Phacoemulsification Technique

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Every step of cataract surgery leads to the next; even all those little, seemingly banal steps must be performed perfectly so as not to affect the final result.

Only once a good valved scleral tunnel has been created in clear cornea, capsulorrhexis of a regular shape and size has been made, and perfect hydrodissection and/or hydrodelineation has taken place, does the key moment of the procedure arrive—phacoemulsification.

Before we begin, however, there are a few basic concepts that need to be clear:

1. Surgery is simplicity, necessity, elegance, and harmony of movement; all “Baroque” notions of it should be relegated to history.
2. A surgeon is like an airline pilot; he or she must have high intellectual and personal capabilities, manual dexterity, knowledge, the right attitude, and good hand–eye coordination (Figure 1-1).
3. Operating is like playing chess or pool; you need to know, plan, and “study” the moves needed for a successful result (Figure 1-2).

The stages involved must therefore be as follows:

1. **Knowledge:** Surgery is not based on manual dexterity alone. Without knowledge, what would it be? Results are based on a surgeon’s training and experience, which are irreplaceable. The study of the anatomy of the eye, of the pathology of cataracts, and the knowledge of surgical techniques and the machines and materials used (viscoleastic, etc) are essential elements.
2. **Observation:** The difference between theory and reality lies in the relationship between teaching and learning: a well-taught phaco procedure is better than a well-demonstrated procedure. In the latter, the sequence of events may appear to be completely natural and straightforward. It is, however, based on a full understanding of the logic behind every single step.

There are different phacoemulsification techniques, and knowledge of each of these is essential for both understanding various techniques and providing the ability to make decisions that match individual strategies when dealing with different types of cataracts.

Before emulsifying a cataract, we need to determine the variables that will provide the highest probability of a successful procedure; then we need to stop and ask: “What’s important now?” We need to be pragmatic and always remember to respect the anatomy and physiology of the eye.

A surgeon’s training must also include information on the past because the past will also help us understand the present and manage the future!

The ability to perform an extracapsular extraction, in the event it is necessary to convert from a phaco procedure that has become complicated, requires the mental maturity to make decisions and the manual ability to know how to enlarge the incision, to know how to use a loop, to perform an anterior vitrectomy, and how to suture.

All of these maneuvers are learned from manuals and books but perfected with practice. Just as the “workshop” was the learning ground where apprentices watched the...