

## Intralenticular Foreign Body with a Clear Lens

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### ABSTRACT

Intraocular foreign bodies (IOFBs) are not uncommon in patients of penetrating ocular trauma but intralenticular foreign bodies are rarely seen. Penetrating ocular injuries are observed more commonly in young men. Intralenticular foreign bodies cause visually significant cataract in almost all cases. We report here a case of a young soldier with intralenticular foreign body of about 1.5 mm in size sparing the visual axis and only causing focal cataractous changes. The foreign body remained innocuous for about 3 months of follow-up not causing any progressive cataract, glaucoma or uveitis. The foreign body was removed, lens aspiration was done and posterior chamber intraocular lens was implanted, as patient could not be followed on long-term basis. The vision was restored to normally within 2 months.

**Key words:** Crystalline lens. Trauma. Intralenticular foreign body.

### INTRODUCTION

Intraocular foreign bodies (IOFBs) account for approximately 40% of all penetrating ocular traumas and intra lenticular foreign bodies account for approximately 5-10% of all IOFBs. Such traumas predominate in young men.<sup>1-3</sup> When crystalline lens is injured, capsular integrity is violated and visually significant cataract may result, however, cases have been reported in international literature where even intra lenticular foreign bodies had not caused progressive cataractous changes.<sup>4</sup> No such case has been reported from Pakistan so far, where the crystalline lens remained clear despite an intralenticular foreign body.

### CASE REPORT

A 23 years old soldier presented to Eye Department, Military Hospital, Rawalpindi for routine annual medical examination. His visual acuity was 20/25 in right eye and 20/20 in the left. The vision did not improve with refraction. On slit lamp examination, there was a brown coloured foreign body in crystalline lens 1.5 mm in size, just nasal to midline inferiorly, sparing the visual axis and causing focal cataractous changes in right eye (Figure 1). Rest of the crystalline lens was clear. There was a 1.5 mm linear healed scar at 5 'o' clock in the anterior lens capsule showing entry wound. Corresponding healed laceration was seen on the iris and cornea. The

anterior chamber was quiet. There was no pigmented ring, heterochromie iridea or pupillary mydriasis. No cells in the vitreous were noted. Dilated fundus examination revealed no signs of retinal pigmentary degenerations. The intraocular pressure was 12 mm of Hg in both eyes.

On further inquiry, he gave history of trauma in right eye 6 weeks ago during firing practice. He immediately reported to a general practitioner with an uncomfortable red eye. He was given topical antibiotics and his symptoms resolved in a week time. Since then he was asymptomatic.

CT scan of orbit taken with 1 mm slices did not reveal any foreign body, signifying its non-metallic nature. He was managed conservatively on monthly basis, with electroretinogram (ERG) for any signs of retinal toxicity. Even after 3 months of follow-up, his vision was 20/25; the eye remained uncomplicated by uveitis, glaucoma, cataract (Figure 2), retinal pigmentary degenerations, or any ERG abnormality.

Removal of intralenticular foreign body along with lens aspiration and posterior chamber intraocular lens implantation in his right eye was then planned as follow-up with ERG was not possible for the patient on regular basis. The surgery was uneventful and his vision restored 20/20 unaided 2 months postoperatively.



**Figure 1:** Intralenticular foreign body 1.5 mm in size sparing the visual axis and causing focal cataractous changes in right eye.



**Figure 2:** Intralenticular foreign body with clear lens 3 months after injury in right eye.

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## DISCUSSION

When the crystalline lens is injured following ocular trauma, capsular integrity is violated and a visually significant cataract may form. It may require cataract extraction for visual rehabilitation.<sup>3,5</sup> In addition, the escape of lenticular proteins and particles may result in glaucoma and severe intraocular inflammation. The most serious complication of a retained iron-containing IOFB is the development of siderosis bulbi, which can occur even years after the injury.<sup>6,7</sup> However, cases have been reported when such injuries had resulted in clear lens with non-progressive focal cataract.<sup>8,9</sup>

The healing capacity of the anterior lens capsule is thought to result from the presence of the sub-capsular epithelium. If the capsular defect is less than 2 mm, epithelial proliferation rapidly restores its continuity thus limiting the free passage of ions and fluid thus avoiding progressive cataract formation.<sup>10</sup>

In the reported case, the soldier got injured during firing practice. The foreign body pierced the cornea and had caused full thickness wound which resulted in pain, redness and photophobia. He was not referred to ophthalmologist for his ocular complaints and was given topical antibiotics by general practitioner in field that resulted in healing of corneal wound. Since the foreign body was sterile, no corneal infection occurred and his symptoms subsided early. The foreign body pierced anterior lens capsule causing a defect of about 1.5 mm and reached in the cortex of crystalline lens. The capsular defect rapidly healed, thus limited the formation of cataract in right eye and preserving good vision. Moreover, the foreign body was inert and had not caused any grave complications till last follow-up.

Since long-term follow-up with ERG was practically not possible for the patient, he was planned for removal of IOFB, lens aspiration with phaco emulsification and posterior chamber intraocular lens implantation as the complications of intraocular foreign bodies like siderosis bulbi can occur even years after injury. The foreign body was removed along with crystalline lens in order to prevent any such complication. Though this surgery had

compromised his accommodative power for near vision but it prevented any late grave ocular complication which could have resulted in the loss of the affected eye.

It is concluded that use of the protective goggles should always be advocated in the circumstances of potential ocular trauma. Any case with intralenticular foreign body causing cataract merits cataract extraction, however, close monitoring with ERG is required in cases of intralenticular foreign bodies with clear lens. Such foreign bodies should immediately be removed along with lens aspiration if follow-up with ERG is not possible.

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