

Intralenticular metallic foreign body: a case report

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Abstract

• A case of retained intralenticular iron piece with signs of mild anterior uveitis at the time of presentation is reported in a 45 year-old man. His vision improved with topical cycloplegics and corticosteroids. After six months, his vision deteriorated grossly due to cataract formation. He regained good vision following removal of foreign body, extracapsular extraction with posterior chamber intraocular lens implantation. This case highlights the conservative management of the condition till the patient develops cataract resulting in visual disability; and good visual recovery following cataract surgery with intraocular lens implantation.

• **KEYWORDS:** intralenticular foreign body; anterior uveitis; traumatic cataract; penetrating eye injury

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INTRODUCTION

Intralenticular foreign bodies are rarely seen in ophthalmic practice. They constitute only 5%^[1] of all intraocular foreign bodies and may have fewer complications than other intraocular foreign bodies. In most cases the lens becomes opaque requiring cataract surgery for visual rehabilitation^[2,9]. The most serious complication of a retained iron containing foreign body in the lens is the development of siderosis bulbi, a sight threatening condition^[5,10]. Very rarely, the foreign body may not produce any inflammatory reaction in the eye, and it may be detected during slit lamp examination of the eye for cataract surgery^[11,12] or during cataract operation^[13]. A case of intralenticular metallic foreign body in a young man with good vision at presentation, who developed cataract after six months resulting in visual disability is reported.

CASE REPORT

A 45 year- old man presented to the eye clinic with history of injury to the right eye three days back while hammering a nail at the construction work place. He had mild redness of right eye associated with blurring of vision and sensitivity to bright light following injury. He was not wearing any protective glasses at that time. On examination, the vision in right eye was 6/18, improved with pinhole to 6/9. Slit-lamp examination showed mild circum corneal congestion. A small self sealed paracentral corneal wound was noted. Seidel's test was negative. There was mild flare in the anterior chamber indicating anterior uveitis. Pupil was normal. Intraocular pressure was 17mmHg. After dilating the pupil with tropicamide 1% (10g/L) eye drops, a small metallic foreign body was seen in the lower part of anterior cortex under the capsule. The lens showed opacity in the area around the foreign body only. Fundus was normal. Vision in the left eye was 6/12, improved to 6/6 with pinhole. Anterior segment, intraocular pressure and fundus were normal.

He was explained about the condition of the right eye and treated with homatropine 2% (20g/L) eye drops b.d. and dexamethasone 0.1%(1g/L) eye drops q.i.d. in right eye for anterior uveitis. Since the vision was 6/9 with pinhole, he was treated conservatively without any surgical intervention. After one week's follow-up, slit-lamp examination showed no flare in the anterior chamber. Homatropine was stopped and dexamethasone was reduced to b.d. in the right eye. In the second follow-up after two weeks, he was prescribed glasses; the best-corrected vision was 6/9 in the right eye and 6/6 in the left eye. Dexamethasone eye drops were stopped. He was advised to come for check up when he feels vision in the right eye is not good.

After six months, he presented with diminution of vision in the right eye. His vision was 6/36, not improved with pinhole. The eye was quiet and immature cataract was present. Slit-lamp examination showed a tiny paracentral corneal opacity and a small black colour foreign body in the lower part of anterior cortex at 6 o'clock position (Figure 1). Intraocular pressure was normal. Gonioscopy did not show any pigmentation in the angle. He was admitted for removal of foreign body, extracapsular cataract extraction and posterior chamber intraocular lens implantation in the right eye.



