

Fine-tuning LASEK

By Alan Brown, MD

When LASEK was introduced I pondered whether I would use the new technique. LASIK was working well, so why bother with all the old PRK healing issues? My pondering stopped when I happened to do a postop for a LASEK/ LASIK patient who moved from California to my practice location in Wilmington, North Carolina. LASEK was performed on his right eye due to peripheral retinal pathology. The left eye revealed a standard horizontal LASIK flap. I asked this patient which eye he preferred and he immediately replied he preferred the LASEK eye due to better vision and lack of dry eye problems. At that, I purchased the original LASEK set and committed my efforts to this new technique.

The butterfly version* made sense to me, but I did not like the idea of having to hold the two hemiflaps open during the ablation. With the help of Rhein Medical and suggestions from Dan Durrie, MD, I developed instruments that allow a blend of the original and butterfly techniques.

Additional improvements in the instrumentation include a new epithelial microplow. The microplow will differ from the hoe in that all edges of the microplow are curved to match the radius of curvature of the cornea. This improvement allows the microplow to hug Bowman's membrane and prevent delamination of the epithelial layers that can occur with the straight-edged microhoe.

Although LASEK is a bit more challenging than

*Paolo Vinciguerra, MD, is credited with developing the butterfly technique. Dimitri Azar, MD, is credited as being among the first to develop LASEK.

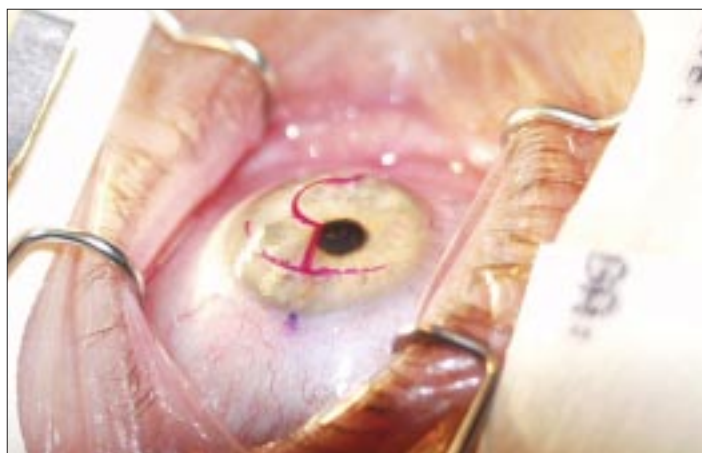


Figure 1. The butterfly trephine creates epithelial scoring for the creation of two hemiflaps with a central score that circumnavigates the visual axis.

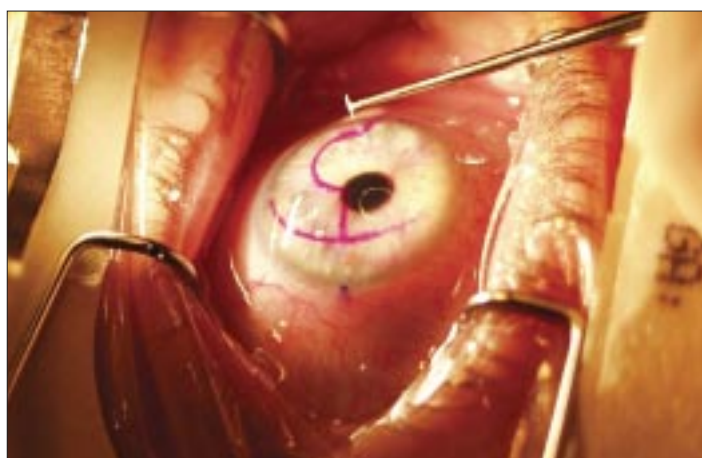


Figure 2. After 20% alcohol placement, the Brown Intacs pocket starter is used to dissect beneath the scored epithelium. Leaving the alcohol on too long (a variable dependent on the patient's age and health) makes for a clean dissection, but also means a much longer epithelial recovery (about six days). I prefer the more difficult and somewhat ragged dissection produced by 20 to 30 seconds application of alcohol. The healthier epithelium usually heals in about three days.

