Excellent visual outcomes for ICL, but cataract formation still a problem

Dermot McGrath
in Lisbon

LONGTERM clinical experience with the Implantable Contact Lens (Visian ICL, Staar Surgical) demonstrates consistently high rates of refractive success and patient satisfaction, but these benefits must be balanced with the possibility of eventual surgery for ICL-induced cataract, according to a number of researchers at the XXIII Congress of the ESCRS.

“This foldable, posterior chamber, phakic IOL performs well in terms of safety, efficacy and predictability for moderate to high myopia, but there remains a concern in the long term due to the relatively high incidence of anterior subcapsular cataract found with this type of lens,” said Philippe Othenin-Girard MD. Dr. Othenin-Girard, University Eye Hospital, Lausanne.

“Good predictability and safety
Predictability was excellent, noted Dr N guyen, who presented the visual acuity data. For the 73 eyes targeted for emmetropia, the mean final SE was –0.69 D (range -1.25D to -4.88 D). Some 72% of eyes gained one or more lines of best-corrected visual acuity, 22.5% remained stable and 5.6% lost one or two lines. Of the group that was targeted for emmetropia, uncorrected visual acuity was 0.5 or better in 77% of the eyes and 1.0 or better in 26%.

The results for intraocular pressure showed that 52 eyes had a higher postoperative IOP. 21 eyes remained stable and 63 eyes recorded a lower IOP, although the differences were not statistically significant. Dr N guyen also noted that there was no demonstrable correlation between an increase in IOP and the degree of vaulting.

Complications associated with the procedure included two acute symptomatic vitreous detachments that occurred in the first week after Nd:Yag laser iridotomy. One of these led to rheumatogenous retinal detachment three weeks after ICL implantation. The other patient complained of acute floaters and underwent a vitrectomy before ICL implantation. Intraoperative complications included two ICLs that had to be removed and replaced during surgery – one because of a 180-degree rotation of the ICL, and the other because a plate of the ICL had completely folded on itself. Postoperative complications included six cases of peripheral bulging of the plates, six cases of late ocular hypertension, four cases of asymptomatic late retinal tears, and four cases of excessive vaulting, one which required a surgical reposition eight months after surgery.

Subcapsular opacities
Focusing on the persistent problems of cataract formation associated with the ICL, Dr Othenin-Girard noted that two main conditions needed to be satisfied for the development of an ICL-induced cataract: first, the presence of characteristic anterior subcapsular opacity and second, a clear lens three months after the surgery in order to exclude the possibility of a peroperative iatrogenic cataract.

He said that between 2003 and 2005, the rate of ICL-induced subcapsular opacities progressed from 26% to 30%, necessitating six new phacoemulsifications. No subcapsular opacities were observed before the one-year follow-up point.

Dr Othenin-Girard stressed that age played a role in the incidence of subcapsular opacities.

“It is clear that the number of cataracts increases with age, 17.4% of the patients aged between 31 and 40 years developed a cataract, more than 44% between 41 and 50 years and 42% between 51 and 64 years.”

“Total vaulting protects the lens against cataract, however only a minority of eyes have this complete vaulting. No matter what technology is used to measure the sulcus diameter, a precise total vaulting predictability cannot be actually achieved. We have therefore restricted our ICL indication to myopia over -9.0 D and for patients older than 40 years of age to reduce the risk of ICL-induced cataract in young patients, even if the risk is age-related,” he said.

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Examination of peripheral vaulting by Scheimpflug photography confirmed the research team’s previous finding that total vaulting completely prevents cataract formation. Dr Othenin-Girard said that no ICL-induced cataracts had been observed before a follow-up of one year and that the number of cataracts had slowly increased thereafter, with a progressive density of opacities. He said that the typical subcapsular cataract is related to the age of the patient, the central vaulting and the ICL power value.

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