

Fewer Enhancements Equals More Happy Patients

By combining quality refractive technologies, one surgeon reduced his enhancement rate to less than 2%.

BY LOUIS E. PROBST, MD

Those of us who have been performing LASIK for a long time know instinctively that retreatment rates have dropped radically. Not too long ago, enhancements were a significant part of my surgical schedule. Today, it is not unusual for me to get through a full day or week in the OR without performing one.

To quantify this trend, I analyzed my retreatment rates for more than 15,000 procedures completed between August 2004 and August 2007. I performed all of the procedures at TLC The Laser Eye Centers in Chicago; Madison, Wisconsin; and Greenville, South Carolina. In 2004, my enhancement rate was approximately 5% to 6% (Figure 1). During the next 3 years, it plummeted to less than 2%.

This change has brought dramatic benefits to my patients and my practice. Based on my experience, by approaching patients in the right manner and adopting the most advanced laser vision technology (and sometimes abandoning others), surgeons can reduce retreatment rates and increase the number of happy patients.

DEFINING ENHANCEMENTS

TLC's data analysis system identifies an enhancement as any retreatment performed within the 12 months during and after a specified 6-month window of primary treatments. Some of the patients who had surgery toward the end of each 6-month period may have received an enhancement that was not recorded in this

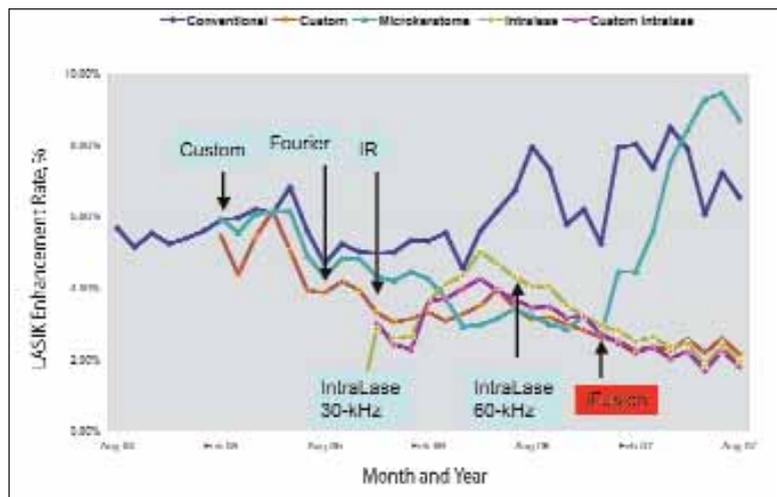


Figure 1. The author's LASIK enhancement rates by type of laser used from 2004 to 2007.

analysis. I believe, however, that my investigation includes most of the enhancements I performed between 2004 and 2007.

Ideally, 100% of my patients would achieve UCVA's of 20/20 or better the day after surgery. I believe we refractive surgeons are edging closer to that goal. Those happy patients will be great spokespeople for LASIK and for my practice in the future.

MAKING PROCEDURAL CHANGES

My analysis of retreatment rates represents every procedure at least twice—once on the customized or conventional line and once on the microkeratome or femtosecond laser line (Figure 1). These divisions illustrate the influence of different technologies on the rate of

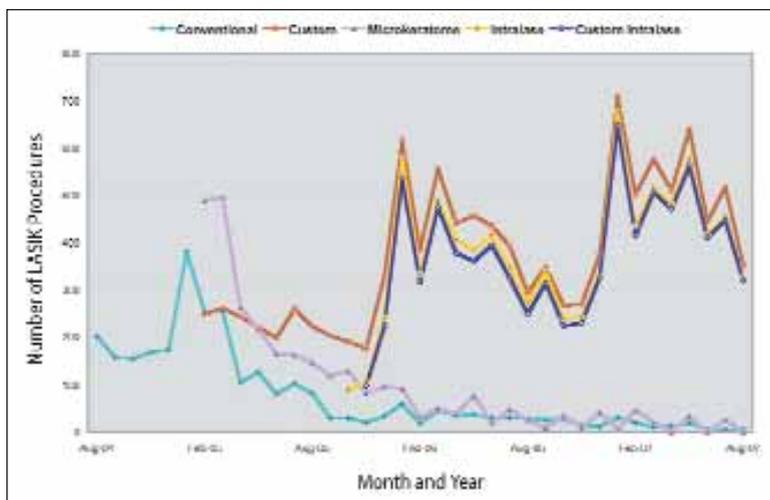


Figure 2. The author's LASIK procedure types and numbers.

