Brief Communication

Guarding Sight: Traumatic Cataract Following Reflexive Self-Defense in a Teenager

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ABSTRACT

Traumatic cataract typically results from blunt or penetrating ocular injuries. However, cataract formation due to reflexive act of self-defense is exceptionally rare. We present the case of a 16-year-old boy who sustained trauma to his left eye while shielding himself during an altercation. The injury led to rupture of the anterior lens capsule and dense cataract formation. His best corrected visual acuity (BCVA) was counting fingers in the affected eye. Examination revealed circumciliary congestion, a corneal laceration, a Grade 4 anterior chamber reaction, a ruptured anterior lens capsule, and a white, opacified lens. Lens aspiration with in-the-bag intraocular lens (IOL) implantation was performed. Postoperatively, the patient regained 6/6 visual acuity, which remained stable over monthly follow-ups. This case underscores the importance of prompt diagnosis, timely surgical intervention, and patient education in preventing vision loss due to trauma.

Keywords: Cataract, Traumatic, Eye Injuries, Self Defense, Reflex, Visual Acuity.

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INTRODUCTION

Traumatic cataract is a significant cause of monocular blindness, particularly in young males.[1] It often arises from blunt or penetrating trauma, but other causes include electrical injuries, ultraviolet or ionizing radiation, and chemical burns.[2] While traumatic cataract due to self-inflicted penetrating injury has been reported in some cases, its occurrence during a reflexive act of self-defense remains exceedingly rare.[3]Here, we describe a case of a 16-year-old male who developed a dense cataract after an accidental ocular injury sustained while protecting himself during a physical confrontation.

Case Presentation

A 16-year-old male presented to the outpatient department with a sudden, painful decrease in vision in his left eye three hours after an altercation with peers. He had reflexively struck himself in the left eye while shielding against an anticipated punch during the argument. On examination, Best-corrected visual acuity (BCVA) was 6/6 in the right eye and counting fingers at 1 meter in the left. Slit-lamp examination of the left eye revealed circum-ciliary congestion and a sealed corneal laceration at the 3 O'clock position. The Seidel test was negative. The anterior chamber showed a Grade 4 reaction with more than 50 cells, and posterior synechiae extended from 2 to 6 O'clock. A ruptured anterior lens capsule from the 1 to 5 O'clock positions was noted, along with a dense, white, opacified lens (Figure 1).

Due to media opacity, the retinal status was not visible on direct examination. B-scan ultrasonography revealed a clear vitreous and an attached retina without any abnormal activity (Figure 2). Intraocular pressure was 12 mmHg bilaterally. The right eye was unremarkable.

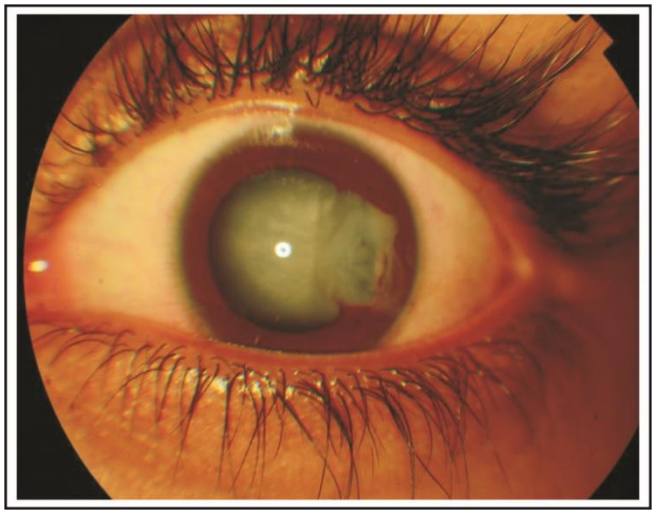

Figure 1: Left eye at presentation showing circumciliary congestion, sealed corneal laceration, posterior synechiae, ruptured anterior capsule, and a white cataractous lens.

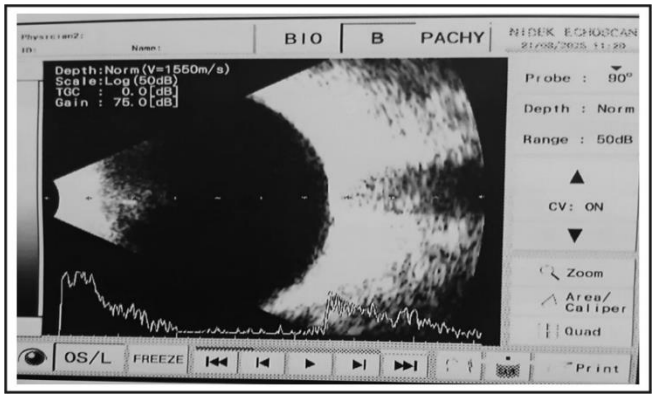

Figure 2: B-scan ultrasonography showing a clear vitreous and flat retina in the left eye.

