Epi-LASIK promising for post-surface ablation enhancement

EPI-LASIK appears to be a safe and effective technique for correcting residual myopia in eyes that have previously undergone surface ablation, said Christoph W inker von Mohrenfels, MD, at the XXI Congress of the European Society of Cataract and Refractive Surgeons.

The 20 eyes in his Epi-LASIK enhancement series had refractive errors ranging from -3.5 D to -8.0 D prior to their primary procedure. The residual refractive errors at the time of the Epi-LASIK enhancement ranged from -0.25 D to -2.0 D (mean +0.05 D to -0.06 D). This indicates that the procedure was able to achieve the intended correction and had excellent accuracy of the corrections. After just one week, two-thirds of eyes were within 0.5 D of the intended correction and all were within 1.0 D. Nearly all (95%) were within 0.5 D of intended correction after one month.

Postoperatively, the mean refraction showed a small hyperopic shift after the first week (mean +0.23 D) with a return toward plano by one month and stable results thereafter. At one, three, and six months, mean spherical equivalent ranged from -0.05 D to -0.06 D.

It was possible to remove the contact lens by day three in 85% of eyes. In the remaining eyes, the contact lens was removed at day three and then replaced with a new one that remained in place for another two days.

There were no problems with buttonholes or incomplete flaps, and no eyes lost two or more lines of best-corrected acuity. Twenty percent of eyes showed a one-line loss on the first post-operative day. By one month, only 10% of eyes had lost BSCVA. At three and six months, only one eye had a 1-line loss of BSCVA. Half of the eyes gained one or more lines of best-corrected visual acuity at one month.

“Clinical examination of the latter eyes revealed some inconsistencies around the wound edges that we thought might increase the risk of erosion. Therefore we chose to keep a contact lens on for another two days,” Dr von Mohrenfels explained.

The safety of the enhancement procedures was excellent. There were no problems with buttonholes or incomplete flaps, and no eyes lost two or more lines of best-corrected acuity.

There were several published studies describing PRK after PRK and LASEK after LASEK. However, because the epithelium is more adherent to the stroma after the first surgery, flap lifting in a LASEK enhancement can be technically difficult and as a result, the procedure may be complicated by poor wound healing. We would expect those problems should be avoided with Epi-LASIK since it involves epithelial separation between the basement membrane and Bowman’s layer where there is still normally minimal resistance,” Dr W inker von Mohrenfels explained.

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