Intralenticular Ceramic Foreign Body: A Case Report

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Abstract

We are reporting a 25-year-old male, Egyptian ceramic worker, who presented to the Emergency Department of King Fahad University Hospital in Khobar, Saudi Arabia with a history of a ceramic piece which struck his right eye while working two days earlier. To our knowledge, this is the first case in literature, reporting an intralenticular ceramic foreign body.

Key Words: Penetrating eye injury – Intralenticular foreign body – Non-metallic foreign body.

Introduction

INTRALENTICULAR foreign bodies (ILFB) are rare, accounting for 5% of all intraocular foreign bodies [1]. There are two type of foreign bodies, i.e., metallic and non-metallic. The majority of ILFB are metallic, reaching up to 86% [1]. The most serious complication resulting from iron-containing ILFB is siderosis bulbi, which is a sight threatening condition [2,3].

In this report, we describe a case of intralenticular ceramic foreign body with good visual acuity at presentation, who was treated with lens extraction and anterior vitrectomy for removal of an ILFB.

Results

In January 2013, a 25-year old Egyptian male patient came to the Emergency Department of King Fahad University Hospital in Khobar, Saudi Arabia, with a history of trauma by a sharp ceramic object to his right eye 2 days earlier.

The visual acuity was 20/40, 20/20 in the right and left eye, respectively. The intraocular pressure was 13mmHg in his right eye and 16mmHg in his left eye. Anterior segment examination of the right eye showed self-sealed corneal laceration Fig. (1), three plus (3+), anterior chamber cells and flare, iris sphincter tear at 10 O’clock position and intralenticular foreign body Fig. (2). There was no retinal involvement. Left eye biomicroscopic and fundus examinations were unremarkable.

B-scan ultrasound of his right eye confirmed the presence of a single large intra-lenticular foreign body and a scan wave revealed highly reflected spike of the foreign body Fig. (3). Plain X-ray water view of the orbit revealed right single foreign body Fig. (4). Computerized tomography (CT) scan axial and coronal view revealed hyperdense structure in the lateral part of the right lens Fig. (5).

Topical prednisolone acetate 1% and topical cyclopentolate 1% were given for 10 days to subside the ocular inflammation. Surgical approach was done by applying two self-retained iris hock placed at 7 and 10 O’clock to assist visualization. Posterior synechiae were released from the foreign body. Limbal incision 6mm temporally was done Fig. (6) and the foreign body was removed by Kelman McPherson forceps.

During removal of foreign body, we noticed rupture of the posterior capsule. So, automated anterior vitrectomy was done.

The foreign body measured 5x4mm Fig. (7). Since the view was not clear to see the remnant of the lens capsule, the decision was made for secondary intraocular implant when visualization becomes better and to evaluate the capsular support by biomicroscopic examination in the clinic.

Two weeks later, dilated pupil biomicroscopic examination revealed good capsular remnant to support intraocular lens implantation. So, posterior chamber multi-piece polymethyl-methacrylate (PMMA) non-foldable intraocular lens was implanted into the sulcus using the same previous limbal incision. One week later, the best corrected visual acuity was 20/60 and the eye was quiet.
Fig. (1): Sealed full thickness corneal laceration.

Fig. (2): Intra-lenticular foreign body, measuring about 5mm.

Fig. (3): B scan showing intralenticular foreign body by emersion technique and the A scan showed highly reflective spike.

Fig. (4): Plain X-ray showing solitary ILFB.

Fig. (5): Axial and coronal views showing hyperdense structure in the lateral part of the right lens.

Fig. (6): Intraoperative view of foreign body in anterior chamber and one iris hook retractor is seen.

Fig. (8): The size of foreign body 5x4mm.
Discussion

After thorough review of literature, it has been realized that there was a report of only one case of ceramic intraocular foreign body on the iris surface [4] but there was not a single reported case of ceramic foreign body in the lens. Different kinds of foreign bodies in the lens had been reported, like wood, glass [5,6], iron [7] and caterpillar setae [8]. However, to the best of our knowledge, this is the first case reporting large ceramic ILFB.

Serious ophthalmic complications can be caused by retained ILFB including endophthalmitis, glaucoma, cataract, retinal detachment and siderosis bulbi [9,10].

Retained ILFB can be managed conservatively if no ophthalmic complications such as uveitis, cataract or siderosis bulbi developed [11].

Conservative management of ILFB for different periods was reported for many cases. Cazabon and Dabbs reported a case of retained small ILFB for 40 years with no ocular complications [12]. Dhawahir-Scala and Kamal reported a case of small retained ILFB of unknown nature for 60 years without any ophthalmic complications [13]. However, frequently, if the ILFB was left without intervention it may lead to lens particle glaucoma [6] or progressive cataract [10,14]. Such complications can be avoided by early removal of ILFB.

In our case, the patient had clear lens but there was moderate anterior uveitis due to the large size of the ILFB. The anterior capsular tear was large. Consequently, the probability of anterior capsule healing was low and most likely the patient was at high risk of developing phacoantigenic glaucoma and traumatic cataract. So, the decision was made for surgical intervention to avoid such complications.

Conclusions:

Early removal of a large ILFB can be beneficial even if visual acuity was satisfactory at presentation.

References