Topical antibiotics, corticosteroids, cycloplegics, and lubricating drops were prescribed. After the intraocular inflammation subsided, the patient underwent left eye lens aspiration with in-the-bag IOL implantation under general anesthesia. A self-sealed corneal laceration was confirmed intraoperatively. Adequate pupil dilation was achieved. Despite the ruptured anterior capsule, a continuous curvilinear Capsulorhexis (CCC) was successfully performed, and a one-piece IOL was implanted in the capsular bag. The case was managed in accordance with the principles outlined in the Declaration of Helsinki. Informed consent was obtained from the patient and his guardians.

Postoperative recovery was uneventful. On the first postoperative day, the IOL was well-centered with a quiet anterior chamber (Figure 3). By one-month, visual acuity had improved to 6/6 and remained stable through three consecutive monthly follow-ups (Figure 4).

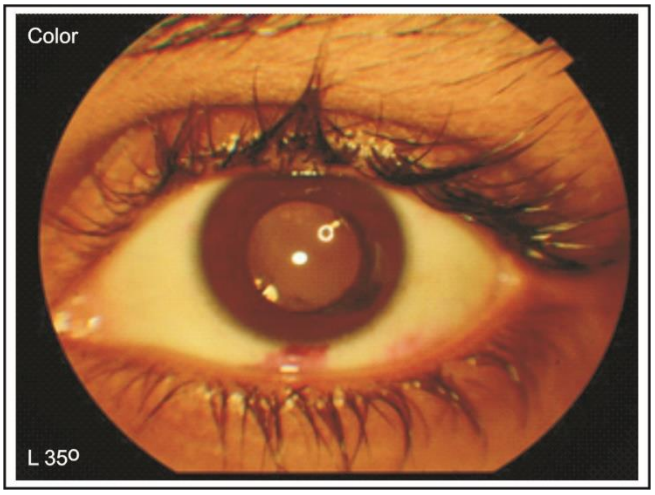

Figure 3: First postoperative day showing a well-centered intraocular lens in the left eye.

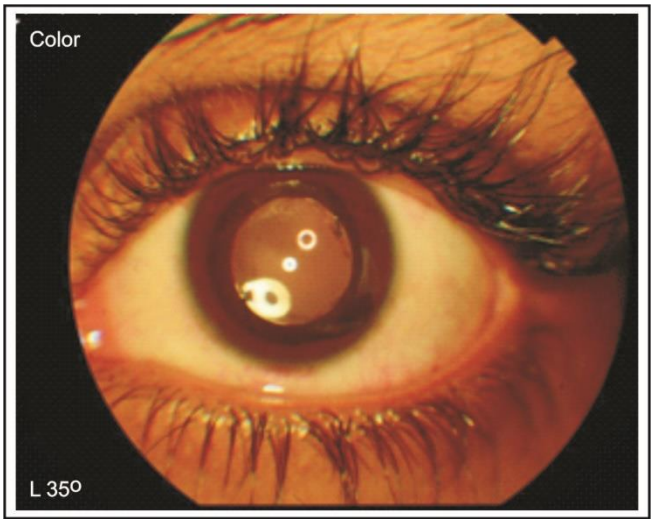

Figure 4: One-month postoperative follow-up with maintained 6/6 vision.

The patient and his parents were counseled during each follow-up visit on the importance of adhering to prescribed medications, regular follow-ups, avoiding further trauma, using protective eyewear, avoiding contact sports, recognizing warning signs of complications and the need for near-vision correction due to loss of accommodation with IOLs.

DISCUSSION

Ocular trauma remains the leading cause of unilateral cataract in children and young adults, with a higher incidence in males. In this case, the traumatic cataract developed following a rare mechanism accidental injury during a defensive reflex. The rupture of the anterior lens capsule caused lens proteins to leak into the anterior chamber, leading to an inflammatory response and opacification. B-scan ultrasonography was crucial for assessing the posterior segment due to media opacity, a diagnostic step also emphasized by Hegde et al.[4] Prompt medical attention by the patient's guardians allowed early intervention, which contributed significantly to the favorable visual outcome.

Such cases require proper counselling even after the treatment has been successful. Popoola et al,[5]described the role of effective counseling in reducing the incidence of vision-threatening trauma. Seimon et al,[6] also stressed the importance of community education in the prevention of blindness from ocular injuries.

Management of ocular trauma should be timely. Except for chemical injuries (which require immediate irrigation), an ophthalmologist should urgently evaluate all trauma cases. Family members should avoid administering home remedies or delaying medical care.[7] As described by Tabatabaei et al,[8] early inflammation control and surgical repair offer the best visual outcomes, as demonstrated in our case.

CONCLUSION

This case illustrates a rare cause of traumatic cataract following a reflexive injury during an altercation. It emphasizes the importance of thorough clinical evaluation, timely surgical intervention, and postoperative education. Preventive counseling for adolescents, parents, and schools is essential to reduce the risk of irreversible visual impairment from avoidable injuries.

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Conflict of Interest: Authors declared no conflict of interest.

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