Excimer lasers are used today practically all over the world to treat refractive errors. This provides us with a wealth of data and findings that must be analyzed, presented, interpreted, and discussed. One major finding is already certain: the absolute and indisputable necessity of refractive surgery. Even those who are skeptical about refractive surgery must accept this. Patients simply do not care about the ethical or other misgivings of ophthalmologists. People who suffer from refractive errors seek and desire a treatment. By definition, they are patients and not clients. We should not ignore this, but rather accept it; in fact, they are calling on us to help them.

It is therefore our duty to discuss not just skeptically, but positively, any method which significantly alleviates or cures the problem of refractive errors and poses the smallest possible risk, especially where this involves a surgical method.

If one looks at recent issues of journals that contain articles on refractive surgery, one finds almost exclusively reports on the change and treatment of the cornea. Without dwelling too much on the interpretation of these reports and findings, one is left with the impression that corneal refractive surgery and especially excimer laser treatment—photorefractive keratectomy (PRK) and laser in situ keratomileusis (LASIK)—today constitute the major sensible approach to curing refractive problems in patients who cannot tolerate spectacles or contact lenses any longer. This is underlined by the fact that in the strongly represented corneal refractive surgery lobby, excimer laser treatment has, in an amazingly short time—a decade—largely displaced refractive keratotomy, despite its 20 years of successful use. There are certainly many reasons for this. The good results achieved using computer-controlled lasers—one of the magic word combinations of our time—is, in our highly communicative world, no doubt the major reason for its success.

The group of scientists who make extensive use of phakic intraocular lens refractive surgery has traditionally been very small. One of the great surgeons of our time, Joaquin Barraquer, even failed initially with this approach. Although the idea of curing refractive problems by means of built-in or integrated additional optics (built-in glasses or contact lenses) sounds very logical, the results to date have not been encouraging if one disregards clear lens extraction. Despite the well-known setbacks of Strampelli, Barraquer, Momose, and Choyce, individual scientists continued to pursue this idea. Critical analyses, combined with anatomic understanding and recognition of today's technical possibilities, never allowed the idea of phakic lens implantation to really die. Three different scientists pursued three different anatomical concepts for phakic intraocular lenses at roughly the same time: Baikoff saw a solution in the angle-supported anterior chamber lens; Fechner developed another solution in the modification of Worst's iris fixed claw IOL; and, Fyodorov implanted a silicone lens into the posterior or chamber.

Why, of all people, is Fyodorov looking for a new solution? Is he not one of the fathers of refractive keratotomy and hence, highly experienced in corneal refractive surgery? Has he not developed lasers to reshape the cornea? Does he believe that corneal refractive surgery only solves a small subset of a huge range of questions? Does corneal refractive surgery not provide predictable results? Given Fyodorov's truly long experience, is he concluding that the cornea, after all, is only to be regarded as a second choice for dealing with refractive problems in the future, or should we not be treating this most precious window of the human body?

Only a convinced lens refractive surgeon such as myself, who nevertheless could not get by without the benefits of corneal refractive surgery, is in a position to ask such provocative questions. Where should corneal refractive surgery end and lens refractive surgery begin in treating myopia, hyperopia, and astigmatism? Even if today neither has a satisfactory answer to all refractive issues, the results obtained using phakic IOLs are acceptable today, especially in relation to the main issue in refractive surgery, namely postoperative uncorrected visual acuity and quality of vision, which are often better with IOLs. Is this the reason why Emanuel Rosen, in his Journal of Cataract and Refractive Surgery editorial of June 1977, asks, "How wise is it to reduce the cornea, arguably the healthiest part of a myopic eye, by a significant amount?"
Chiron under the trade name NuVita (MA20). Initial empirical reports by Marinho with this phakic IOL at the European Society of Cataract and Refractive Surgery meeting in Prague confirm the correctness of the analyses undertaken by Baikoff, especially with regard to halos, glare, and stability of refraction. Loss of endothelial cells, which in the Baikoff ZB5M IOL was already significantly small, will probably be less. Whether ovalization of the pupil will occur with the new design requires longer observation.

