

Case report

Sub-conjunctival dislocation of posterior chamber intra-ocular lens: five years after manual, small-incision cataract surgery

Rajesh Subhash Joshi
Department of Ophthalmology
Vasatrao Naik Government Medical College,
Yavatmal-4000001, India.

Abstract

Introduction: Ocular trauma can cause serious complications in eyes operated for cataract. **Case:** A 70-year-old lady had sustained blunt trauma to the left lower lid which resulted in a sub-conjunctival dislocation of the posterior chamber intraocular lens (PCIOL). The patient had undergone an uneventful manual, small-incision, sutureless cataract surgery with implantation of a PCIOL for senile cataract five years ago in the same eye. She had no ocular or systemic predisposing factors for wound dehiscence. Surgical exploration revealed a scleral rupture 7 mm in length, 2 mm behind the limbus at the 12'O clock position along the surgically-constructed wound. However, the scleral tunnel was not damaged. The PCIOL was removed. Wound closure was done to avoid infection of the intraocular structures. Her best-corrected visual acuity was 20/60 at the three months' follow-up. **Conclusion:** Surgeons should be aware of such complications occurring due to trauma. We recommend suturing of the scleral wound to strengthen it in cases of a deep scleral groove or when there is a possibility of a premature entry of the wound into the anterior chamber.

Keywords: Wound strength, scleral tunnel, dislocation, intraocular lens, small-incision cataract surgery

Introduction

Manual small-incision cataract surgery (MSICS) is a popular technique for cataract removal in the developing world (Gogate, 2003). The wound strength of a self-sealing scleral tunnel has been shown to be higher than that of the clear corneal and sutured limbal wound in experimental studies (Mackool, 1996; Earnest, 1993). However, no report of subconjunctival dislocation of a posterior chamber intraocular

lens (PCIOL) after MSICS has been documented. Subconjunctival dislocation of PCIOL has been reported after uneventful extracapsular cataract surgery with implantation of PCIOL by sutured limbal incision (Mandal, 2003) and intracapsular cataract extraction with sutured iris clip lens (Biedner, 1977).

We report a case of subconjunctival dislocation of a posterior chamber intraocular lens five years after the MSICS was performed through the scleral tunnel incision.

Case report

A 70-year-old lady presented to us three hours after sustaining a blunt trauma to the lower lid

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Address for correspondence

Dr. Rajesh S. Joshi
77, Panchtara Housing Society
Manish Nagar, Somalwada, Wardha Road
Nagpur-440015, India.
Tel: +91-9890131588
Email: jrajesh5@rediffmail.com

of left eye (OS). Following the injury, the patient noticed loss of vision, lid swelling and fullness of left upper lid. From her records, it was seen that the patient had undergone manual small incision cataract surgery (MSICS) with an OS implantation of a posterior chamber intraocular lens (PCIOL) five years back for senile cataract. Her last follow-up one and a half years ago had been uneventful. The patient was not a know myope.

On examination, her visual acuity of the left eye was accurate perception of light and projection of rays in all quadrants. There was lid swelling and ecchymosis of the upper and lower lids. Diffuse subconjunctival hemorrhage was noted inferiorly. A PCIOL was seen in the subconjunctival peri-limbal area superiorly. No conjunctival dehiscence was seen. The overlying conjunctiva was congested and chemosed. The cornea was edematous. The iris and pupillary details were not seen due to hyphema. The retina could not be visualized due to the hazy media. The right eye was pseudophakic with a best-corrected visual acuity of 20/20.



