INTRAOCULAR LENS EXCHANGE WITH REMOVAL OF THE OPTIC ONLY IN THE LATE POSTOPERATIVE PERIOD


PURPOSE: To evaluate the clinical results of a variant of late IOL exchange surgery technique, with removal of the optic only of the initial IOL, and placing a new IOL in the ciliary sulcus, to avoid serious complications such as zonular dehiscence.

METHODS: Retrospective study that included 9 cases with previous phacoemulsification and implantation of a single-piece hydrophilic acrylic IOL in the capsular bag that later needed IOL exchange because of glare and severe vision loss. Preoperative posterior capsule state, changes in preoperative and postoperative visual acuity, and presence of intraoperative and postoperative complications were evaluated.

RESULTS: Exchange causes were in 8 cases, late opacification of hydrophilic acrylic intraocular lens (IOFLEX®, Mediphacos, Belo Horizonte, Minas Gerais, Brazil. Image 5) and in 1 case, multifocal intraocular lens intolerance (Rayner M-flex®, Rayner intraocular lenses, Hove, East Sussex, UK. Image 6). The mean time between cataract surgery and IOL Exchange was 34 ± 8.7 months. The BCVA before and after IOL exchange was 0.70 ± 0.53 log MAR and 0.31 ± 0.64 log MAR in 8 cases, respectively. Only 1 case showed no improvement because of ocular comorbidity previous to IOL exchange (central retinal vein occlusion). There wasn’t significant difference in pre and post surgical VA (p=0.30) because of the low number of recruited patients, although the VA improved in 88.8% of cases. In 5 cases (55.6%) that presented ndYag Laser posterior capsulotomy, pars plana vitrectomy was done. In all cases the new IOL haptics were placed in sulcus and in 2 cases optic was trapped in the anterior capsulotomy (image 7).

CONCLUSION: Late IOL exchange surgery is technically challenging since anterior capsule fibrosis, anterior capsulorhexis contraction and the strong adhesions between the IOL and the capsule, increases with time, hindering the removal of the entire IOL but most of all of the firmly attached haptics. In this cases zonular dehiscence commonly occurs. As reported by Yu AKF and Ng ASY(1) in 2002 and Lee SJ et al.(2) in 2009, IOL exchange surgery of removing the optic only, leaving the haptics in the bag and placing the new IOL in sulcus, results in a safe, effective and easy technique to improve the patient’s visual prognosis reducing zonular dehiscence risk, with its associated complications during IOL exchange surgery and the postoperative period.

SURGICAL TECHNIQUE

• Clear corneal incision perpendicular to optic-haptic union
• The anterior capsule was removed from the optic-haptic union to gain access.
• Careful viscodissection between posterior capsule and IOL optic
• Haptics were cut from the optic with a 20g Grieshaber® DSP vertical scissor (Alcon, Fort Worth, Tx, USA) in 4 cases (Image 1) and with a MST® Packer/Chang IOL cutter (Micro-surgical technology, Redmond, WA, USA) in 5 cases (Image 2)
• In 4 cases optic was folded with a forceps in the anterior chamber (image 3) and removed through 3.2mm corneal incision. In 5 cases optic was cut with the Packer/Chang scissor (image 4) and removed in two pieces through 2.75 mm corneal incision.
• An Acrysof MA60AC® intraocular lens (Alcon, fort Worth, Tx, USA) was implanted in ciliary sulcus in all the patients.
• Pars plana vitrectomy was performed through a 23g Edge Plus® valved entry system (Alcon, Fort Worth, Tx, USA) that was placed at the beginning of the surgery, in those cases with previous posterior capsulotomy using Constellation Ultravit® (Alcon, Fort Worth, Tx, USA) 5000cpm probe with 5000cpm fixed cut rate and lineal vacuum.

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Materials and methods

- Retrospective study that included 9 cases with previous phacoemulsification and implantation of a single-piece hydrophilic acrylic IOL in the capsular bag that later needed IOL exchange because of glare and severe vision loss. Preoperative posterior capsule state, changes in preoperative and postoperative visual acuity, and presence of intraoperative and postoperative complications were evaluated.

- The surgical technique consisted in cutting the optic from the haptics and its subsequent removal, leaving the haptics in the bag, and placing the new IOL haptics in sulcus. To see the surgical technique in HD: http://vimeo.com/47373617
Results

Exchange causes were

- in 8 cases late opacification of hydrophilic acrylic intraocular lens (IOFLEX®, Mediphacos, Belo Horizonte, Minas Gerais, Brazil)
- In 1 case, multifocal intraocular lens intolerance (Rayner M-flex®, Rayner intraocular lenses, Hove, East Sussex, UK)

The mean time between cataract surgery and IOL Exchange was 34 ± 8.7 months.
The BCVA before and after IOL exchange was $0.70 \pm 0.53$ log MAR and $0.31 \pm 0.64$ log MAR in 8 cases, respectively. Only 1 case showed no improvement because of ocular comorbidity previous to IOL exchange (central retinal vein occlusion). There wasn´t significant difference in pre and post surgical VA ($p=0.30$) because of the low number of recruited patients, although the VA improved in 88.8% of cases.
Results

In 5 cases (55.6%) that presented ndYag Laser posterior capsulotomy, pars plana vitrectomy was done. In all cases the new IOL haptics were placed in sulcus and in 2 cases optic was trapped in the anterior capsulotomy.

No severe complications were reported during the surgery or in the long term follow-up (8.67 ± 1.8 months). Only 1 case show mild cystoid macular edema that was reduced with nefapenac twice a day topic treatment for 2 months.
Conclusion

Late IOL exchange surgery is technically challenging since anterior capsule fibrosis, anterior capsulorhexis contraction and the strong adhesions between the IOL and the capsule, increases with time, hindering the removal of the entire IOL but most of all of the firmly attached haptics. In this cases zonular dehiscence commonly occurs. As reported by Yu AKF and Ng ASY(1) in 2002 and Lee SJ et al.(2) in 2009, IOL exchange surgery of removing the optic only, leaving the haptics in the bag and placing the new IOL in sulcus, results in a safe, effective and easy technique to improve the patient’s visual prognosis reducing zonular dehiscence risk, with its associated complications during IOL exchange surgery and the postoperative period.