Two articles by Zaldívar, Davidorf, and colleagues (Zaldívar R, Davidorf JM, Oscherow S. Posterior chamber phakic intraocular lens for myopia of -8 to -19 diopters. J Refract Surg 1998;14:294-305; Davidorf JM, Zaldívar R, Oscherow S. Posterior chamber phakic intraocular lens implantation for hyperopia of +4 to +11 diopters. J Refract Surg 1998;14:306-311) describe results obtained with a plate phakic posterior chamber lens by Staar, up to 3 years after implantation. The fundamentally new properties (hydrophilic, high refractive index, curved design) of the enhanced Fyodorov-style implant likewise show very good tolerance as well as good postoperative uncorrected visual acuity, both in myopic and also in hyperopic patients. It seems remarkable that this phakic posterior chamber lens is on all important points (stability of refraction, visual acuity outcome, postoperative follow-up) currently the most reliable way of correcting hyperopia. My own findings confirm this fully.

Four years after implantation of this new phakic posterior chamber lens, few lens-related cataracts and rare pupillary block glaucoma have been observed. Zaldívar et al describe surgically induced pigment dispersion, which is not progressive and becomes phagocytosed over time.

Trindade from Brazil reported his ultrasound biomicroscopic findings with the Staar plate phakic posterior chamber lens in six eyes at the European Society of Cataract and Refractive Surgery conference in Prague. In all eyes, he observed contact between the iris and the IOL and in some eyes, between the IOL and the crystalline lens in the midperiphery. He did not report any IOL-induced cataracts, least of all in the observed areas of contact, or induced pigmentary glaucoma. He also found a reduction in anterior chamber depth and localized narrowing of the angle opening without any change having occurred in the intraocular pressure.

One finding in Zaldívar's articles seems significant. Iridectomy is mandatory when implanting a plate posterior chamber IOL in phakic eyes if an IOL-related pupillary block is to be avoided. It also occurs, albeit rarely, with an angle fixed Baikoff IOL and is always a severe postoperative complication.

Zaldívar's forthcoming article on the bioptics procedure for extreme myopia of combined phakic IOL and LASIK (Zaldívar R, Davidorf J, Oscherow S. Combined posterior chamber phakic intraocular lens implantation and laser in situ keratomileusis: The bioptics procedure for extreme myopia. J Refract Surg, in press) is a very new and important contribution to refractive surgery. As well as his gratifying results, his article describes how we still have a considerable way to go in refractive surgery. So long as the treatment of patients with extreme refractive errors exposes them to double the risk—the risk associated with both the cornea and IOL—the optimum techniques, which must be our goal, has not yet been attained. Both methods will therefore have to be developed further and merged into a single method. This will mean the range of refractive surgery will become even greater and it is likely that we will have a solution for virtually every refractive problem in the next decade. In the future, the refractive surgeon will have to master both corneal and lens refractive surgery.

Seen from this vantage point, it seems more than logical that there should now be calls for very tight and definitive guidelines for publications on refractive issues. It is often very difficult and time consuming to read, understand, and compare these papers. Standards for special tables, illustrations, diagrams, and criteria must be specified as a matter of urgency so that the different publications and presentations of refractive methods and findings can be fundamentally better, and more rapidly understood and compared. Standardization is, in my opinion, urgently required, as has been emphasized by Waring (Waring GO. Standardized data collection and reporting for refractive surgery. Refract Corneal Surg 1992;2(suppl):1-45).

**Are the Sirens Singing Again?**

Charles Kelman, MD

Just as the ancient Greek Sirens enticed sailors to approach shallow, rock-strewn shores, and watched the ensuing destruction with glee, so too modern Sirens beckon eye surgeons into the treacherous