Externalised Haptic of a Tilted Scleral-fixated Intraocular Lens: A Case Report

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ABSTRACT

Introduction: Implantation of scleral-fixated intraocular lens (SFIOL) has become a common technique done in the recent times when there is inadequate support of the posterior capsular bag. As this technique of SFIOL implantation needs good expertise when performed, if not done properly it may result in several post-operative complications which may require a re-surgery that delays the patient's visual recovery. One such post-operative complication is haptic exposure in the post-operative period which is reported in this case report. This case report stresses on the importance of correct surgical technique and frequent post-operative follow up when SFIOL is implanted.

Case: A 66-year-old female presented to OPD with complaints of diminution of vision in both eyes for the past six months following cataract surgery which was done elsewhere in some other hospital a year ago.

Observation: On slit lamp examination, an externalised haptic of a tilted SFIOL was noted in the subconjunctival space of patient's left eye.

Conclusion: Continuous professional development and adherence to best practice guidelines are imperative for optimising the success of SFIOL procedures.

Key words: Cataract; endopthalmitis; intraocular lens; posterior capsule.

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INTRODUCTION

Cataract is the leading cause of blindness worldwide and cataract surgery with implantation of intraocular lens (IOL) is the most commonly performed surgery worldwide (Thompson et al., 2015). After removal of the cataract, an IOL is usually implanted within the capsular bag. In some situations, endocapsular implantation of IOL is not feasible due to inadequate or absent zonular or capsular support (Kumar et al., 2023). In these situations, the surgeon has to consider alternative techniques such as placement of anterior chamber IOL or IOL fixation either to the iris or sclera (Kumar et al., 2023). Scleral-fixated intraocular lens (SFIOL) implantation is a common procedure done in the presence of intraoperative complications such as posterior capsular rent or zonular dialysis. SFIOL implantation has few benefits. It reduces the risk of corneal decompensation, peripheral anterior synechia, and secondary glaucoma by positioning the lens further away from anterior segment structures (Wagoner et al., 2003). However, there are few complications with employing SFIOL implantation, including exposure of suture knot through conjunctiva, sclerotomy wound, scleral incision and so on (Evereklioglu et al., 2003). Haptic extrusion is a rare complication encountered after SFIOL implantation which occurs secondary to slippage of the haptic from the scleral tunnel, poor scleral tunnel or scleral flap construction or inherent scleral fragility (Agarwal et al., 2021).

CASE REPORT

A 66-year-old female presented to OPD with complaints of visual disturbances in both the eyes for the past six months. The patient had undergone cataract surgery in both the eyes elsewhere in some other hospital a year back. She reported a gradual decline in vision over the past six months. She is known case of systemic hypertension for the past two years and is under treatment. Cataract surgery done on right eye was uneventful. Small incision cataract surgery was performed on her left eye one year ago. Intraocular lens (IOL) could not be placed in the first setting due to posterior capsular rent intraoperatively. SFIOL was implanted in the left eye three months later. Postoperative visual acuity in left eye was 6/12 improving to 6/9. Patient gradually developed diminution of vision in left eye. Patient started to notice diminution of vision in left eye one month after undergoing SFIOL implantation. She presented to OPD after six months during which the vision in her right eye was 6/9 and left eye was 4/60 (No improvement). On examination, anterior and posterior segment of right eye was normal with posterior capsular IOL (PCIOL) and in left eye, haptic of SFIOL was seen under the superotemporal aspect of conjunctiva (Figure 1). Pupil on the left eye was updrawn and SFIOL in situ. Following dilatation, fundus examination was found to be normal. Patient was taken up for surgery and haptic refixation was done by modified Yamane technique where the exposed haptic was cauterised and the tip was made into a flange which was then fixated into the substance of the sclera. Post-operative period was uneventful and the patient's vison improved to 6/18 during her post-operative visit at one month.

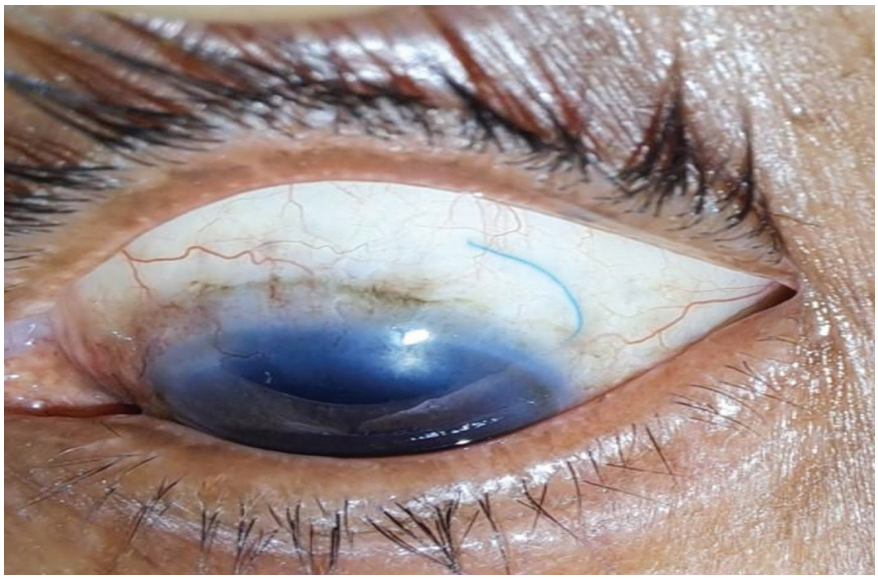

Figure 1: Exernalised haptic of tilted scleral-fixated intraocular lens in patient's left eye.

