

Less haze with epi-LASIK than PRK



Tamer Gamaly

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in London

EPI-LASIK appears to be a safe and effective refractive procedure in patients who are prone to haze and unsuitable for LASIK, said Tamer Gamaly FRCS, Magrabi Eye and Ear Hospitals, Muscat, OMAN.

In a presentation at the XXIV Congress of the ESCRS Dr Gamaly presented results of a study in which 25 Middle Eastern patients underwent PRK in one eye and epi-LASIK with the Moria Epi-K (epikeratome) in the other. It showed that while both groups of eyes had similar results in terms of visual outcomes and pain there was less haze in the eyes undergoing epi-LASIK.

The patients in the study had a pre-operative spherical equivalent -2.76 D (range: -1.0 D to -4.88 D). Laser ablations were performed with the Nidek EC-5000 in all cases. Patients were excluded from the treatment if they were keratoconus suspects, had dry eyes, unstable refraction, or had undergone previous ocular surgery.

All patients were unsuitable candidates for LASIK, due to thin corneas. They were also considered to be poor candidates for conventional PRK because they had brown eyes, which can be an important risk factor for haze after surface ablations, he said.

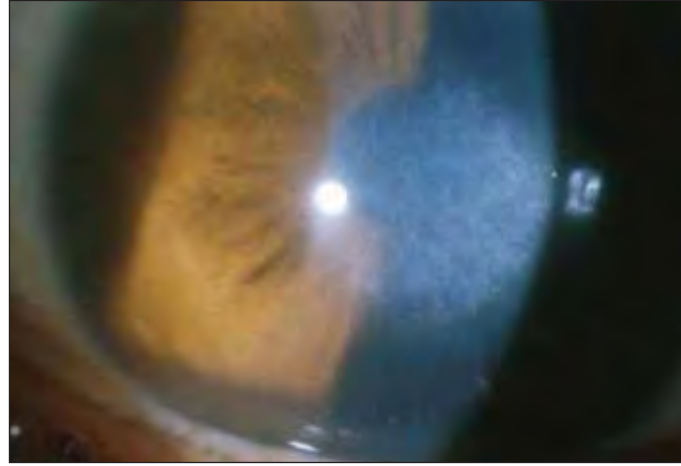
Studies have shown that the incidence of corneal haze after PRK is significantly higher among patients with brown irides than it is among those with blue irides and that in eyes of Middle Eastern patients haze can develop after PRK corrections as low as 2.5D, he noted.

Similar efficacy, safety and pain, less haze

The uncorrected visual acuity results at six months were very similar in the two treatment groups, Dr Gamaly said. In the epi-Lasik group, 73 per cent achieved 20/20 or better, 91 per cent achieved 20/25 or better, and 91 per cent achieved 20/30 or better. In the PRK group, 71 per cent achieved 20/20 or better, 86 per cent achieved 20/25 or better, and 93 per cent achieved 20/30 or better. All eyes were 20/40 or better at three months.

The epi-LASIK treated eyes appeared to fare slightly better than the PRK-treated eyes in terms of BCVA, although the difference did not reach statistical significance, he noted. Slightly more of the eyes in the epi-LASIK group gained one or two lines. No eyes in either group lost two or more lines of BCVA.

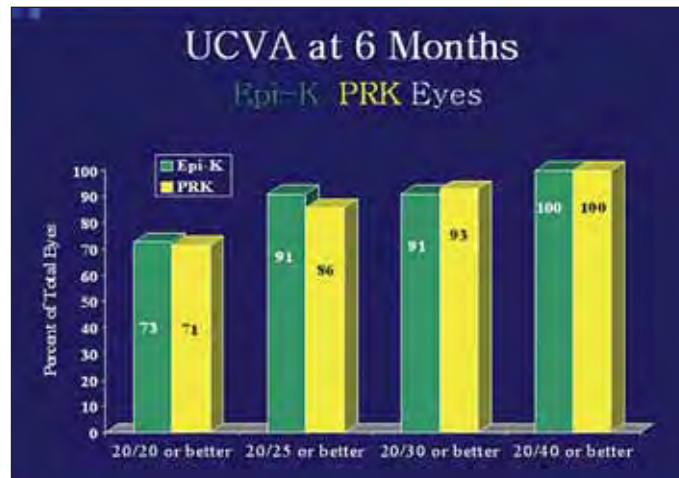
The two groups also had similar results with regard to postoperative pain, although the degree and the duration was less in the epi-LASIK-treated eyes. Two thirds of the epi-LASIK treated eyes were pain-free, while 33.3 per cent felt pain in various degrees.



Haze after PRK correction



Epikeratome



UCVA



BSCVA

Dr Gamaly noted that the most important difference between the two groups was in the occurrence of sub-epithelial haze. In the epi-LASIK eyes there was a trace of haze in 29 per cent and the remaining eyes remained totally clear at six months. By comparison, in the PRK-treated eyes 29 per cent had a trace of haze, 21 per cent had level one haze, seven per cent had level two haze and seven per cent had level three haze.

Advantages over other surface procedures

Epi-LASIK is free of the many drawbacks of the older surface ablation techniques, Dr Gamaly said. The procedure involves the mechanical separation of the epithelium from the stroma with a specially designed device. It therefore involves no toxic substances. Moreover, research has shown that around 85 per cent of the epithelial cells in the separated flap remain viable (Pallikaris et al, JCRS, Aug 2003).

The epikeratome Dr Gamaly used in the study, the Moria Epi-K, fully automates the creation of epithelial flaps. The Epi-K's handpiece has two motors, one for head advancement and the other for blade oscillation. The advancement speed is

specifically calibrated for epithelial separation.

In addition, the disposable head encases a pre-assembled non-cutting blade. The angle of the separator to the epithelium allows for cleavage of the epithelial layer while an appplanation front plate prevents the instrument from cutting into the stroma.

When he has created the flap he uses balanced salt solution to move it out of the way during the ablation. Following the ablation he manipulates the flap back into place with a saline-soaked sponge. He then applies hypertonic saline to make the epithelial flap more adherent. He concludes by applying antibiotic drops and placing the

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When carrying out epi-LASIK procedures Dr Gamaly first assembles the epikeratome on the eye and uses the slow speed of the Epi-K device to move it forward across the eye. He emphasised the importance of continually irrigating the flap throughout the separation phase to avoid tearing the epithelial tissues and prevent the epithelium from adhering to the epikeratome or the stroma.

bandage contact lens on the eye.

“Epi-LASIK is a safe, effective and predictable refractive procedure. The epikeratome was effective for performing epithelial separation and, compared to other surface ablation techniques, entails less risk of haze with less pain perceived by the patient,” he reported.

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