

Capsular tension ring implantation enhances outcomes of accommodating IOL

A surgeon reports significantly improved intermediate and near visual acuity when capsular tension ring is implanted along with premium IOL. - by Michela Cimperle

BARCELONA - The implantation of a capsular tension ring, or CTR, improves the functional outcomes of the Bausch & Lomb Crystalens HD accommodating IOL, providing significantly better intermediate and near vision, according to one surgeon.

"In one occasion I used the CTR in one eye with zonular lysis. I was forced to implant the ring, and results were extremely good. From that point on, I started using the CTR in regular cases," Erik Mertens, MD, said at the meeting of the European Society of Cataract and Refractive Surgeons. He tried different types of rings, but his favorite one is currently the Ophtec CTR, which he said is "easy to implant and gives the best results."

Surgical precision required

When using a premium IOL such as the Crystalens, surgery needs to be carried out accurately, meticulously and precisely at each step. "The Crystalens HD is a powerful tool, but results are highly surgeon-dependent," Dr. Mertens said.

For a more accurate and reproducible capsulorrhexis, he uses a 6-mm marker and performs a 5.5- to 6-mm rhexis, slightly displaced nasally, because the Crystalens centers in the capsular bag, corresponding to a slightly more nasal position from the center of the dilated pupil. The Ophtec CTR can be inserted easily in the capsule with a special micro-inserter. Once loaded with the ring, the inserter is introduced into the chamber, the tip is placed at the level of the capsulorrhexis and the ring is slowly injected inside the bag. A second instrument can be used to help position the ring correctly along the capsule's equator. "Make sure the ring is well-fixed into the bag, because loose ends might tear the capsule," Dr. Mertens said.

Improved outcomes

Comparing the outcomes of the Crystalens HD with and without CTRs in two groups of patients, Dr. Mertens noted that while distance acuity was nearly in the same range, intermediate and near vision were significantly better with the ring.

Mean monocular uncorrected distant vision with the CTR was 20/25 or better in 52% of eyes and 20/20 or better in 31% of eyes. Without the ring, results were similar: 56% of eyes achieved 20/25 or better and 28% achieved 20/20 or better.

Intermediate vision with the ring was 20/25 or better in 94% of eyes and 20/20 or better in 81% of eyes. Without the ring, only 70% of eyes achieved 20/25 or better and 41% achieved 20/20 or better. "This was indeed a significant difference," Dr. Mertens noted. For near vision, J2 and J1 were achieved in 74% of cases that underwent ring implantation, whereas in the group without the ring, 56% were able to read J2 and 28% achieved J1.

"I also asked my patients if and when they were wearing glasses," he said. "In the CTR group, 91% never use glasses for distance and 85% never use reading glasses. Overall, 79% do not wear glasses at all. Without CTR, the rate of patients never wearing glasses for distance drops to 81% and for near, to 59%. Overall, the patients not wearing glasses are 47%." Dr. Mertens said he does not know the exact mechanism that makes this IOL perform better when a CTR is implanted.

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"Probably something to do with the increased stability of the bag," he hypothesized. "However, 32% more patients who are spectacle-independent and happy are a convincing argument in favor of the use of CTRs, he noted.

"I would like to encourage colleagues to start using capsular tension rings in future Crystalens HD implantations," he said.



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Dr. Mertens' experience shows us that we still have a lot to learn when it comes to accommodating IOLs. His use of a capsular tension ring seems to provide an additional boost to the intermediate and near vision to patients implanted with the Crystalens HD. While the mechanism of this is not fully known, perhaps an increased stability of the IOL-capsule complex and the reduction of capsular contraction provide a diaphragm effect to respond to changes in vitreous pressure or ciliary muscle contraction. While it is premature to recommend a CTR for every patient implanted with a Crystalens, a prospective, multicenter, randomized trial may prove to be fruitful.