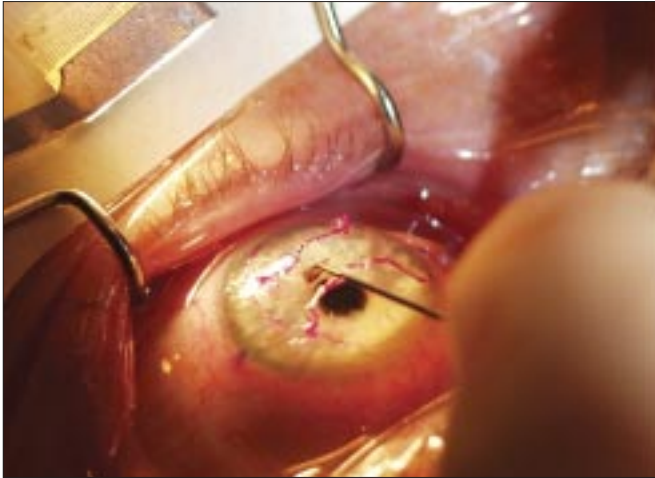


Figure 3. The microhoe continues the hemiflap dissections.



Figure 4. The epithelium is fully retracted and the cornea is ready for ablation.

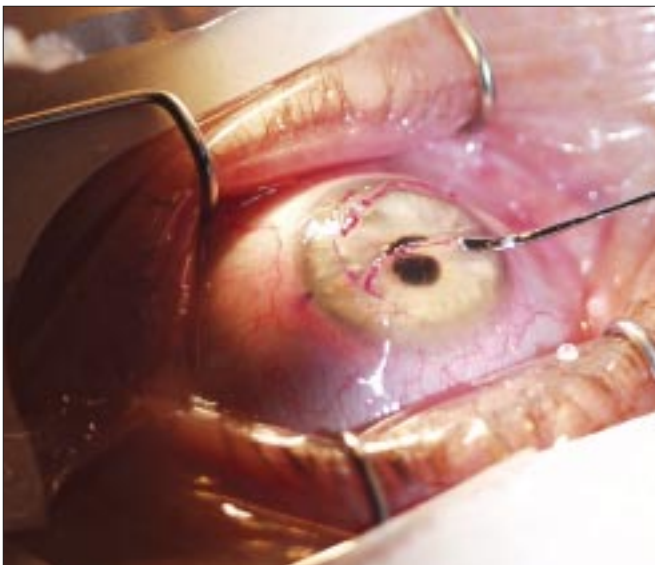


Figure 5. After ablation the epithelium is repositioned. This repository cannula hydrates and repositions the epithelium in one step.

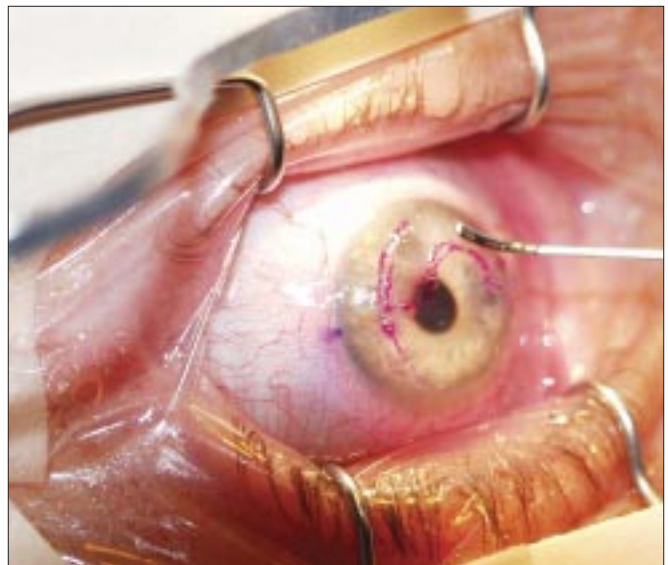


Figure 6. The epithelium is repositioned to its original position, ready for a bandage contact lens.

LASIK, I believe the long term benefits for the patient are worth the effort. These benefits may be even more evident once custom ablation becomes routine because LASEK avoids the induced wavefront aberrations caused by microkeratome flaps. **RRS**

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All images courtesy Alan Brown, MD

All LASEK instruments are available through Rhein Medical.