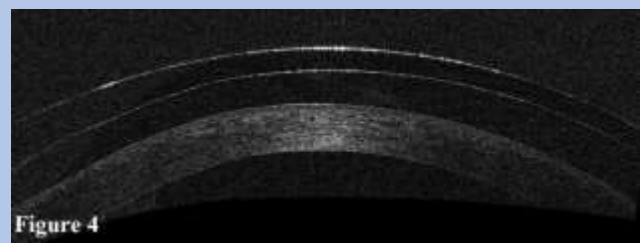
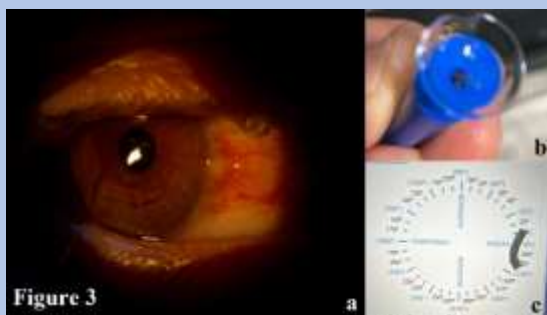
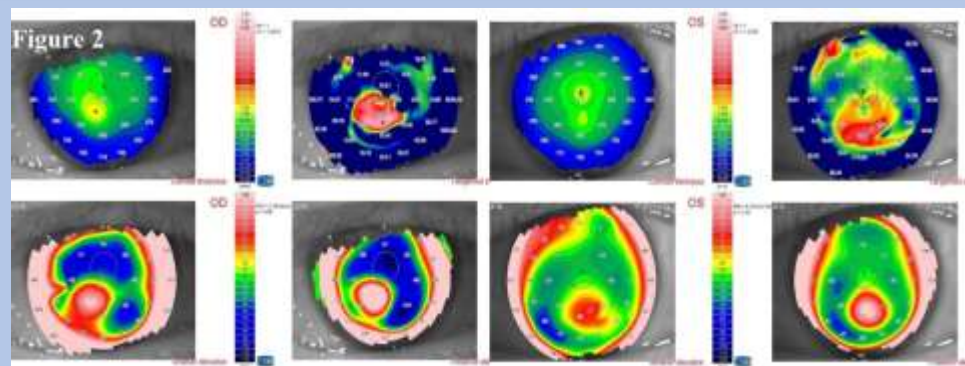
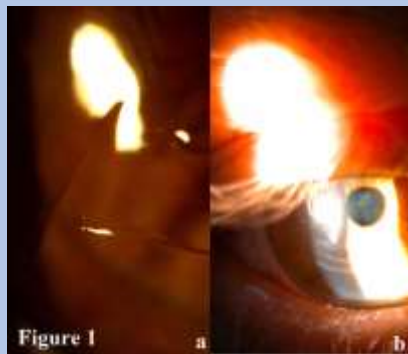


INTRODUCTION and PURPOSE: Refractive keratotomy (RK), which was widely performed as a refractive surgical procedure in the 1980s, has lost its popularity due to its association with significant postoperative complications, such as refractive instability and irregular astigmatism.¹ The aim of this case report is to demonstrate successful visual rehabilitation using a scleral lens in a patient with history of RK.

CASE PRESENTATION

A 51-year-old male patient with a history of radial and arcuate keratotomy for high myopia and astigmatism, who subsequently developed corneal ectasia with associated irregular astigmatism, presented to our clinic for visual rehabilitation. Visual acuity was 0.1 in both eyes, and anterior segment evaluation revealed bilateral radial and arcuate keratotomy scars (Fig 1). Sirius corneal tomography of both eyes demonstrated paracentral steepening and irregular astigmatism (Fig 2). As satisfactory visual improvement could not be achieved with spectacles or other contact lens modalities, an ICD Flexfit scleral lens with a diameter of 16.3 mm, base curve radius of 8.05 mm, power of -0.75 diopters, and a sagittal vault of $4200\ \mu\text{m}$ was fitted in the right eye. For the left eye, an ICD Flexfit scleral lens with a diameter of 16.3 mm, base curve radius of 8.05 mm, power of $+1.50 -2.00 \times 180^\circ$ diopters, and a sagittal vault of $4200\ \mu\text{m}$ was prescribed. Because of a nasal pinguecula in the right eye, a notch was created in the $10-340^\circ$ quadrant of the lens to achieve optimal ocular surface alignment (Fig 3). The optimal vault heights were verified by using anterior segment optical coherence tomography (AS-OCT) (Fig 4). After scleral lens application, best-corrected visual acuity increased to 0.9 in both eyes.



DISCUSSION and CONCLUSION: Scleral contact lenses represent an important option for visual rehabilitation for patients with irregular astigmatism. Especially in post-RK patients, corneal irregularities induced by radial incisions render contact lens fitting more challenging, particularly for cornea-supported lenses such as gas-permeable lenses.² Chu et al.³, in a study involving 36 eyes, reported a scleral lens success rate of 64% in post-RK patients, and noted that decentration of the RK treatment zone and smaller central clear zones were associated with less optimal fitting. In our patient unresponsive to alternative modalities, scleral lenses provided significant visual rehabilitation and restored functional daily life. With adequate chair time, and individualized lens modifications, scleral lens fitting can yield successful outcomes.

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