ReSTOR Multifocal IOL works well in young patients with traumatic cataracts

Dermot McGrath in Monte Carlo

The AcrySof ReSTOR (Alcon) diffractive multifocal IOL can be used successfully to restore emmetropia and binocular vision in young patients with unilateral traumatic cataracts, according to Simonetta Morselli MD and Roberto Bellucci MD.

Addressing delegates attending the first Cornea Day organised as part of this year’s ESCRS Winter Refractive meeting, Dr. Morselli said that the properties of the ReSTOR lens make it the ideal choice for this type of application.

“The idea to implant the ReSTOR IOL in these young eyes with traumatic cataract came from the necessity to restore simultaneously both the near and distance vision as well as attempting to maintain binocular vision,” she said.

Discussing the properties of the lens, Dr. Morselli noted that the ReSTOR bifocal lens is a refractive-diffractive, apodised single-piece, truncated hydrophobic acrylic IOL. The lens has a central 3.6mm apodised diffractive optic region with 12 concentric, gradually decreasing step height diffractive zones on the anterior surface, which divide incoming light into two diffraction orders to create two lens powers. Thanks to its relatively small, central multifocal optical zone, the lens is designed to maintain near vision while improving distance acuity and reducing night-time visual phenomena.

Dr. Morselli’s and Dr. Bellucci’s study included four eyes of four patients aged from 4-28 years with traumatic cataracts - three with posterior subcapsular cataract and one case of lens wound. To be considered for implantation with the IOL, patients required good corneal integrity, good potential visual acuity and the possibility of capsular bag implantation. The young age of some of the patients also meant that parents needed to fully understand the possible advantages and problems deriving from this type of surgery, said Dr. Morselli.

Power calculation before surgery was based on both implanted and contralateral eye measurements using the IOL Master (Carl Zeiss). The refractive goal in such procedures is usually for emmetropia or slight hyperopia, and the use of partial coherence interferometry is particularly helpful for enhancing the accuracy of IOL power selection and achieving the refractive target. In cases of subcapsular cataract, measurements from the IOL Master were also compared with ultrasound in order to verify accuracy, noted Dr. Morselli.

As the objective of multifocal IOL implantation is to avoid spectacle use for distance- and near-vision tasks, accurate biometry, control of astigmatism and long-term IOL stability are essential to achieve a successful outcome, said Dr. Morselli. Previous studies in the literature demonstrate that multifocal IOL implantation can be associated with distance visual acuity comparable with that associated with monofocal IOLs, given careful surgical planning and technique.

No serious intraoperative complications were recorded, although in one eye an intraocular foreign body was removed from the ciliary body with pars plana vitrectomy at the same time as the cataract surgery.

“All eyes could be implanted without difficulty into the capsular bag. We had no problems of visibility during the surgery due to corneal scar and all IOLs remained centred, which was very important for this type of lens.”

Postoperatively, all the eyes required Nd:YAG laser capsulotomy between two to six months after surgery because of secondary cataract that was strongly affecting vision. At the last follow-up visit, binocular vision for distance and for near vision without correction was present in three eyes without optical correction.

Summing up, Dr. Morselli said that the ReSTOR diffractive bifocal IOL can be used successfully to achieve emmetropia after anterior segment trauma once the cornea is relatively intact. However, she cautioned that the necessity of posterior capsulotomy even with low degrees of posterior capsule opacification must be thoroughly explained to the patients and to their parents.

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