IMPLANTATION of the multifocal AcrySof ReSTOR IO Ls (Alcon) in amblyopic eyes produced improved distance and near vision, and a bifocal defocus curve, reported Peter Szurman MD, at the Congress of the German-speaking Society for Intraocular Lens Implantation, Interventional and Refractive Surgery (DGII).

"Patients with amblyopia and anisometropia can definitely profit from ReSTOR implantation. Although I would not necessarily recommend implanting the ReSTOR in all amblyopic eyes, at the same time no harm is done, and some outcome functions like visual acuity and stereovision can really be improved," said Dr Szurman.

Dr Szurman implanted the apodised diffractive ReSTOR intraocular lenses bilaterally in three patients with amblyopia and anisometropia following phacoemulsification for cataract removal. The follow-up time was 16-18 months, during which he evaluated near, intermediate and far best- and un-corrected visual acuity, contrast vision, stereovision, and crowding.

One patient had a previous clear lens extraction and explicitly requested the ReSTOR lens. The other two patients had cataract with high anisometropia and a strong suspicion of amblyopia.

Postoperative vision in the non-amblyopic partner eye achieved a mean uncorrected and best-corrected visual acuity of 0.8 and 1.0, respectively. Vision in the amblyopic eye was between two and four lines worse.

Interestingly, overall vision improved in the two cataract patients and near visual acuity was not worse than distance vision in the amblyopic eye, although near vision takes longer to adapt to requiring higher cortical adaptation processes, Dr Szurman noted.

Binocular vision was not worse than the monocular vision achieved by the non-amblyopic eye, suggesting that the healthier eye is not bothered through the binocular contribution of the amblyopic eye, with this lens, he said. At the same time, there was no improvement in visual acuity through binocular vision, which is frequently noted with the ReSTOR in healthy eyes, while monocular vision alone is worse.

Near visual results in the amblyopic eyes were particularly good. The monocular defocus curves of the amblyopic eyes showed a definite bifocal profile, which was only slightly lower than the partner eye. Dr Szurman evaluated his patients' contribution of the amblyopic eye, with this being done, and some outcome functions like visual acuity and stereovision can really be improved.

"Patients generally have to pay for these lenses themselves. Perhaps placing a ReSTOR lens in the non-amblyopic eye and a distance optimised multifocal IO L in the amblyopic one would make just as much sense and cost less. This saves the patient the expense of the more expensive lens in an amblyopic eye that can only incompletely profit from it," he said.

Dr Szurman noted that the decision was up to the discretion of the surgeon, case to case, but one should bear in mind that only bilateral ReSTOR implantation allows for some stereovision as observed in their patients. Amblyopia is very heterogeneous, with three distinct causes: strabismus, unequal refractive error and deprivation (due to lens, corneal, or vitreous clouding). However, amblyopic patients also differ in the depth and degree of visual suppression and fixation. The clinically relevant aspect for the cataract surgeon is that he cannot always be sure preoperatively if the basic problem is amblyopia. All the surgeon really knows about a patient is that he has reduced visual acuity in one eye, he said.

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Gerd Auffarth MD

Amblyopia is reduced visual acuity without any explicit abnormality under detailed examination, per definition, which is rather general, he said. In addition to reduced central visual acuity, amblyopic eyes have other cognitive problems, such as binocular/stereovision, seeing lines, crowding, noise, contrast vision, and often the better eye has the functional deficit. A surgeon really has to consider whether implanting a lens that projects two pictures on the retina is a good idea, which can take regular eyes a half year for their brains to integrate the images and get used to it, Dr Szurman advised.

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