

Hyperopic LASIK

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With the recent approval of the treatment of hyperopia by the FDA, refractive surgeons everywhere are eager to begin this exciting new modality for their patients. Invariably, the question comes up, "What is the best way to approach hyperopic LASIK?" Richard L. Lindstrom, MD attempted to address this question in his lecture, given at the 1998 AAO annual meeting in New Orleans, LA.

Dr. Lindstrom stated that he prefers LASIK over PRK for all patients without anterior scarring, dystrophy, recurrent erosions, or irregular astigmatism. Currently, he treats hyperopia as high as +6.00 D, and stated that "treating up to +10.0 D of hyperopia is probably OK."

Dr. Lindstrom says that the advantages of hyperopic LASIK over hyperopic PRK are similar to the advantages of myopic LASIK over myopic PRK. These include: no pain, rapid visual recovery ("wow" factor), acceptable performance of bilateral surgery, easy and early enhancements, retention of Bowman's membrane (with no late haze or regression), and return of normal corneal sensation. In addition, Dr. Lindstrom likes to point out that LASIK "rewards the skilled surgeon and creates a barrier to the unskilled."

The only disadvantages to LASIK that Dr. Lindstrom sees are that it is more expensive than PRK, and requires more skill. However, as he mentioned earlier, the "more skill" requirement may actually be an advantage in the long run. Dr. Lindstrom thinks that the microkeratome complication rate may actually be overestimated, because in his center this rate is very low (only 1 per 500 cases, or 0.2%).

His surgical technique for hyperopic LASIK is similar to that for myopic LASIK. He uses only as much topical tetracaine or proparaine as necessary for anesthesia, to avoid punctate epithelial keratopathy (PEK). He uses the Lindstrom marker from Storz, and either "laser scrapes" set at 50 microns in the PTK mode using the VISX Star laser, or uses the Visitec or Ascio scraper for mechanical removal, removing the peripheral epithelium first.

Dr. Lindstrom believes that the LASIK suction ring and the Chiron corneal shaper or Hansatome are still the "gold standard" for LASIK. He applies suction slightly nasally, and checks for adequate pressure/suction by multiple methods (sound change, 25 on scale, lifting up on eye, asking the patient about blurring vision, and applanation). It is critical to control surface hydration, especially in hyperopic LASIK. This may be achieved by uniform surface preparation and time to ablation, controlling room temperature and humidity, and keeping the second eye taped when performing bilateral surgery.

Patient fixation is usually better than either surgeon fixation or relying only on an eye tracker. Dr. Lindstrom waits for 3-5 min. or air drying to seal the flap, and checks for a positive corneal striae test. Postop hydration with artificial tears may prevent haze, as will a contact lens in the case of an epithelial defect. Patients are seen at 1 day and 1 month postop, and told not to swim for 2 weeks.

Regression or "fade" according to Dr. Lindstrom after LASIK is in the range of +/- 0.50 D from 1 day to 1 month, and again from 1 month to 3 months, after which the regression stabilizes at 0.10 D per year.

Dr. Lindstrom listed some "clinical pearls" regarding LASIK. For up to 4D, LASIK patients usually see 20/25 or better on day one. Up to 8D, they are 20/40 or better on day 1. Over 12D, the recovery is slower, and one must be more careful with bilateral surgery.

Dr. Lindstrom predicted that PRK "can not survive" or compete with LASIK, both due to patient satisfaction/word of mouth, and economic factors. He likens LASIK to phaco and PRK to ECCE, and predicts that, like phaco, LASIK will eventually overtake and surpass ECCE in terms of popularity.