Biaxial technique offers stable chamber and safer procedures

While a lot of emphasis is often placed on the decreasing size of incisions, I think for me the main advantages of biaxial phacoemulsification are the improved safety for our patients and the enhanced stability of the anterior chamber.

“While there is much debate over the correct terminology used to describe the technique of cataract extraction by means of two paracentesis-type incisions, he personally favours Steve Arshinoff’s use of the term ‘biaxial phacoemulsification’.

First, with ICE, surgeons can vary the pulse duration of the burst for as long as required. The kick function also allows the surgeon to craft the burst of power for as short or as long a period as required. The surgeon can opt to keep the kick constant across the phaco power range or alter it so that it rises and falls as power increases, resulting in improved cutting efficiency.

Another important feature of ICE is the CASE (Chamber Stabilization Environment) technology that enables surgeons to optimise the use of fluids during cataract removal while significantly reducing surge on occlusion break. Within 26 milliseconds, the pre-programmed CASE settings proactively adjust vacuum before the occlusion breaks to significantly reduce chamber shallowing and helping to maintain chamber stability, said Dr Lesieur.

Microincision IOLs

Turning to IOLs currently available, Dr Lesieur cited the new MicroFlex (Physiol) as being particularly well adapted to biaxial microincision surgery. The MicroFlex is made of a 25% water-content hydrophilic acrylic material and can be injected through a 2.0mm incision. 

Summing up, Dr Lesieur emphasised that the crucial difference with a biaxial approach is not the size of the incision, but rather the separation of inflow and outflow. He added that the new tools and technology provide increased surgical control of the anterior chamber environment, maximise the efficiency of ultrasound and ultimately result in safer procedures for his patients.

“IOL is implanted through unenlarged incision

First, with ICE, surgeons can vary the duration of the pulse power and then add a burst of energy at the beginning of the ultrasonic wave to provide a ‘kick’ at the beginning of each burst.

Gilles Lesieur MD