Corneal Trauma in a 6-Year-Old Boy

Figure 1. Superficial-appearing corneal injury.

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A 6-YEAR-OLD BOY PRESENTS WITH WORSENING PHOTOPHOBIA, IRRITATION, and redness in his right eye for 5 days. Three days prior to presentation, his primary care physician prescribed topical erythromycin ointment. Examination of the right eye reveals moderate conjunctival injection, a superficial-appearing corneal injury, and no evidence of a ruptured globe (FIGURE 1). Vision could not be assessed due to photophobia. Upon questioning, the child reports being poked in the eye a few times over the past week by his finger, a friend's finger, and a baseball cap. He claims that no sharp objects penetrated his eye. The remainder of the examination results are normal, including full extraocular motility and equal, round, and reactive pupils. The patient is afebrile and otherwise well.

What Would You Do Next?

A. Continue treatment with topical antibiotics and refer to an ophthalmologist if there is no improvement in 1 to 2 weeks
B. Discontinue antibiotics and follow up in a week
C. Refer to an ophthalmologist for potential full-thickness corneal injury
D. Swab the conjunctiva for possible conjunctivitis

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Diagnosis

Full-thickness corneal laceration of the right eye with an intraocular eyelash in the anterior chamber (FIGURE 2).

What to Do Next

C. Refer to an ophthalmologist for potential full-thickness corneal injury

The key clinical feature in this case is to have a high index of suspicion for serious eye trauma when evaluating a child presenting with an unwitnessed eye injury. A thorough examination of the anterior segment is needed to appreciate the irregular corneal surface, full-thickness corneal involvement, and intraocular eyelash, indicating a more serious injury than a corneal abrasion. Consultation with an ophthalmologist is indicated for further management.

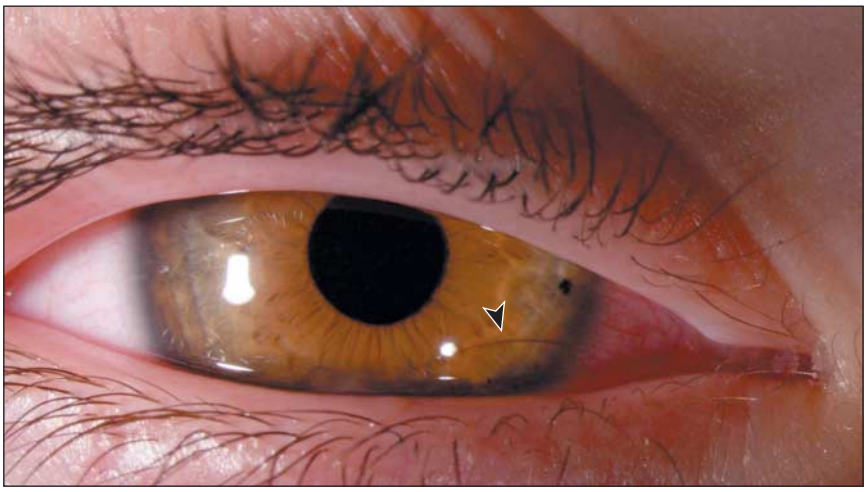

Figure 2. An intraocular cilium (arrowhead) in the inferior anterior chamber of the right eye.

Comment

The patient was referred to an ophthalmologist and slitlamp examination revealed a full-thickness corneal laceration with an eyelash, also known as a cilium, in the inferior anterior chamber that was embedded from the iris into the iridocorneal angle. The corneal laceration was self-sealing, with no leakage of aqueous. There was no hypopyon or hyphema. Vision was 20/25 in his right eye, 20/20 in his left eye, and intraocular pressures were normal. The blunt injuries reported by the child were not consistent with the corneal laceration, suggesting an additional unreported sharp, penetrating trauma.

Intraocular cilia have been found in many compartments of the eye such as the retina, iris, vitreous, lens, and posterior chamber, with anterior chamber occurrences being the most frequent.[1,2] Intraocular cilia are typically a consequence of a penetrating injury or an iatrogenic cause, such as ocular surgery.[1]

The ocular response to penetrative cilium in the anterior chamber varies from asymptomatic tolerance for decades to severe consequences such as anterior uveitis, posterior synechiae, cataract formation, and endophthalmitis.[1-5] These complications are likely due to concurrent introduction of microbes with the penetrative cilium, which may lead to intolerance and inflammatory sequelae.[1]

The decision to remove the intraocular cilium is debatable and multifactorial. Physicians must take into account the location of the cilium, the amount of inflammation, and other associated ocular injuries.[6] Because some patients can remain asymptomatic for years, some ophthalmologists may choose to observe the patient for any signs of inflammation. However, others advocate for prompt surgical removal because of the increased risk of subsequent complications, with endophthalmitis as the major concern.[1,6]

Patient Outcome

In this case, the ophthalmologist recommended surgery due to the patient's age, risk for infection, and need to explore the corneal wound further. The patient's family opted for surgical removal of the cilium. Iatrogenic cataract and postsurgical astigmatism were concerns. However, the cilium was removed without complications, and the corneal wound did not require suturing, limiting the amount of postoperative astigmatism. Subconjunctival injections of antibiotics were administered postoperatively. The patient was prescribed topical antibiotics, mydriatics, and steroids with instructions to limit activities, especially swimming, and to wear an eye shield over his right eye at all times for 2 weeks. Additionally, a week after surgery he was instructed to start patching the left eye for 30 to 60 minutes daily to prevent the development of amblyopia. Two-month follow-up demonstrated an inferior paracentral corneal scar, no intraocular inflammation, no cataract, and 20/20 vision in each eye.

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