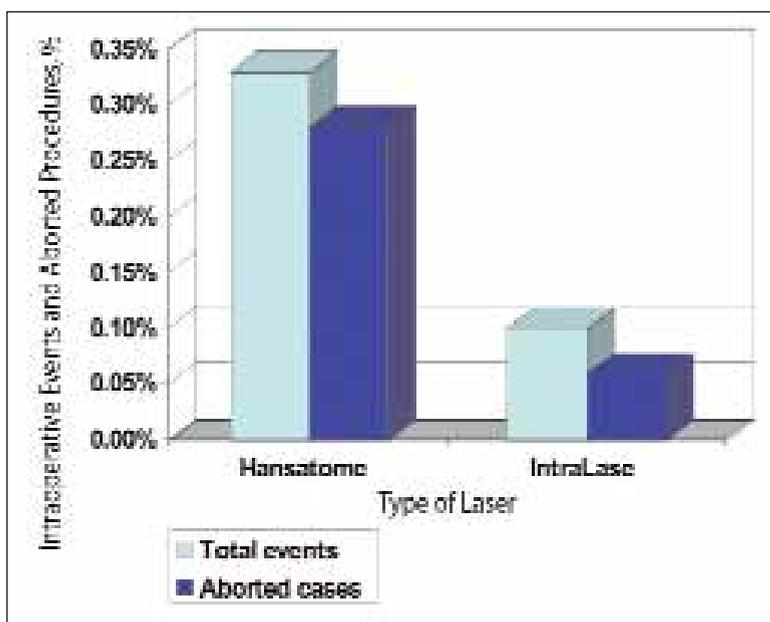


Figure 3. Intraoperative events and aborted procedures at all TLC laser centers from January 1, 2006, to June 30, 2007.

retreatment. Readers should also keep in mind that the number of customized procedures I performed was increasing and the number of conventional procedures was declining during the tracked period (Figure 2).

By the end of 2005, few of my patients opted for a conventional ablation. Most of those who chose the older treatment modality did so because they were not eligible for a customized procedure. They may have had unusually high prescriptions, or perhaps they were difficult to measure with the Visx WaveScan Wavefront system (Advanced Medical Optics, Inc., Santa Ana, CA) and therefore probably already skewed toward a higher retreatment rate anyway.

CONVENTIONAL TO CUSTOMIZED

I no longer perform conventional procedures. Gradual improvements in laser vision technology and my technicians' skills allow me to measure almost every eye with the WaveScan. I am starting to make more adjustments to the treatment plan for higher corrections. If the patient's cornea is not thick enough for the planned customized ablation, I prefer to decrease the ablation's depth by adjusting its zone rather than move to a conventional procedure. With this approach, the patient still benefits from the correction of higher-order aberrations, iris registration, and other customized technology, as I can use customization in every case, which is associated with fewer enhancements.

MECHANICAL MICROKERATOME TO INTRALASE

The decline in the rate of conventional procedures in my practice was accompanied by a reduction in the number of those in which I used a mechanical microkeratome. Beginning in January 2007, when TLC changed its pricing model to bundle flaps created with the IntraLase FS laser (Advanced Medical Optics, Inc.) with customized ablation, virtually every patient who chose one technological upgrade received both (this is represented in Figure 2 by the "iFusion" or Custom IntraLase line). By default, a microkeratome created the flap in every conventional case.

