Keratin pearl cyst formation after traumatic implantation of an eyelash into the anterior chamber: A case report

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ABSTRACT

Purpose: We introduce a case with creamy white pearl-like keratin cysts in the anterior chamber after a penetrating injury associated with eyelash implantation.

Observations: A 5-year-old girl presented with a history of penetrating corneal injury with a knife ten months ago. An eyelash was removed from the anterior chamber during her previous primary repair. Her parents complained about the presence of a white mass in her repaired eye, which had appeared about nine months after surgery. After the visco-expression of these solid masses, the histopathological evaluation revealed keratinous material surrounded by multinucleated giant cells.

Conclusions and importance: In a case of post-traumatic implantation of eyelash into the anterior chamber, despite removing the cilia, cysts may develop, which suggests proliferating epithelial cells embedded within the anterior chamber.

1. Background

Iris cyst formation subsequent to traumatic eyelash implantation into the anterior chamber (AC) is a relatively uncommon complication after a penetrating injury.1,2 Also, there are other causes of eyelash implantation into the AC, such as intraocular interventions.3 Even with an unclear etiology,4 the eye response to the presence of an eyelash could be inconceivable or sometimes significant as uveitis or cyst constitution.

Herein we introduce a child who presented with a floating whitish pearl-like keratin cyst in the AC after a penetrating injury associated with eyelash implantation.

2. Case report

We introduce a 5-year-old girl with a history of repaired penetrating corneal injury without iris prolapse secondary to a knife trauma ten months ago. The primary repair was done nine hours after ocular trauma, and an eyelash was removed from the AC during the primary repair. The patient didn’t take any local medications at the time of the visit or within a few months ago.

On ophthalmological examination, the corrected distance visual acuity (CDVA) was 20/20 in both eyes. IOP was 12 mmHg in both eyes. On slit-lamp examination, the right eye showed a peripheral corneal scar. There were three creamy white non-mobile smooth round cysts with no sign of pigmentation in the inferior part of AC (Fig. 1). The largest cyst was $1.3 \times 1.1$ mm. The crystalline lens and fundus examinations were normal.

Ultrasound biomicroscopy (UBM) showed round solid masses attached to the inferior part of the iris without ciliary body and iris stromal involvement. (Fig. 2). Anterior segment optical coherence tomography (AS-OCT) showed healed corneal scar and a highly reflective surface of the lesion with internal reflectivity, which confirmed the solid
nature of the lesion (Fig. 3).

A 3.2-mm incision was performed 90° superior to the cysts at the temporal quadrant during surgical removal. We used a cohesive OVD to sustain the anterior chamber during the procedure and visco-expression of the cysts. The cysts were easily dissected from the iris using OVD and a secondary instrument. Thereafter, they were removed from AC using viscoexpression. The postoperative best-corrected visual acuity (BCVA) and IOP were 20/20 and 11 mmHg, respectively.

Histopathological evaluation revealed keratinous material surrounded by multinucleated giant cells with no sign of pigmentation (Fig. 4a and b). These findings led to the diagnosis of an iris pearl cyst. In a one-year follow-up, no recurrent lesion was observed.

3. Discussion

Our patient developed keratinous solid masses after penetrating ocular injury associated with eyelash implantation. Various implications for the treatment of intraocular cilia exist based on clinical situations, such as conservational and surgical approaches. In our case, we removed the cilium during the primary repair. Unfortunately, despite the removal of the cilium, cyst formation occurred. There are different ways of eyelash implantation into the eye, such as intraocular operations or post-traumatic etiologies. Iris cysts can be primary or secondary; the former originates from the iris pigment epithelium or stroma. They can also be classified as congenital or acquired. Besides, secondary cysts occur as implantation cysts or secondary to drugs, ocular inflammation, tumors (e.g., medulloepithelioma), infections (e.g., parasitic), or systemic disorders. UBM can be used to differentiate the entities mentioned above. Cysts may originate from the lash root sheath epithelium or implanted surface epithelium. Our patient had an acquired cyst secondary to trauma and implantation of the eyelash.

Traumatic iris cysts are difficult to manage and have poor visual outcomes due to the extensive proliferation of epithelial cells and pre- and postoperative complications. Potential complications are corneal edema, iritis, hyphema, raised intraocular pressure, and cataract. Various treatments have been advocated. Treatment options include cyst aspiration, intracystic injection of low-dose antimitotic agents, aspiration and endodiathermy, laser iridotomy of the cyst, sector iridectomy, and iridectomy alongside cryotherapy. As many studies have found, surgical intervention has better outcomes and lower recurrences. However, because of the solid nature of the cyst in our case, complete cyst removal led to good visual outcomes with no recurrent lesions.

4. Conclusions

We described a keratin-filled cyst following penetrating ocular injury and post-traumatic implantation of the eyelash into the anterior chamber. Histopathological evaluation revealed that the cysts had an epidermoid and dermoid origin. The keratin-filled, pearl-like cysts were probably formed subsequent to the proliferation of the epithelial cells from the follicles and/or root sheaths of the implanted eyelash. This case alerts us that despite removing the cilia, keratin-filled cysts may develop due to the proliferation of embedded epithelial cells necessitating more careful follow-up.

Patient consent

Written consent to publish this case has not been obtained. This report does not contain any personal identifying information.

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Authorship

All authors attest that they meet the current ICMJE criteria for Authorship.
Declaration of competing interest

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