Capsular tension rings improve visual outcomes

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in San Francisco

CAPSULAR tension rings (CTR) remain in a stable position and lead to improved refractive outcomes in pseudophakic eyes with zonular instability, a two-part study from Oklahoma confirmed.

"This raises the question for us, should a CTR be placed in all eyes with zonular instability if the goal is to maximise refractive outcome?" said Jeffrey Boomer MD, Dean A McGee Eye Institute, Oklahoma.

In the first part of the study, the researchers performed ultrasound biomicroscopy (UBM) on 14 pseudophakic eyes of 13 patients with zonular instability who had undergone cataract surgery and CTR implantation to evaluate the CTRs stable anatomic position. The surgeons used the Morcher model type 14A CTR, which is a 14.5 mm ring.

The UBM found the CTR sitting stably between the intraocular lens haptic and the ciliary body without any posterior iris touch in all eyes. This finding led the researchers to the second part of their study.

"Considering this consistent relationship between the CTR and the IOL, we asked the question whether the ring has an effect on the refractive outcome in patients undergoing cataract extraction by phacoemulsification complicated by zonular instability," Dr Boomer told a session of the annual meeting of the ASCRS.

In addition, the results raised the question whether placing a CTR required the IOL calculations to be modified.

Retrospective study

The researchers selected three study groups for a retrospective case-control series. The first group consisted of 19 eyes of 19 patients with a mean age of 68.8 years who required CTRs in one eye. The second (control) group consisted of 24 eyes of 24 patients with a mean age of 69.1 years who underwent routine cataract surgery without complications.

The third group consisted of a subset analysis of nine eyes of nine patients from the CTR group with a mean age of 68.7 years who required CTRs in only one eye, but had zonular instability in both eyes. The contralateral eye with zonular instability without CTR insertion was used as an internal control.

David W Jackson MD, clinical assistant professor of ophthalmology at the University of Oklahoma and the Dean A McGee Eye Institute, performed all the operations with temporal clear corneal incision, phacoemulsification and the capsular bags.

First introduced in 1991, capsular tension rings were designed to manage zonular weakness during cataract surgery. Since the original CTR, many improved and modified designs have come on the market. The Morcher CTR used in the Oklahoma study is a relatively new design that was FDA-approved in 2004 and comes in three sizes approved in 2004 and comes in three sizes.

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