



HOW FAR WE'VE COME

What a great reality we are experiencing today in refractive surgery. We've come a long way from the mid-1990s, when refractive surgery was in its infancy and we were just learning how to perform PRK with the broad-beam excimer lasers available at that time. The evolution of laser vision correction (LVC) techniques and technology is astounding. The very sophisticated tracking mechanisms of modern laser systems help to create extremely precise ablations and even compensate for potential cyclototation.

In addition to the improved quality and expertise that refractive surgeons can provide to patients through not only LVC but also lens-based correction, we can now ensure that they are offered solutions customized to their visual needs. And although surgeons' personal preferences may lean toward PRK, LASIK, or SMILE—and certainly toward refractive lens exchange for higher refractive errors and in patients over the age of 45—we must all agree that it is better to promote the whole specialty rather than tout one procedure over another.

Lately, I have returned to performing refractive surgery on the surface using the mini-PRK technique known as *epi-Bowman keratectomy*. When topical bromfenac 0.9 mg/mL is prescribed, the major shortcoming of PRK—pain on the first postoperative night—is virtually eliminated. Further, patients' UCVA is essentially 20/20 when they stand up from the laser table, and most experience reepithelialization by day 3. Approximately 40% to 50% of the refractive procedures that I currently perform are PRK, and 50% to 60% are LASIK.

Another change in my treatment paradigm is that my indications for phakic IOLs have broadened. In patients with more than 8.00 to 9.00 D of myopic spherical equivalent, I currently lean toward the EVO Visian ICL (STAAR Surgical). Considering the long-term prognosis for the cornea, a laser refractive intervention for such high refractive errors would involve significant and permanent changes.

In my experience in Greece, female patients with high myopia tend to have clinically significant cataracts before the age of 60. I prefer a phakic IOL for this population, too, and I think we can all agree that, optically, it is better for

patients to have their naïve corneal curvature parameters at the time of cataract surgery. We must also consider the availability of IOLs on the horizon, which promise to provide patients with equivalent or even better vision than we can currently guarantee.

Finally, our ability to perform customized ablations is incredible. For many years, we have pushed the envelope to combine subjective measurements—the gold standard of refractive error—with objective topographic data. For the past decade, I had relied on a topography-modified refraction technique, but during the past year I began to use ray tracing, which essentially affirms our ambitions and perseverance in pushing for a mix of subjective and objective refractive error data. Ray tracing uses artificial intelligence and eliminates the human error factor. In my opinion, it has the potential to become the new gold standard in LVC for both LASIK and PRK.

We are all now back in practice after our annual summer recesses—which tend to be quite long and enjoyable in Greece—and are applying these fascinating new technologies and principles in practice. We put so much time, effort, and thought into offering solutions to our patients that provide them with the best care. And during the COVID-19 pandemic, we must do so with heightened protective measures.

This pandemic could turn out to be one of the strongest indications for LVC that we see in the next few years because the use of contact lenses poses not only significant corneal dangers but also significant risk for exposure to the virus.

I look forward to seeing you virtually in these coming months, but I hope that in-person meetings resume in the very near future. Let's get back to shaking hands (or bumping elbows), sharing smiles, and advancing excellence in ophthalmology. ■



A. JOHN KANELLOPOULOS, MD

ASSOCIATE CHIEF MEDICAL EDITOR