An intraocular eyelash after uneventful cataract surgery

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ABSTRACT

Purpose: The finding of an anterior chamber cilium after small incision cataract surgery is rare, with only five prior cases being found on literature review. Strategies include observation if there is no evidence of inflammation or infection and prompt removal if the situation changes.1-5 This case adds to the number of case reports and highlights that unexpected findings such as this can be seen on the first postoperative day exam and the clinical decisions made to remove it promptly.

Observations: A 69-year-old woman had uncomplicated phacoemulsification cataract extraction with posterior chamber intraocular lens implantation in the right eye using a superonasal corneal incision and inferotemporal paracentesis. Examination at 1 day noted a cilium in the anterior chamber. The cilium was removed the same day without complications.

Conclusions and importance: This case report shows that intraocular cilia can occasionally be seen following routine small incision sutureless cataract surgery even when there is no evidence of it immediately following surgery.

1. Case report

This is a case of a 69-year Chinese female who underwent routine phacoemulsification and intraocular lens (model SA60AT, Alcon) placement in her right eye. Subtenon’s anesthesia was injected inferonasally. No eyelash trimming was done. A 2.75 mm superonasal clear corneal incision and 1.0 mm inferotemporal paracentesis with disposable metal blades were used. Cefazolin was injected through the paracentesis into the anterior chamber at the end of the case. Both wounds were hydrated with balanced salt solution using 27-gauge cannula and verified to be watertight with a cellulose eye spear. This was followed by a gentamycin/dexamethasone mixture given topically. The eye was patched and shielded for 3 hours postoperatively and Chlorodext (Chloramphenicol/Dexamethasone) drops started every 3 hours while awake. On the first postoperative day, uncorrected vision was 20/20 and intraocular pressure was 13 mm Hg by Goldmann applanation tonometry. There was minimal anterior chamber cell and flare consistent with an uncomplicated phacoemulsification, no hypopyon, and the cornea was clear except for minimal edema at the clear cornea wound. After informing the patient of the finding, the decision was made to remove it on the same day. The removal was uneventful and on follow up checks one, seven, and thirty days later, her uncorrected vision was 20/20 with normal intraocular pressure and a quiet anterior chamber and clear cornea. No change in the postoperative drop regimen was indicated.

2. Discussion

In contrast to other organic materials, a cilium is relatively inert and is rarely associated with infection. However, the response of the eye to cilia can be unpredictable, ranging from severe intraocular inflammation to a lack of reaction for 50 years.7 Reports have cited decreased visual acuity, foreign body sensation, bacterial endophthalmitis, plastic iridocyclitis, granulomatous inflammation, epithelial cysts, corneal decompensation, vitreous fibrosis, and retinal detachment as a result of intraocular cilium following surgery or trauma.6

One case of cilium inoculation presented with anterior chamber cilium causing culture-negative endophthalmitis 3 days after phacoemulsification cataract surgery and was removed one week later once it was seen in the anterior chamber.7 In a second case, anterior chamber cilium was noted three days after small incision phacoemulsification surgery. The cilium pierced the corneal paracentesis, migrated into the posterior chamber, and re-emerged through the pupil to rest in the inferior angle. It was not removed and six months later, this patient was still without any ocular inflammation.8 A third case and forth case reported no inflammation with an anterior chamber cilium observed 4 and 5 years after phacoemulsification cataract surgery respectively.3,5

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Since no signs of inflammation or infection were present, our patient may have been closely observed. Intervention was performed since the risk of surgery was small and concern regarding the development of endothelial cell deficiency or endophthalmitis were present. After discussion of the risks and benefits with the patient of a return to the operating room to remove the eyelash, the decision was reached to remove it immediately. The clear corneal wound was entered with a cannula and using balanced salt solution and forceps, the cilia was grasped and removed from the anterior chamber. Prompt removal removed any anxiety (for the surgeon and patient) that it could provoke a future inflammatory reaction.

Routine video recording of surgery is done at our facility and showed no eyelash in the anterior chamber or floating in the tear film. Since the lash orientation was such that it was horizontal and with the pointed end proximal to the paracentesis location, I conjecture that it somehow entered the paracentesis via mechanisms described by three reports of eyelashes migrating into clear corneal paracenteses. In one of the cases the cilium migrated to the anterior chamber and in the other two cases it remained embedded into the paracentesis site. Several mechanisms of eyelash entry have been proposed. Eye rubbing may be able to distort the incision with significant manual pressure directly to the globe and allow the cilium to be entrapped in a corneal wound after uneventful small-incision cataract surgery. In addition, blinking and eyelid squeezing have been shown to result in dramatic intraocular pressure fluctuation and may have resulted in alteration of the incision to allow the lash entrance. One study using anterior segment optical coherence tomography to analyze the integrity of clear cornea incisions in 34 eyes 1 hour after cataract surgery showed epithelial gaping in 12% of eyes, endothelial gaping in 41%, and loss of wound coaptation in 9%.

Cilia, as well as other hair types, are structurally made up of overlapping cells whose free margins are directed toward the distal end. Postoperative eye rubbing may initially drive free cilia into the corneal wound, since the cilium’s cellular arrangement promotes ocular penetration by facilitating passage through ocular tissues in one direction only (i.e., proximal end first). The orientation of the lash in the anterior chamber for this patient supports the theory that the proximal end entered the anterior chamber first from the 1 mm paracentesis (see Fig. 1 and Fig. 2).

This case is unique because there is video evidence showing no cilia in the anterior chamber at the conclusion of the surgery. It reminds us that cilia may rarely find their way into the anterior chamber after routine cataract surgery and to educate patients to avoid eye rubbing after surgery as multiple authors have proposed that cilia may enter the eye postoperatively while the wound is healing. Prompt removal may minimize the chance of infection or inflammation.

Fig. 1. Slit lamp anterior view showing the cilia with the distal end nearest the inferior paracentesis.

Fig. 2. Slit lamp side view showing the cilia with the distal end nearest the inferior paracentesis.

Author declaration

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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).

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Appendix A. Supplementary data

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