Nonchopping phacoemulsification techniques, also known as nuclear-fracturing techniques, have facilitated cataract surgery immensely, allowing for safer and more efficient means of nucleus removal. The fundamental principle underlying all nuclear-fracturing techniques is the creation of “breaks” to divide the lens into smaller fragments for controlled removal through a small incision.

Gimbel was the first to propose a structured approach with the “divide-and-conquer” nucleofractis phaco technique. Other interesting fracturing techniques include chip and flip, down slope sculpting, and phaco sweep. By using these methods, phacoemulsification can be performed safely and successfully on nearly all types of cataracts.

I. KEY POINTS IN DIVIDE-AND-CONQUER TECHNIQUE

A. Phaco Settings

The initial nuclear groove formation requires the use of a moderate degree of phaco energy with low aspiration and vacuum settings. Quadrant removal requires higher aspiration and vacuum settings to allow the phaco tip to engage the lens fragments. (The surgeon should always confirm the settings prior to entering the eye.)

B. Grooving Technique

The goal is to create a sulcus that is 90% of the depth of the lens. The sulcus depth is the most important aspect for facilitating a complete crack at the base of the lens. Groove length is not as important and should not extend into the far lens periphery. A good rule of thumb is to limit the length of the groove to the length of the capsulorrhexis.

C. Cracking Technique

It is important to achieve a complete separation of the posterior nucleus. A complete crack of the periphery is not as important (leaving a portion of the cortex and epinucleus intact is not problematic). The phaco tip and second instrument must be positioned deep in the groove, and the second instrument