Myopic Laser-Assisted In Situ Keratomileusis Following Epikeratophakia

A 48-year-old healthy white man underwent bilateral epikeratophakia in 1986 for high myopia. After several months, his refraction regressed slightly and his right cornea developed central haze. He then had photorefractive keratectomy in both eyes for myopia and phototherapeutic keratectomy in the right eye to reduce the corneal haze, which was not successful. Therefore, in March of 1999, the epikeratophakia lenticle was removed from the right cornea to reduce the central corneal haze.

The patient was initially seen in June 2002 for a laser-assisted in situ keratomileusis (LASIK) consult. At that time, the patient's uncorrected vision was counting fingers OU. Best-corrected vision in the right eye was 20/20 with a dry refraction of −7.25−2.50 × 180 and 20/20 with a cycloplegic refraction of −7.00−1.00 × 180; in the left eye, it was 20/30 +2 with a dry refraction of −8.50−2.00 × 165 and 20/30 +2 with a cycloplegic refraction of −8.00−2.00 × 165. Pachymetry was 527 µm OD and 672 µm OS. Keratometry was 42.50 diopters (D) at 15 degrees, 44.00 D at 105 degrees OD and 43.75 D at 10 degrees, 45.50 D at 100 degrees OS. Anterior and posterior segment examination results were normal except for corneal neovascularization superiorly and inferiorly in both eyes and midperipheral anterior stromal scarring from the 2-o’clock to the 10-o’clock position in both eyes. Centrally the cornea was clear in both eyes (Figure 1). Corneal topography of the left eye showed a circular midperipheral steepening from the lenticle still present within the cornea (Figure 2).

After much counseling, the patient decided to proceed. On July 11, 2002, LASIK was performed on the left eye. The VISX Star 3 excimer laser (VISX Inc, Santa Clara, Calif) and Hansatome microkeratome (Bausch & Lomb, Rochester, NY) were used. After the flap had been made and lifted in the left eye, a raised ridge of corneal tissue was visible in the midperiphery of the stromal bed. This midperipheral thickening and elevated corneal tissue was presumed to be the previously placed lenticle. The left eye was treated for −7.3−2.00 × 165. One day postoperatively, uncorrected vision was 20/100 OS. The flap was in good position and clear except for the preexisting stromal scarring. One week

Figure 1. External photographs of the right eye (left) and the left eye (right) showing corneal neovascularization and midperipheral stromal scarring.

Figure 2. Corneal topographies of both eyes after epikeratophakia (the lens has been removed from the right eye) and prior to laser-assisted in situ keratomileusis.
postoperatively, the patient’s uncorrected vision was 20/50 OS. The left eye was correctable to 20/20 with +1.50−1.75×60.

The patient was followed up every 2 weeks for 5 months until his vision and refraction stabilized in the left eye (without correction, visual acuity was 20/200 and with correction, −1.75−2.50×45, visual acuity was 20/20). Keratometry in the left eye at this time was 41.25 D at 136 degrees, 38.75 D at 46 degrees, and pachymetry in the left eye was 572 µm. The topography of the left eye just prior to the enhancement is shown (Figure 3). The left eye was retreated on January 15, 2003, for −1.8−2.50×45. The flap was not recut but lifted up with some difficulty, as it had adhered very strongly to the corneal bed. At 1 day postoperatively, the uncorrected vision was 20/20 OS.

The final uncorrected vision, 3 months after retreatment, was 20/20–1 OS. Uncorrected near vision was Jaeger measure 2 OS. The patient was very happy with his final visual outcome.

This is the first known case of LASIK for myopia being performed after epikeratophakia. This report shows that LASIK following epikeratophakia can be performed successfully.

Eileen Conti, MD

Correspondence: Dr Conti, 121 Rte 31, Suite 200, Flemington, NJ 08822 (contieyecare@aol.com).

Macular Schisis Detachment Associated With Angle-closure Glaucoma

Optic disc pits represent congenital anomalies in the optic nerve head commonly associated with retinoschisis and serous retinal detachments. In contrast, acquired glaucomatous damage to the optic nerve, both localized acquired pits and diffuse Schnabel optic atrophy, has not been linked to retinal detachment. A recent report by Spaide et al demonstrated schisis and outer layer detachment, the characteristic features of optic pit maculopathy, in the absence of an optic pit. We describe a patient who developed macular schisis and underlying serous detachment in an eye with a large optic cup following repeated attacks of angle-closure glaucoma.

Report of a Case. A 54-year-old man was seen by an ophthalmologist and complained of 4 weeks of intermittent pain and blurring of vision in his right eye. A right afferent pupillary defect was present, and the visual acuity was 20/200 OD and 20/25 OS. Significant asymmetry of the optic nerves was observed, with cup-disc ratios of 0.9 OD and 0.2 OS (Figure 1). The fundus of the left eye was unremarkable, but the right eye had a serous retinal detachment with fluid extending from the disc margin through the macula (Figure 2A), as well as a posterior vitreous detachment. Contact lens examination revealed a small area of dehiscence in the internal limiting membrane just temporal to the right optic disc.

An area of hyperfluorescence deep in the central and inferotemporal margin of the right optic cup without leakage into the subretinal space was present on fluorescein angiography (Figure 2B). Optical coherence tomography demonstrated an area of retinoschisis continuous with the optic nerve with an associated neurosensory retinal detachment extending through the macula (Figure 2C and D). The patient has deferred any surgical intervention. His intraocular pressure remains well controlled with timolol maleate in the right eye.