

LASIK Volume and the Future of Refractive Surgery

There is no treatment on the horizon to replace LASIK; but will procedure volume bounce back with the economy?

BY JORGE L. ALIÓ, MD, PhD; AND PETTER PETERSEN, MD

As a supplement to the interview with James V. Mazzo on page 19, CRST Europe invited two surgeons to comment on the prospects for refractive surgery, specifically LASIK, during and after this economic downturn. We also invite you to contribute your thoughts on LASIK and the economy, your approach to maintaining your procedure rates, and the future of refractive surgery in a letter to the editor.

JORGE L. ALIÓ, MD, PhD

LASIK volume has decreased worldwide because of the global financial crisis and a resulting drop in patient or customer demand. I say *customer* here because we are discussing the business of LASIK, and LASIK may in some ways be considered a commodity. As with other commodities, demand for LASIK has decreased in response to the current poor performance of the worldwide market and the resulting decline in people's disposable income. LASIK volume is down substantially in many markets, if not all—probably 20% to 30% in Spain and other parts of Europe on average.

In my opinion, this decrease will be long-lasting, and LASIK will never regain the volumes that were seen in the past. This is not entirely because of the economic downturn, however; it also has to do with the exhaustion of the available patient base. Excimer laser surgery appeared at a time when the only well-studied refractive surgical procedure available was radial keratotomy for myopia. The excimer laser quickly proved to be an effective tool, even with the primitive lasers that first appeared in the late 1980s. In response to the introduction of LASIK, a large group of patients that had been waiting for an alternative solution to myopia availed themselves of refractive surgery. They were especially attracted to PRK and LASIK because both were performed with high-technology lasers and other equipment. This led to a tremendous increase in refractive surgery

volume in the late 1980s and 1990s. But now this group has already largely passed through our clinics, and there is no group of equal size to replace it.

I believe the laser refractive surgery market will revive—but never to those earlier levels. Part of the revival will come through the interest of young people. With long-term results now showing that PRK and LASIK are safe and stable,¹⁻⁴ we may ethically offer excimer laser surgery to late adolescents—patients 18 years of age or even younger. Young people in the late teenage period have strong motivations, psychologically and sociologically, to avoid the use of spectacles. These individuals will be interested in the now-mature alternative of laser refractive surgery. Probably for less money than they would spend on glasses or contact lenses, they can have LASIK and perhaps a touch-up in 10 years or so if their refraction changes. With the social pressures of adolescence, it makes more sense for these patients to take advantage of the surgery rather than wait 10 years to be sure vision is stabilized. We have the tools now to accurately diagnose and safely treat these patients.

On the other hand, as the newest technologies become increasingly expensive, LASIK will probably become a segmented market. Older patients with higher incomes and higher expectations will prefer high-quality customized LASIK at a premium price, and younger patients will probably opt for noncustomized standard LASIK for low

hyperopia or low myopia at a more accessible price. In my opinion, these two segments of the market will clearly exist in the future, although the average-quality noncustom procedure may not survive in the long term. Competition in terms of quality is not possible in health care. Patients expect high quality, even if they want a low or moderate price.

The other factor that will increase the potential market for excimer laser refractive surgery will be the expansion of its frontiers with the introduction of technologies and refinements of current technologies. These advances will allow the treatment of indications previously excluded—higher degrees of myopia, hyperopia, and astigmatism and the correction of presbyopia, for which there is currently no satisfactory surgical modality. However, patients with higher degrees of refractive error are less numerous than those with lower refractive errors, so they will not completely fill the gap that has been created by the overall decline in the market.

Another modality that may offer an alternative or a complement to laser refractive surgery in the future is phakic IOLs. Phakic IOLs can treat refractive errors outside the range of excimer laser surgery, and they are accurate, stable, and reversible. Additionally, we now have diagnostic tools, such as the Visante OCT (Carl Zeiss Meditec, Jena,

Germany) and other devices, to ensure proper and safe patient selection. With increasing demonstration of the clinical success of these lenses, even conservative companies are bringing new phakic IOLs to the market.

However, before we see wide acceptance of phakic IOLs as an alternative modality, in my opinion their prices must be brought down to levels comparable with excimer laser surgery. Current phakic IOLs can be almost double the cost of laser surgery. Ideally, we should be able to offer our patients high-quality alternatives that are in the same general range in terms of financial costs. In my opinion, phakic IOLs will have a brilliant future if their prices are comparable with that of a high-technology customized LASIK procedure. Phakic IOLs will especially allow treatment of medium to high myopia, with visual recovery as fast as LASIK if the surgery is done well. This alternative to LASIK will help increase the overall success of the refractive surgery market, as long as it is affordable for patients.