DISCUSSION

Scleral-fixated intraocular lenses (SFIOLs) are often utilised in cases where there is insufficient capsular support for standard intraocular lens (IOL) implantation, such as post-cataract surgery with complications. The case of a 66-year-old female presenting with complications following cataract surgery operated elsewhere in some other hospital and subsequent SFIOL implantation offers critical insights into the procedural challenges and management strategies required to optimise patient outcomes.

One of the primary complications associated with SFIOL implantation is haptic exposure. This can lead to discomfort, foreign body sensation, and, in severe cases, endophthalmitis. In the reported case, the patient presented with a diminution of vision and an externalised haptic in the subconjunctival space of the left eye. This finding underscores the need for meticulous surgical technique and the potential for complications even with experienced surgeons.

Studies have documented various post-operative complications of SFIOLs, including haptic exposure, lens decentration, tilt, and secondary glaucoma. A study by Wagoner et al., (2003) reported that SFIOLs could lead to significant post-operative issues, particularly if the fixation is not secure or if there is insufficient conjunctival coverage. The necessity for rigorous post-operative monitoring is emphasised by these findings, as early detection and intervention can prevent the progression of complications.

The success of SFIOL implantation heavily relies on the surgeon's expertise. Precise placement of the haptics and adequate scleral fixation are crucial to prevent post-operative complications. As indicated in the case report, the patient's complication likely resulted from suboptimal surgical technique, leading to haptic exposure and visual disturbances. According to

a study by Donaldson et al., (2005) the learning curve for SFIOL implantation is steep, and outcomes improve significantly with experience and proficiency.

Some surgeons embedded the haptics of three-piece IOLs into the scleral tunnel to reduce suture-related complications. However, there are still risks associated with this procedure, including post-operative hypotony, IOL slippage and lens deviation, rupture of the scleral tunnel, insufficient haptic fixation, and post-operative haptics distortion. Yamane et al., (2017) have recently made modifications to this technique and have proposed flanged IOL fixation, which will significantly lessen the drawbacks of the earlier scleral tunnel method.

Gabor et al., (2007) has reported a technique that involves creating scleral flaps or using sutureless intrascleral fixation, both of which require a high level of skill. Advances in surgical techniques, such as the use of fibrin glue-assisted fixation, have shown promising results in reducing complications and improving IOL stability. These advancements highlight the importance of continuous education and training for ophthalmic surgeons to master these intricate procedures.

Exposed SFIOL haptic can be managed in several ways. One approach to correcting haptic exposure is attempting the glued IOL technique, where partial-thickness limbal-based scleral flaps are made 180 degrees apart diagonally, and the haptics of the PC IOL are externalised to place them beneath the flaps. Fibrin glue is used to attach the haptics to the scleral bed, beneath the flap. But the factors that contributed to haptic extrusion intraoperatively may still be present and place the patient at risk of haptic exposure once again. Another potential approach is IOL exchange, using a different technique of IOL fixation (e.g., iris-fixated, scleral-sutured, and anterior chamber placement). However anterior chamber IOLs may increase the chances of corneal decompensation, secondary glaucoma, uveitis, uveitis-glaucoma-hyphema syndrome (UGH syndrome) etc. Matsui et al., (2015) described a method of using autologous scleral patch with IOL exchange. But this method can cause cosmetic disfigurement in patient and there are possibilities of recurrent haptic exposure which may require re-surgery. Gelman et al., (2019) used the modified Yamane technique of haptic refixation where he describes cauterisation of the exposed haptic with a low temperature cautery to create a bulb shaped flange which can then be pushed back to lodge within the substance of the sclera. Obata et al., (2019) proposed the technique of fixing the haptic to the scleral bed with 8-0 nylon suture to prevent postoperative displacement but this method predisposes to risk of haptic malposition. Hu et al., (2018) described the technique of sutureless intrascleral hook like fixation of the haptic using 25-gauge trocars but this method of haptic fixation may transport extraocular organisms to the interior of the eye increasing the risk of post-operative endophthalmitis. There may be preference for one method of IOL fixation over another, but there is not a consensus as to which method proves to be best; and despite the associated complications, none has been rendered obsolete. To the contrary, the preferred approach should take into consideration factors such as the patient's anatomy and comorbidities, be individualised to the patient's needs.

A case series by Vote et al., (2006) has suggested that long-term outcomes for patients with SFIOLs can be favourable if complications are managed promptly and effectively. The necessity for regular follow-up cannot be overstated. In the case presented, delayed presentation of the complication might have exacerbated the patient's condition. Continuous post-operative monitoring allows for early detection of issues such as IOL tilt, decentration, or haptic exposure, which can be addressed before leading to significant visual impairment.

A study by McAllister and Hirst et al., (2011) highlighted the importance of frequent post-operative assessments in the early months following SFIOL implantation to ensure proper healing and IOL positioning. Implementing a structured follow-up protocol can aid in identifying and managing complications effectively, thereby improving patient satisfaction and visual outcomes.

CONCLUSION

The case of a 66-year-old female with haptic exposure following SFIOL implantation after cataract surgery underscores the critical need for surgical precision and diligent post-operative care. As SFIOLs remain a viable option for patients with inadequate capsular support, enhancing surgical techniques and ensuring rigorous follow-up can mitigate complications and enhance patient outcomes. Continuous professional development and adherence to best practice guidelines are imperative for optimising the success of SFIOL procedures.

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