Promising New Technology and a Word of Caution

The lead article in this issue of the Journal by L'Esperance and co-authors Taylor and Warner, "Human Excimer Laser Keratectomy: Short-Term Histopathology," describes the first attempts at excimer corneal surface ablation in the blind eyes of human volunteer patients. This work, following the preliminary work by McDonald and Kaufman on rabbits and primates, moves refractive surgery a step closer to applying this exciting technology on patients with refractive errors.

This preliminary work continues to look promising, but many questions remain unanswered. Will the corneas remain clear? Will the epithelium remain intact and healthy over the ablated area without a Bowman's membrane? Will there be late problems with recurrent erosions or keratitis? How accurate will the procedure be? How much of the corneal stroma will need to be sacrificed to correct high refractive errors? What will be the quality of the patient's vision in terms of glare? Will there be unforeseen future complications? Will the expense of this "space age" technology place the procedure beyond the reach of most patients and refractive surgeons? L'Esperance et al are cautiously moving ahead, and their work and those of others will surely answer many of these questions.

The article by Cunanan, Buchen, Nordquist, and Knight, "A Comparison of Four Shipping/Storage Methods for Epikeratophakia Lenses: Results of Laboratory Studies," is an excellent scientific study of the possible methods of preserving and storing lamellar corneal tissue. The article by Barrett and Moore describes a new method for lathing corneal lenticules.

And now for a word of caution. Villaseñor's and Stimac's "Clinical Results and Complications of Trapezoidal Keratotomy," deserves special attention by our readers. It has become clear that keratotomy incisions that intersect or cross each other are accompanied by an unacceptably high risk of serious complications and should be avoided. This article emphasizes this principle with a review of the authors' experience with trapezoidal keratotomy, where the innermost transverse incisions connect with the semiradial incisions.

The article by Simons, Linsalata, and Zaragoza, describing the tragic rupture of a globe with loss of the eye approximately 1 month after a four-incision radial keratotomy emphasizes the fact that the post-RK globe is definitely weakened in the immediate postoperative period and may well be permanently weakened. Since reading this article I have been advising all my post-RK patients to be certain to wear protective eyewear when engaging in activities with an increased risk of ocular trauma, such as all racquet sports and basketball.

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