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Case Report

Retropupillary Iris Claw Lens Implantation in a Post-traumatic Aphakic Patient: A Case Report

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ABSTRACT

Ocular trauma is one of the leading cause of visual loss. We present a case of retropupillary iris claw lens implantation in a post-traumatic aphakic patient after 25 years of trauma. On examination it was seen that he had deep anterior chamber, iridodonesis with jet black reflex and vitreous in pupillary area. On direct and indirect ophthalmoscopy right eye details were within normal limits. The patient was posted for right eye secondary retropupillary Iris claw lens implantation. Traumatic injuries may have poorer visual prognosis but with newer management techniques we have the hope of good visual prognosis.

Key Words: *Trauma, aphakia, secondary intraocular lens, Iris claw lens, B scan*

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INTRODUCTION

Ocular trauma is one of the leading cause of visual loss. Aphakia comes from two Greek words: "a" meaning "none" and "phacos" meaning "lens." In aphakia, there is no crystalline lens inside the eye[1]. Aphakia may be due to surgical removal of crystalline lens such as in cataract surgery, a perforating wound or ulcer, congenital anomaly, post trauma. It causes a loss of accommodation, high degree of farsightedness (hyperopia), deep anterior chamber.Options available for the surgeon to correct aphakia are glasses, contact lens, keratorefractive surgery, and intraocular lens (IOL). The various IOLs available are 1) anterior chamber IOL (ACIOL), 2) scleral fixated IOL and 3) iris fixated IOL, both anterior and posterior [2,3].

IC-ACIOLs were first introduced by Worst et al, to correct the refraction in aphakic eyes[4]. These iris-claw lenses were biconvex polymethylmethacrylate IOL fixated above the iridal plane at the mid-periphery of the iris. A decrease in endothelial count was observed in these anterior placed lenses, so an alternative to this procedure was thought. Then Amar [5] published the retropupillary implantation technique using an iris-claw IOL as early as 1980, which was modified clinically by Mohr et al [6] in 2002, later this approach gained the popularity.

Secondary implantations of retropupillary IC-IOL have been the preferred procedure in cases where iris support is feasible[7]. As IC-IOL is attached to the midperiphery of the iris, complications related to the size of IOL and damage to the angle of anterior chamber and the root of iris are avoided. The unique enclavation system allows centration of the IOL on the pupillary axis, which is important in eyes with decentered pupils. Also, IC-IOLs do not interfere with iris physiological vascularization or cause distortion of pupil[8]. Retro pupillary fixation of iris-claw lens enhances stability, prevents tilting of the lens and reduces the glare phenomenon [9,10].

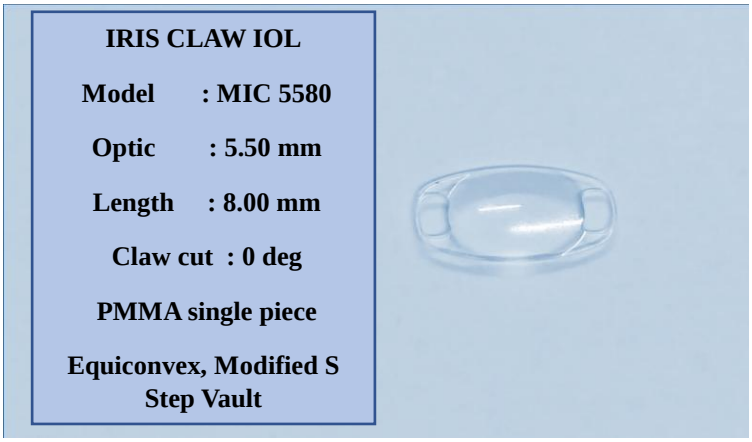
CASE

A 63 years old male reported to eye department for diminution of vision in right eye since 25 years. He is farmer by occupation and had a history of trauma to right eye 25 years back for which he was operated elsewhere and kept surgically aphakic then. His right eye vision was finger count 1 m and left eye 6/18. No history of systemic illness. Slit lamp examination showed right eye with deep anterior chamber, iridodonesis with jet black reflex and vitreous in pupillary area. On direct and indirect ophthalmoscopy right eye details were within normal limits. B scan ultrasonography showed normal posterior segment.