Customized and femtosecond technologies seem to have a symbiotic effect in reducing enhancement rates. The IntraLase subgroup, which underwent customized procedures, had the lower enhancement rate. Conversely, the number of conventional and microkeratome procedures were so small that the enhancement rate for those lines looks disproportionately high (Figure 2).

I think the main benefit of flaps created with femtosecond lasers, however, is safety. I believe the Hansatome microkeratome (Bausch & Lomb, Rochester, NY) is the most commonly used mechanical microkeratome in TLC centers. When I compared the rate of intraoperative events and aborted procedures with the femtosecond laser and this microkeratome, the differences were

THE POSTOPERATIVE EXAMINATION: DR. PROBST'S PEARLS FOR REDUCING ENHANCEMENTS**SKIP THE AUTOREFRACTION**

The autorefractor always shows a prescription, which is interpreted by the patient as imperfection. Because this device does not provide useful information after LASIK, eliminate it from your examination.

OPTIMIZE THE EXAMINATION'S CONDITIONS

Examine the patients' visual acuity in a dark room. Use a bright, well-focused projector to give the patient the best opportunity to see the chart.

START AT THE 20/80 LINE

If you have perfectly happy patients begin at 20/25 and they have to go up a line, you may rain on their parade.

DO NOT TEST BEYOND 20/20

If 40% of patients see 20/15, 60% cannot. Although 20/10

vision is fantastic, 80% of patients cannot read that line. Celebrate patients' success instead of qualifying it.

USE CAUTION WHEN ENHANCING A 20/25 EYE

You could easily make someone's vision worse. I tell patients, "You have a 10%/20%/50% chance of having worse vision after an enhancement. Only you know how much this is bothering you and your risk tolerance."

LET THE PATIENT DECIDE

If I strongly discourage a patient to pursue an enhancement or refuse to perform one, he may interpret my actions as a lack of concern or an unwillingness to absorb the cost of additional surgery. If the patient makes an educated decision to forego an enhancement, I find that he is more likely to perceive me as his ally than as an obstacle to success, and he is more willing to maintain a positive relationship with me.

notable. The rate of intraoperative flap-related complications, while certainly low in both groups, was more than three times higher in the Hansatome group (Figure 3). Also, when a flap-related complication occurred intraoperatively in the microkeratome group, I was more likely to abort the procedure than one that occurred in the IntraLase group.

HOW TO AVOID ENHANCEMENTS

In order to get the best possible outcome from laser vision correction, it is important to compare patients' manifest and wavefront refractions, to look for the best equivalent between the two, and to ensure a good match of the axis of cylinder between the two measurements. The latest software upgrade for the WaveScan (version 3.9) simplifies this process by automatically comparing the refractions. I also slightly adjust the nomogram based on age by adding -0.25 D for patients under 25 years of age and subtracting -0.25 for patients older than 40.

Certain types of patients (including hyperopes, candidates for monovision, wearers of hard contact lenses, and individuals 60 years of age or older) are more likely to require an enhancement after laser vision correction. Although I have not stopped treating such patients, I am more careful about scheduling them for surgery, as the risk of enhancement might be slightly higher. Because these patients are harder to please and are more likely to need an enhancement, they therefore

may not promote my practice by word-of-mouth advertising.

IN SUMMARY

The way in which surgeons and staff communicate with patients plays an important role in patients' perceptions of their results and their desire for an enhancement. I believe ophthalmologists should gear the entire postoperative examination toward setting patients up for success and congratulating them on the improvement in their vision (see *The Postoperative Examination: Dr. Probst's Pearls for Reducing Enhancements*).

The components of the procedure that surgeons now call iLASIK (Visx CustomVue laser vision correction [Advanced Medical Optics, Inc.] and the IntraLase FS laser) represent a win-win situation for patients and surgeons. I find that customized wavefront-guided surgery significantly reduces the likelihood that patients will need an enhancement procedure, and creating the flap with the femtosecond laser decreases the chance that the procedure will be aborted due to an intraoperative complication. By using the most advanced technology, we surgeons can minimize retreatments and maximize the number of happy patients. ■

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