New phaco tip design allows straight tip surgeons to perform torsional ultrasound

The chamber remained very stable during phaco with this new tip. Additionally, surgeons enjoyed the ease and benefits of 'straight tip' torsional ultrasound, with very efficient cutting and a lack of repulsion. The tip also allowed for excellent control, he said.

There are many reasons to aspire to using torsional ultrasound. This new modality breaks down lenticular matter through oscillating side to side movements of the phaco tip, uses less phaco energy than standard longitudinal ultrasound, effective for cataracts of all densities. It reduces turbulence, decreases ultrasound time, increases efficiency and offers a thermo protective benefit.

Oscillation of the tip provides a greater travel distance at the tip than it does with a straight shaft. The side-to-side movement of torsional phaco shears the lens material and provides decreased repulsion, while improving thermal safety, compared to traditional ultrasound. The surgical benefits of decreased repulsion are increased followability, reduced potential for turbulence, lower parameters, and increased cutting efficiency. Traditional ultrasound causes repulsion through its jackhammer effect, he noted.

As with the Kelman tip, the side-to-side movements of this new tip deliver increased cutting efficiency by emulsifying lens material with both directions of movement. Standard phaco only breaks down the lens in one direction. The longitudinal back-and-forth movements are therefore only effective in one direction, while generating thermal energy in both directions, with less efficacy. Because there is no forward motion of the bevelled tip, there is less chattering, as you find with traditional straight-tipped phaco.

Dr Osher's tip was released in April at the ASCRS meeting. There are a number of surgeons in the US who already prefer to use this tip, he noted. Interestingly, a Japanese colleague, Takayuki Akahoshi, MD, designed a tip with the same characteristics at about the same time as Dr Osher, unbeknownst to him, suggesting the need for a comfortable alternative to the Kelman tip for surgeons wishing to experience the advantages of torsional ultrasound.

The combination of new technologies offers the phaco surgeon a safe and reliable method of performing cataract surgery through an unenlarged 2.2mm incision through which a full-size, single-piece IOL can be safely implanted, he reported. Dr Osher was hopeful that for 70 per cent of the world's surgeons, who would like to use torsional ultrasound, this would allow them to continue using their same technique and enjoy the benefits of this new technology.