Late onset corneal decompensation following retained lens fragment in anterior chamber years after uneventful phacoemulsification

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ABSTRACT
Purpose: To report a case of late onset corneal decompensation following cataract surgery due to retained lens fragment in anterior chamber.

Observations: A 65 year old female presented with complaint of gradual dimness of vision in left eye since 4 months. She underwent uneventful phacoemulsification with posterior chamber intraocular lens implantation elsewhere 4 years back. On examination, the CDVA in left eye was 20/200. Slit-lamp examination revealed corneal edema with Descemet’s folds. She was diagnosed as pseudophakic bullous keratopathy and was being treated with topical steroids, cycloplegics and hyperosmolar agents for the same. She was also counseled about a lamellar corneal transplant. Posterior segment evaluation was within normal limits. Since the position of the IOL (sulcus versus bag) was not clearly seen ultrasound biomicroscopy (UBM) and anterior segment optical coherence tomography (AS-OCT) imaging was performed to try and better understand the possible cause for corneal decompensation. To our surprise, on both, UBM and ASOCT, a single, retained lens fragment was noted at 6 O’clock in the anterior chamber. AC wash was performed to remove the retained lens fragment. 3 months post AC wash corneal edema resolved completely with improvement in the BCVA to 20/40.

Conclusion: AND IMPORTANCE: This case highlights the importance of a thorough clinical evaluation supplemented with imaging modalities in order to make a complete diagnosis and eventually achieve better outcomes for the patient. In any case of unexplained corneal edema, either in the early or late postoperative period, UBM and ASOCT can become very helpful to determine the underlying cause.

1. Case report

A 65 year old female presented with complaint of gradual dimness of vision in left eye since 4 months. She underwent uneventful phacoemulsification with posterior chamber intraocular lens (IOL) implantation elsewhere 4 years back. On examination, the corrected distance visual acuity (CDVA) in left eye was 20/200. The intraocular pressure was 14 mm Hg. Slit-lamp examination revealed corneal edema with Descemet’s folds [Fig. 1]. Specular microscopic evaluation was not possible owing to the corneal edema. She was diagnosed as pseudophakic bullous keratopathy and was being treated conservatively. She was also counseled about a lamellar corneal transplant. Posterior segment evaluation was within normal limits. The fellow eye examination was unremarkable and had a well placed in the bag IOL.

Since the position of IOL (sulcus versus bag) was not clearly seen and the cause of corneal decompensation was not certain, we decided to perform ultrasound biomicroscopy (UBM) and anterior segment optical coherence tomography (AS-OCT) imaging to visualize the anterior segment better. Both, the UBM [Fig. 2a] and ASOCT [Fig. 2b] showed a single lens fragment measuring 0.96 mm × 0.75 mm at 6 o’clock position in the anterior chamber. The IOL was well placed in the capsular bag with a Sommering’s ring circumferentially. Following thorough counseling, an anterior chamber (AC) wash was planned. Irrigation and aspiration (I/A) was performed and the fragment could be successfully...
removed. Postoperatively the patient was started on topical steroids and cycloplegics. The corneal edema showed gradual reduction and resolved completely within 3 months [Fig. 3]. The patient recovered a CDVA of 20/40.

2. Discussion

Retained lens fragment is a well-known complication of phacoemulsification surgery.\(^1\)--\(^4\) It has been theorized that lens fragments may remain hidden in the posterior chamber for years, causing low-grade inflammation that can escalate to corneal edema upon eventual migration to the anterior chamber.\(^5\)-\(^6\) Body positioning or changes in pupil size due to changes in ambient lighting may facilitate such migration.\(^7\) In majority of the cases the retained fragment is often picked up upon careful slit lamp examination and gonioscopy.\(^4\) The retained lens fragment here wasn’t visible on slit lamp and gonioscopic examination owing to the dense arcus. It was settled inferiorly and did not show any movements as well. Anterior segment imaging in this case helped find out a potential cause that triggered the inflammation and corneal decompensation. Apart from picking up the hidden fragment, imaging also ensured the IOL is well positioned and excluded the possibility of chronic uveal irritation caused by a malpositioned IOL.

3. Conclusion

This case highlights the importance of a thorough clinical evaluation supplemented with imaging modalities in order to make a complete diagnosis and eventually achieve better outcomes for the patient. In any case of unexplained corneal edema, either in the early or late postoperative period, UBM and ASOCT can become very helpful to determine the underlying cause.

Patient consent

Consent to publish the case report was obtained. This report does not contain any personal information that could identify the patient.

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Intellectual property

We confirm that we have given due consideration to the protection of intellectual property associated with this work and that there are no impediments to publication, including the timing of publication, with respect to intellectual property. In so doing we confirm that we have followed the regulations of our institutions concerning intellectual property.

Research ethics

We further confirm that any aspect of the work covered in this manuscript that has involved human patients has been conducted with the ethical approval of all relevant bodies and that such approvals are acknowledged within the manuscript.

IRB approval was obtained (required for studies and series of 3 or more cases)

Written consent to publish potentially identifying information, such as details or the case and photographs, was obtained from the patient(s) or their legal guardian(s).
Declaration of competing interest

None of the authors have any conflicts of interest in this report.

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