letters

Biaxial phacoemulsification

Usually, I am not obsessive about terminology use in ophthalmology. Well, not unless the terminology involves ophthalmic viscosurgical devices.[1] However, one of the most personally irritating nomenclature issues to arise in ophthalmology involves the naming of what should be called "biaxial phacoemulsification."

Traditionally, we have all performed coaxial phacoemulsification for years, as first taught to us by Kelman. When it appeared that separating irrigation from aspiration was going to work, new, lofty, meaningless terms sprouted forth like wild flowers in spring. The following are a few examples, with the reasons they are inappropriate:

1. Phaconit (phaco using needle incision technology). We always used needle incision technology. It is simply a matter of the size of the needle.
2. Microincision (or micro-) phaco. Our current coaxial phaco is micro compared to what we did before we had foldable IOLs, and undoubtedly future technology will make current microphaco seem macro. Micro is relative in this use, with no enduring standard, and therefore meaningless.
3. Bimanual phaco. Well, I use both hands and both feet in all variations of phaco that I perform. Perhaps I should call my technique "quadrilimb phaco," "quaddextrous phaco," or some such thing.

The point is that all these terms are meaningless, except that they may sound good, unless you think about it. None of them differentiates the procedure under discussion from coaxial phaco. However "biaxial phaco" clearly refers to the fundamental difference in the procedure separating it from coaxial phaco. Biaxial makes no specific reference to incision size, which undoubtedly changes over time; does not imply lack of dexterity of coaxial surgeons; and is not a mixed, obscure acronym. Biaxial is simply what is different from coaxial in biaxial phaco. The rest is left to innovators of the future.

If your curiosity of nomenclature is still not fully satisfied, may I recommend Simon Winchester's *The Professor and the Madman*,[2] a marvelous story of those who contributed most to the writing of the first edition of the Oxford English Dictionary, the eternal "bible" of English usage. The madman was a brilliant, most eccentric American. The rest you'll have to read for yourself.

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Combining wavefront and topography data

I was interested to read the enlightened editorial espousing the value of combining wavefront and topography data for excimer laser surgery.[1] I wholeheartedly support the opinions expressed in the editorial and share the view that there is a high likelihood that refractive outcomes, particularly in eyes with large irregularities, would be improved if excimer laser technology were guided by optimized wavefront and topography data. I also agree that further studies to substantiate this concept are required.

I suggested the concept of combining corneal and refractive data for excimer laser treatments in 1993[2] and gave detailed descriptions for symmetrical treatment in 1997[3] and for asymmetrical applications in 1998.[4] This customization technique for using optimized parameters for both sets of preoperative data, refractive and topographic, is termed *vector planning*. The consequences of disregarding corneal topographic astigmatism data from the treatment plan has been examined in a paper on astigmatism outcomes[5] and discussed further in a recent editorial.[6] The technique of combining wavefront and topography data has been described in detail in several recently published texts.[7–11]

Until recently, I have been somewhat of a lone voice explaining the concept of using both corneal and refractive values in laser treatments. The mathematical foundations of the process required the development of computer software to address the complexities of combining wavefront and topographical data. I applaud the further discussion of the opportunities that vector planning and other advanced techniques provide for our more difficult patients.

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Reply: I appreciate the insights in Dr. Alpins' letter and certainly want to acknowledge his original contributions to the use of topography data to modify wavefront-guided treatment parameters.—*Thomas Kohnen, MD*

Subepithelial scarring after laser-assisted subepithelial keratectomy

The case report by Mirza et al.[1] on the treatment of dense subepithelial corneal haze after laser-assisted subepithelial keratectomy (LASEK) raises a number of points regarding this treatment, particularly the use of LASEK to perform bilateral simultaneous surgery in highly myopic patients. Those of us who performed surface photorefractive keratectomy (PRK) in the early days (I have been performing excimer laser refractive surgery since 1992) will recall that it was sensible to wait at least 3 months before treating the second eye, particularly in patients with more than −6.0 diopters (D) of myopia. The main reason for the delay was to ensure that the initial healing process had stabilized sufficiently that scarring and regression were unlikely to occur in the first eye before the second eye was treated.

In my early days of PRK, I had more than a handful of patients similar to the one described by Mirza et al. who regressed completely with associated scarring and significant loss of best corrected visual acuity. Early signs of the regression and haze/scarring generally became apparent within 2 to 3 months of the initial surgery. In the pre-mitomycin days, waiting and attempting phototherapeutic keratectomy was all that could be done; but, certainly, it was deemed prudent and the best practice not to attempt to treat the second eye.

I am yet to be convinced that LASEK is different than PRK, although I use it in selected patients with good results. In 12 years of laser refractive surgery, I have felt the need to perform surface laser bilaterally and simultaneously in only 3 patients (all with low myopia), while almost 20% of my LASIK patients have bilateral simultaneous surgery. I do not believe, however, that it is right to do bilateral simultaneous LASEK in highly myopic eyes (greater than −6.0 D). The risk to the patient is too great should they experience regression and scarring in both eyes, let alone the stress for the surgeon in trying to correct a bilateral loss of BCVA of the degree