PETTER PETERSEN, MD

The financial crisis is just as serious in Northern Europe as it is in North America and elsewhere, but currently, our region has not seen a resulting decrease in LASIK volume. LASIK procedure volume increased steadily in Norway until

2006, and then the curve flattened. Volume has been stable for the past 3 years—at approximately 15,000 procedures a year in our population of 4.5 million. This is roughly equivalent to the volume of LASIK in the other Nordic countries.

I practice in a chain of clinics called Memira, a major Northern European LASIK chain with 33 clinics across the Nordic countries. It may be that operating as part of a chain offers some protection from economic ups and downs. For one thing, because of our volume and number of centers, we get good service at a reasonable cost from the companies that sell us lasers and other devices. Also, if business is slow in one region, we can still operate in other regions. For instance, there has been a slight decrease in the volume of procedures in the southwest part of Norway, where the economy is highly dependent on oil; in other parts of Norway, basically no change has occurred.

On the other hand, our region is probably currently saturated with the maximum number of lasers and clinics the market will bear, which may be why we have not seen any increase in procedure volume in the past 3 years.

One possible route to increasing LASIK volume in the future may lie in the ability to offer the procedure to a broader range of patients. Currently, most of our LASIK patients are in their mid-30s, around the age of 35 years. We are hoping soon to add presby-LASIK to our repertoire of procedures, thereby allowing us to offer the procedure to older patients. Currently, older presbyopic patients, in the range of 55 years of age, are the most common candidates for refractive lens exchange (RLE). Younger patients just entering the presbyopic phase, in their early 40s, are generally not interested in RLE. They want LASIK because it is well established, it is easier and less expensive for the patient, and it offers rapid visual rehabilitation and a lower level of surgical risk. When we are able to offer presby-LASIK to our presbyopic patients, I believe it will be widely accepted. We will probably perform more presby-LASIK procedures in patients from 40 to 60 years of age and less multifocal RLE in this population. At the same time, we will probably do the same amount of RLE, if not more, in patients aged 60 years and above. I do not think presby-LASIK will replace RLE in all age groups; it is unwise to perform presby-LASIK in a patient who will soon develop a cataract. But for most early presbyopes who do not want to go through an invasive multifocal RLE, and/or have astigmatism, presby-LASIK will be the faster and cheaper option. Presby-LASIK will offer the possibility to correct spherocylindrical aberrations and presbyopia in both eyes in the same session.

There is no other procedure on the horizon to replace LASIK at this time. On the contrary, as our lasers improve, we are able to offer LASIK to increasing numbers of patients. With the thin flaps now possible with improve-

ments in femtosecond laser technology, we can operate on a greater range of refractive errors. Flap creation is now safer with femtosecond lasers than it was with blade-based microkeratomes. Now, with new technology on the Femtec femtosecond laser (Technolas Perfect Vision, Heidelberg, Germany), the intraCOR procedure is showing promise for total intrastromal ablation. However, that technology is still being evaluated, so we will have to wait to see its potential for clinical application.

We are also increasingly seeing a group of much younger patients—20-year-olds—interested in LASIK. Until a few years ago, we did not often see patients in this age range, principally because they typically do not have the money for the procedure. For some reason(s), however, more of them are expressing interest in LASIK. It may be that more are living at home and therefore have disposable income. It also seems that their parents, who are in the baby boomer generation of the 1950s and 1960s, are familiar with LASIK; when their children express interest in contact lenses, they offer to buy the laser treatment for them. We are reluctant to perform LASIK in young patients; we do treat people as young as 18 years, but we try to counsel them to wait a few years.

Meanwhile, their baby boomer parents have generally grown up being used to getting what they want. They have a hard time accepting the reality that they need spectacles for reading. They connect that image with old people, and it does not fit their youthful and active self-image. Opticians have started to sell a lot of multifocal PureVision contact lenses (Bausch & Lomb, Rochester, New York) to people in this age range, and they have been successful. Therefore, increasing numbers of people now come to us wanting to get the same treatment, so to speak, done on their cornea. We look forward to being able to offer these people presby-LASIK in the near future. ■

Jorge L. Alió, MD, PhD, is Professor and Chairman of Ophthalmology, Miguel Hernandez University, Alicante, Spain, and Medical Director of Vissum Corp. Professor Alió may be reached at tel: +34 96 515 00 25; e-mail: jlalio@vissum.com.



Petter Pettersen, MD, practices at the Memira clinic in Norway. Dr. Pettersen states that he has no financial interest in the products or companies mentioned. He may be reached at tel: +47 934 208 81; e-mail: petter.pettersen@gmail.com.



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