Case report

Use of Scheimpflug imaging in the management of intra-lenticular foreign body

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Abstract

Introduction: Asymptomatic traumatic intra-lenticular foreign body is very uncommon and few case reports have been published. **Objective**: To report a case of post-traumatic intra-lenticular foreign body and use of Scheimpflug imaging in its management. **Case**: A 41-year-old male with history of injury to right eye during hammering a chisel 1 year back presented with decreased vision since 6 months. An intra-lenticular foreign body was found on slit lamp bio-microscopy and was confirmed by Scheimpflug imaging. Posterior capsule was intact on Scheimpflug imaging. Thus, Scheimpflug imaging helps in exact localization of the foreign body in the intralenticular space or behind the iris. We ruled out other foreign bodies by x-ray and ultrasonography of the orbit. The foreign body with post-traumatic cataract was removed using phacoemulsification and three piece foldable intraocular lens was implanted in the bag. **Conclusion**: An intra-lenticular foreign body may remain asymptomatic for months. Scheimpflug imaging can be useful in its localization. It can be removed during phacoemulsification.

Keywords: Intra-lenticular foreign body, cataract, IOL

Introduction

Intra-lenticular foreign body is a rare entity, contributing 5-10 % of total intraocular foreign body due to penetrating ocular injury (Arora et al, 2000). Intra-lenticular foreign body can remain undetected until and unless patients develop symptoms either due to traumatic cataract which is seen in 25 % of cases or due to intraocular inflammation (Cazabon et al, 2002). Males are more prone to these types of injuries because of more outdoor activities with metallic nature of intra-lenticular foreign bodies (Coleman et al. 1987). To prevent siderosis bulbi and visual disability due to traumatic cataract, the preferred management choice is early removal of the retained foreign body especially in view of advances in surgical techniques (Hope-Ross et al. 1993). Only one case report of localizing traumatic intra-lenticular foreign body utilizing Scheimpflug imaging has been reported (Grewal et al. 2006). We report a case of traumatic cataract and retained intra-lenticular foreign body that was removed successfully with phacoemulsification and foldable intraocular lens implantation in the capsular bag. The main objective of this case report was to show the usefulness of Scheimpflug imaging in management of intralenticular foreign body.

Received on: 14/02/14 Accepted on: 27/07/14
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Case report

A 41 -year-old male visited our ophthalmology department because of decreased visual acuity in his right eye of 6 months duration. The

patient had a past history of ocular trauma to the right eye while hammering metal 1 year before his visit. He had not been treated because he did not have any ocular discomfort. On presentation, his best-corrected visual acuity (BCVA) in the right eye was 6/18 with the intraocular pressure was 11 mm Hg. In the right eye, paracentral corneal opacity suggestive of entry point of foreign body, an incidental intra-lenticular metallic foreign body, and lens opacity were found. The posterior lens capsule was intact (Fig.1). There was no inflammation in the cornea or in the anterior chamber. Scheimpflug imaging was done which helped in exact localization of the foreign body in the intralenticular space (Figure 2). Posterior segment showed no definite abnormalities in either eye. A surgical approach was planned to remove the foreign body and cataract together with an intraocular lens implant. Under local anesthesia, capsulorrhexis of the anterior lens capsule and hydro-dissection and hydro-delineation of the lens were performed via a corneal incision site. The nuclear matter was de-bulked with phacoemulsification, allowing the foreign body to be mobilized and removed through the 2.8-mm corneal section. The foreign body was then removed with foreign body forceps. Phacoemulsification was completed and posterior chamber intraocular lens implantation was then performed. An AcrySof TM (MA60AC, Optic 6.0 mm, Length 13.0 mm, Alcon, USA) was implanted in the bag. The removed foreign body was identified to be metallic by a magnet. Postoperative recovery was uneventful and the best-corrected visual acuity was maintained at 6/6 at final follow up at 3 months. (Figure 3). Thus, Scheimpflug imaging helps in accurate localization of intra-lenticular foreign body. It also demonstrates about intactness of posterior capsule which decides the treatment.