Figure 1: Subconjunctival dislocation of PCIOL



Figure 2: Separated scleral wound

A surgical exploration was counseled. At surgery, a fornix-based conjunctival flap was constructed from the 10'O clock to the 2'O clock position. A horizontally- oriented single piece PCIOL (6.5 mm optic size with two dialing holes) was seen superiorly in the sub-conjunctival space (Fig 1). The PCIOL was removed and the wound was inspected for dehiscence. The wound was separated in its whole length (Fig. 2). The edge of wound was irregular and everted. The total length of wound separation was 7 mm. The sclero-corneal tunnel was inspected for possible damage by sweeping the iris reposer along its length. However, the architecture of the sclero-corneal tunnel had not been damaged. There was no iris and vitreous incarceration across the scleral wound. The globe was hypotonous. The wound was closed with interrupted 10-0 nylon sutures. The conjunctiva was repositioned over the wound. A side port incision was created with the help of a 20G MVR knife on the temporal side. Hydroxypropyl methylcellulose was injected to form the anterior chamber. A 3.2 mm clear corneal incision was performed on the nasal side. A Simcoe's irrigation aspiration cannula was used to clear the blood which was mixed with the vitreous from the anterior chamber. A closed-chamber anterior vitrectomy was performed. A peripheral iridectomy was done. The anterior chamber was formed with an air bubble. On the first postoperative day, the scleral wound was well apposed. A blood streak was present at the bottom of the anterior chamber. The pupil was irregular in shape. Three months later, the best-corrected visual acuity was 20/60. The intraocular pressure was normal. A gonioscopy did not show any damage to the angle structures. A fundus examination showed a macular scar.

Discussion

Amongst the small-incision cataract surgeries, manual small-incision cataract surgery (MSICS) is popular in the developing countries (Gogate, 2009). The technique involves creating a 6.5 - 7

mm long sclero-corneal tunnel 1.5 - 2 mm behind the limbus with a 1.5 mm internal corneal valve entry. The wound strength of the self-sealing sclero-corneal tunnel has been shown to be higher than that of a sutured limbal incision in experimental studies (Mackool, 1996; Earnest, 1993). The present case had been operated five years earlier by the MSICS technique. Blunt trauma resulted in the subconjunctival dislocation of the PCIOL with dehiscence in the scleral wound. No disruption of the overlying conjunctiva was seen. To our surprise, the scleral tunnel had not been damaged. An iris prolapse, an up-drawn pupil and a vitreous prolapse through the wound are the signs of scleral tunnel damage, and these were absent in our case. In the present case, trauma to the globe occurred at the inferior aspect. Counter-coup injury to the superior part of the globe might have forced the rigid PCIOL to strike against the elastic conjunctiva and the orbital rim causing the scleral wound rupture. The scleral tunnel offered a resistance during trauma. Damage to the wound construction resulting in an expulsion of the iris and the intraocular lens due to trauma one year after cataract surgery with a 7 mm scleral tunnel incision has been reported (Pham, 1996). This study showed irregular damage to the inner lamella of the wound. No such damage was seen in our case on gonioscopy three months after the operation when the cornea had become clear. We could not ascertain the cause of the scleral wound rupture without damaging the corneal valve entry. There were no systemic or local predisposing factors that might have caused the sclera to weaken. It is possible that the surgeon might have made a deep scleral groove entry by an number 15 blade or made a premature entry into the anterior chamber while performing the MSICS. However, there was no mention of any intraoperative complications on the discharge card of the patient and the postoperative follow-up of patient was seen to have been uneventful. These possible causes are likely to occur in the

early phases of MSICS trainings.

PCIOL implantation was not possible during the intraoperative period as the rim of the anterior capsule was not visible due to corneal edema. An anterior chamber IOL was avoided due to the possibility of an intraocular pressure rise and the likelihood of corneal decompensation postoperatively. The eye was rendered aphakic. The visual outcome was limited due to the presence of a macular scar.

All the previously reported cases of subconjunctival dislocation of IOL have occurred through the sutured limbal wound (Mandal,2003; Biedner,1977; Kumar 2002). The duration of the dislocation was varied from three to eight weeks.

To the best of our knowledge, this is the first reported case of sub-conjunctival dislocation of PCIOL that occurred five years after the MSICS. During the surgical intervention, the strength of the sclero-corneal tunnel was found to be remarkable.

Conclusion

Ophthalmic surgeons should be aware of such a complication that can occur due to trauma. We recommend suturing of the scleral wound to strengthen the scleral wound in cases of a deep scleral groove or in premature entry into the anterior chamber.

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