Figure 1 Slit-lamp photograph of right eye showing a small self sealed corneal opacity (black arrow) and the intralenticular metallic foreign body (white arrow)

Cataract surgery was done under local anaesthesia (topical, facial block and retrobulbar block). After making the fornix based conjunctival flap and partial thickness limbal incision, anterior chamber was opened and viscoelastic material was injected. Then, can-opener anterior capsulotomy was performed. The corneoscleral incision was extended. The foreign body was removed with McPherson forceps, and then the nucleus was delivered by pressure and counter pressure technique. After aspiration of cortical matter with Simco canula, viscoelastic material was injected into the anterior chamber and posterior chamber intraocular lens was implanted. The corneoscleral wound was closed with 10-0 nylon; the viscoelastic material was aspirated. The conjunctival flap was repositioned and sutured on the temporal side. Subconjunctival injection of gentamicin (20 mg) and dexamethasone (2mg) was given in the lower fornix; and the eye was patched. The black colour foreign body was of 2mm x1mm x1mm size and found to be magnetic (iron particle).

Postoperatively, he was treated with gentamycin 0.3%(3g/L) eye drops TDS and two hourly dexamethasone 0.1%(1g/L) eye drops for two days in the right eye. On the third postoperative day, he was discharged from the hospital; the steroid eye drops were reduced to four hourly. During follow up, the steroids were tapered and stopped after six weeks. His best-corrected vision was 6/9 and fundus was normal. He was followed up for one year. Vision with glasses remained the same in the right eye. There were no clinical signs of siderosis bulbi and the fundus was normal.

DISCUSSION

The management of intralenticular foreign body involves initial assessment of its size, site, material, potential for

infection, and degree of lenticular and other intraocular damage. Small and minute metallic foreign bodies which do not affect the visual axis, with clear lens and no other intraocular damage, may be observed after initial treatment with topical steroids. If any complication develops, then the lens/cataract extraction with removal of foreign body should be done. Medium to large metallic foreign bodies in the lens should be removed as soon as possible, as the risk of complication is much higher [14]. The choice of procedure of cataract extraction (extracapsular cataract extraction/phacoemulsification) depends on the surgeon's experience. The technique which the surgeon has more experience and which is least traumatic to the already injured eye must be preferred for removal of cataract. The metallic foreign body in the lens can be removed either with magnet or with forceps. Arora *et al* [6] suggested that use of McPherson forceps (intraocular lens holding forceps) rather than magnet is sufficient for removal of metallic foreign bodies.

Majority of the patients with retained intralenticular foreign body develop cataract formation which causes diminution of vision requiring surgery. However, progressive cataract formation is not inevitable. The presence of subcapsular epithelium makes the small breach in the anterior lens capsule heal quickly by rapid epithelial proliferation restoring its continuity, and limiting the free passage of ions and fluid that may progress to the development of cataract formation [15]. Patients with localized lens opacities and stable good vision for two years [3], 40 years [7], and 60 years [4] have been reported in the presence of a small, embedded foreign body in the lens. In addition to cataract formation, uveitis, glaucoma, abscess formation, endophthalmitis and intraocular metallosis have been occasionally reported [2].

The most serious complication of retained intraocular/intralenticular iron containing foreign body is the development of siderosis bulbi. The clinical features of this condition include iris heterochromia, pupil mydriasis, cataract formation, chronic uveitis, secondary glaucoma, retinal pigmentary degeneration and optic disc swelling [16]. The main reason for its rare occurrence nowadays is the early removal of the foreign body with the advent of recent surgical advances.

In the present case, there was mild anterior uveitis and a localized lenticular opacity in the lower part (not involving the visual axis) with good vision at presentation. Hence, conservative (medical) treatment was given. The small breach in the anterior capsule healed quickly; and that could be the probable reason for the delayed formation of cataract. When the patient experienced visual disability, cataract surgery with intraocular lens implantation was performed; and the visual outcome was good.

CONCLUSION

An intralenticular foreign body is a rare condition. It should be excluded whenever there is a self sealed tiny corneal wound following a penetrating injury to the eye, with a small hole in the iris and/or early cataract formation. Conservative management is a valid option unless the ocular function is compromised. During the cataract extraction, the foreign body can be removed with McPherson forceps after doing anterior capsulotomy. The visual outcome is good following cataract surgery with intraocular lens implantation.

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