impairment in keratoconic eyes with post-infectious scarring. Corneal aberrometry and tomography are essential for assessing residual optical quality and guiding visual rehabilitation options or surgical intervention (Dart et al., 2020; Pflugfelder et al., 2017).

Keywords: Keratoconus; microbial keratitis; corneal scar; higher-order aberrations; rigid gas-permeable contact lens; PTK; DALK

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