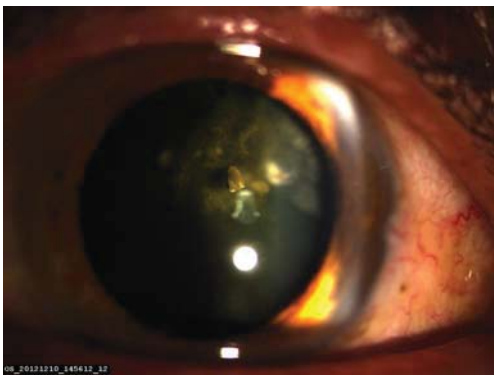

Figure 1: Slit lamp image showing presence of intra-lenticular foreign body with posterior sub-capsular cataract

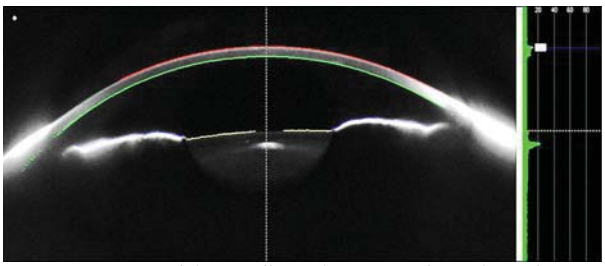

Figure 2: Schiempflug image showing intra-lenticular foreign body with intact posterior capsule

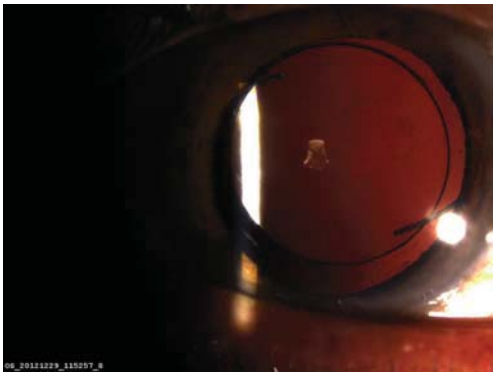

Figure 3: Slit lamp image showing well centered intraocular lens

Discussion

The frequency of IOFBs following penetrating eye injuries is approximately 40% and the incidence of intra-lenticular foreign bodies is approximately 5% to 10% (Arora et al, 2000). The natural course of a retained IOFB varies widely, small IOFBs may be completely resorbed (Begle 1929); the foreign body may

become encapsulated, may lose its magnetic properties, or become radiolucent to X-rays, as in this case; or rarely progressive siderotic degeneration may occur (Keeney, 1971). Other complications like cataract formation, uveitis, glaucoma, abscess formation, endophthalmitis and intraocular metallosis have been occasionally reported (Macken et al, 1995). Dhawahir-Scala et al (2005) reported an intra-lenticular foreign body which had been retained for 60 years with localized lens opacities and stable good vision.

If there is a small breach, anterior capsule has a healing capacity; epithelial proliferation rapidly restores its continuity, limiting the free passage of ions and fluid that may progress to the development of cataract (Seland et al, 1976). In our case, the size of the intra-lenticular foreign body was 1 mm and the capsular break was small enough to heal spontaneously. We believe that the intra-lenticular foreign body was retained and stable because of encapsulation, although there was no pathologic confirmation of this. The visual axis was not involved with the injured capsule or foreign body; this explains why the patient did not experience any ocular discomfort for a year despite the presence of the intra-lenticular metallic foreign body. Scheimpflug imaging helps ophthalmologists to accurately localize and map the trajectory of foreign bodies lodged in anterior segment allowing better decisions for management.

Conclusion

We conclude from our study that Scheimpflug imaging is an extremely helpful imaging modality for diagnosing anterior segment disorder as seen in our case.

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Source of support: nil. Conflict of interest: none