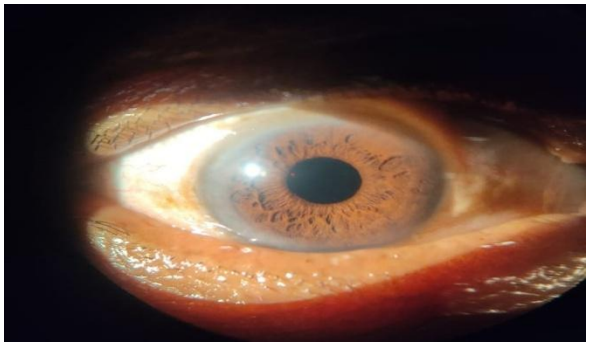
MANAGEMENT

The patient was posted for right eye secondary retropupillary iris claw lens implantation under peribulbar anesthesia. Corneo-scleral tunnel was made. Anterior chamber entry was done. Anterior vitrectomy was done with vitreous cutter

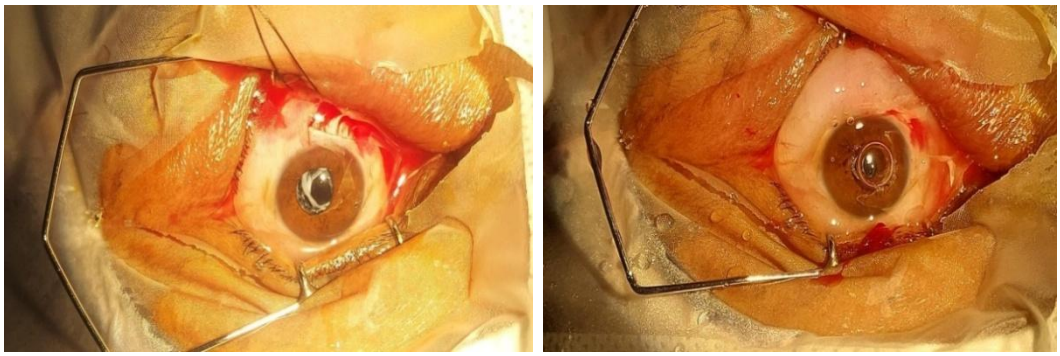
and retropupillary iris claw lens implanted. Peripheral iridectomy was done. Postoperative recovery was uneventful. He regained uncorrected visual acuity of 6/60 in right eye. Patient was kept on topical steroids, topical antibiotics and topical NSAIDS. On discharge the patient was advised follow up after 3 days, 7 days and 40 days. Best corrected visual acuity was 6/12 with -1.5DC at 90 degree at day 40.



POSTERIOR CHAMBER IRIS CLAW LENS



PRE-OPERATIVE PHOTOGRAPH



INTRA-OPERATIVE PHOTOGRAPHS

POST-OPERATIVE PHOTOGRAPH

DISCUSSION

Ocular trauma can cause aphakia which results in major visual impairment.The aphakia can be managed by glasses,contact lenses and secondary IOL implantation.Secondary IOL implantation aids the patient to improve morbidity. The various methods of secondary IOL implantation are IOL lens implantation in ciliary sulcus,Iris claw lens , Scleral fixated lens. Iris Claw Lens can be implanted using either corneal incision or through sclero-corneal tunnel(which is reported to cause less corneal endothelial cell loss,less astigmatism and lower risk of wound leakage). Implantation can be either antepupillary or retropupillary. Retropupillary fixation offers advantage of physiological posterior chamber lens implantation ,resulting in deeper anterior chamber, lower intraoperative and postoperative risk of corneal decompensation than anterior fixation. IOP elevation reported incidence of about 0-7%. In our case patient had a trauma 25 years back which resulted in surgical aphakia. A decision of secondary retropupillary Iris claw lens implantation was done and patient had good visual outcome even after many years of trauma. The complications occurring in iris claw lens implantation are-i) Endothelial cell loss which may be mainly because of a mechanical injury due to contact between the endothelium and the instruments or the IOL which occurs during the surgical procedure.Retropupillary implantation seems to cause less corneal endothelial loss than antepupillary iris claw implantation.ii)Intraocular pressure elevation can be a consequence of iritis,pupillary block and pigment dispersion which is reported to be about 0-7% iii)Wound leak as a consequence of a 5.5 mm corneal incision in eyes with previously incised cornea. Iv)Persistent ovalisation of the pupil – more frequently after retropuliiary IOL implantation.v)Dislocation of posterior –fixated iris claw IOLs was noted in about 0 to 10% cases.vi) Cystoid macular edema (CME) can be a result of lack of IOL stability causing movement of the IOL against the iris,microscopic imperfections in the surface of the IOL rubbing on the iris,malposition of the iris claw on the ciliary body or due to persistent vitreous traction after incomplete vitrectomy .vii)Hyphaema Viii)Retinal detachment.ix)Endophthalmitis. Despite of these complications retropupillary Iris claw lens implantation in aphakic patients resulted in good visual outcome.

CONCLUSION

Secondary iris claw lens implantation procedure is safe, technically simpler, requires less duration to perform the procedure. Intraoperative and postoperative complications are less compared to other secondary IOLs implantation procedure. It results in stable and good visual acuity and early visual rehabilitation.Thus proper surgical management of aphakic patient will result in good visual rehabilitation if eye has no additional damage as in this case.

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