



Case Report

Late Subluxation of Intraocular Lens Due to Haptic-Optic Adhesion

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Abstract

This case report describes a rare instance of late subluxation of an Intraocular Lens (IOL) resulting from adhesion between the haptic and optic components. Intraocular lens subluxation is typically associated with zonular weakness, trauma or capsular bag contracture; however, this case underscores an uncommon etiology related to adhesion between the haptic tip and the optic in a one piece hydrophobic acrylic IOL. This report highlights the clinical presentation, surgical management and implications for patient care, contributing to the understanding of long-term complications in cataract surgery.

Keywords: Intraocular Lens; Surgical Technique; Best-Corrected Visual Acuity; Intraocular Pressure

Introduction

Intraocular Lens (IOL) subluxation is a known complication following cataract surgery, most frequently caused by trauma, capsular contraction or weakened zonules due to underlying conditions such as pseudoexfoliation syndrome [1,2]. However, rare cases of IOL subluxation can occur secondary to structural anomalies, including haptic-adhesion to the optic, which interferes with proper longterm IOL positioning. This case report presents a patient who experienced late-onset IOL subluxation due to adhesion of the haptic to the optic, leading to gradual vision decline. Understanding this rare complication will aid ophthalmologists in

preventing similar occurrences and refining IOL design and surgical technique.

Case Presentation

A 72-year-old female was referred by her optometrist to the ophthalmology clinic with complaints of gradual vision loss in her eyes over the previous six months. Examination and work up revealed cataracts as the main causation of her vision loss. After a discussion, patient elected to undergo cataract extraction with IOL implantation. An extended-focus IOL (Vivity, Alcon) option was selected by patient. She underwent uneventful surgery in both eyes sequentially, achieving 20/20 J1 in the right eye and 20/40 J2 vision in the left eye 4 months after surgery. Patient returned 8 months after surgery with complaint of deterioration of vision and ghosting of images in the right eye.

Upon examination, the patient's Best-Corrected Visual Acuity (BCVA) in the right eye had decreased to 20/40, while the left eye maintained 20/30 vision. Slit-lamp examination revealed the IOL in the right eye had subluxed inferiorly within the capsular bag. The haptics were not visible in the normal anatomic position, but with extreme down gaze what appears to be the tip of the inferior haptic could barely be seen inside the edge of the optic. There were no signs of posterior capsular compromise or contraction and the anterior chamber was quiet with no inflammation.

Dilated fundus examination was unremarkable, showing no retinal detachment or vitreous abnormalities. Intraocular Pressure (IOP) was within normal limits in both eyes. Diagnosis was adhesion of the haptic to the anterior surface of the optic, preventing the haptic from spreading adequately within the capsular bag and leading to inferior subluxation of the optic.

Surgical Management: Given the progressive nature of the subluxation and the patient's visual impairment, surgical intervention was deemed necessary. The patient underwent a secondary IOL repositioning surgery, with a plan to viscodilate the capsule, break haptic-optic adhesion and recenter original IOL. If the haptic was found to be damaged, removal of the existing IOL and replacement with a new one-piece posterior chamber lens was a contingent plan.

During the procedure, the capsule was easily expanded with viscoelastic and the adhesions between the haptic and optic was visualized. Adhesions such as these occur frequently and usually the haptics break off from the optic by themselves even without manipulation. Sometimes the haptics are adherent to each other and those are usually manipulated apart intraoperatively. However, this adhesion was between haptic tip and the peripheral part of the optic, which was either overlooked or ignored at the time of surgery as these were thought not to be a problem. The haptic tip was dislodged from the surface of the optic with minimal manipulation and the original IOL was successfully repositioned, ensuring proper haptic configuration and stability. The surgery was uneventful and postoperative recovery was smooth. Positive dysphotopsia was immediately resolved on post-op day 1 and patient's BCVA improved to 20/20 four months postoperatively and the IOL was well-centered with no signs of further subluxation.

Discussion

Intraocular lens subluxation typically occurs due to trauma, zonular weakness or capsular bag issues, such as fibrosis or contracture. However, in this case, the subluxation occurred due to an unusual mechanical issue involving the adhesion of the haptic to the optic, which compromised the stability of the IOL. This case illustrates a less recognized cause of late-onset IOL subluxation, emphasizing the importance of meticulous IOL implantation technique and the need for careful postoperative monitoring, especially when novel IOL materials or designs are involved.

Hydrophobic IOL materials tend to be more tacky and can cause temporary adhesions. When the haptics are stuck to each other, most surgeons will break the adhesion immediately to ensure contraption of IOL. Incidence of optic-haptic adhesion is fairly high [3]. However, in this case, the haptic tip was adherent to the peripheral part of the optic, which is very unusual and did not raise suspicion that it would not break on its own. Fortunately, the cause was recognized post-operatively with good examination technique and surgical correction was easily affected without further complication.

Lessons and Recommendations

Surgical Technique: Proper handling and complete unfolding of the IOL are essential to prevent haptic-optic adhesion. Surgeons should verify that the haptics are correctly positioned during surgery. If adhesion is seen, gentle manipulation of the haptic tip will release the adhesion [4,5].

Material Considerations: Ongoing research is needed to evaluate the long-term interactions between IOL materials and the intraocular environment. Understanding how materials degrade or interact with ocular tissues can help prevent such complications [6].

Postoperative Monitoring: Patients with IOLs, especially those with newer or less commonly used designs, should be closely monitored for any signs of subluxation or other complications that may arise years after implantation.

Conclusion

Late-onset subluxation of an intraocular lens due to haptic-optic adhesion is a rare but significant complication that can lead to progressive vision impairment. This case highlights the importance of proper surgical technique during IOL implantation and underscores the need for vigilance in postoperative follow-up, especially in cases involving novel IOL designs or materials. Early detection and prompt intervention can restore visual function and prevent long-term complications. Further research into the materials and mechanics of IOLs may help reduce the incidence of such rare complications in the future.

Conflict of Interest

Authors declare that they have no conflict of interest.

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