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Retained Intraorbital foreign bodies - A Short Case Series

**Dr. Soumya Swarup Chatterjee¹, Dr. Alipta Bhattacharya², Dr. Apala Bhattacharya³,
Prof.(Dr) Gautam Bhaduri⁴**

1. Associate Professor, Regional Institute of Ophthalmology, Medical College, Kolkata, 88, College Street, Kolkata-700073

2. Demonstrator(Anatomy), Malda Medical College, Malda-732101

3. Assistant Professor, Regional Institute of Ophthalmology, Medical College, Kolkata, 88, College Street, Kolkata-700073

4. Professor And Director, Regional Institute of Ophthalmology, Medical College, Kolkata, 88, College Street, Kolkata-700073

Name of corresponding author : Dr. Alipta Bhattacharya

ABSTRACT

Intraorbital foreign in different forms are seen quite commonly in all age groups. They require prompt and adequate management for salvaging the patients vision. This retrospective case report reviews the clinical features, appearance and management of four cases with intraorbital foreign bodies where the normal vision of the patient was retained.

Key Words. Intraorbital foreign bodies and their management

INTRODUCTION

An intra-orbital foreign body is an object that lies within the orbit but outside the ocular globe. These objects can be classified according to their composition as (1) metallic, such as steel; (2) non-metallic, which may be inorganic, such as glass; and (3) organic, such as wood or vegetable matter. In general, injuries caused by metal and glass are well-tolerated and, if they do not have any symptoms or signs, may be left in situ, whereas organic matter, such as wood and vegetable matter, is poorly tolerated, triggers an intense inflammatory. They usually occur due to industrial accidents or can also occur due to trivial trauma¹. Retained foreign bodies can be associated with a number of complications which can lead to loss of vision. Complications usually depend on the type of injury and on the nature of the foreign body. Foreign bodies can be organic or inorganic. Inorganic or metallic foreign bodies are usually inert and even if retained for a long duration are usually well tolerated. However organic or vegetative foreign bodies lead to severe inflammatory response and if not adequately managed can be extremely dangerous.² Surgical decision making depends on the nature of the foreign body, involvement of optic nerve, extraocular muscles and presence of infection.

CASE REPORTS

CASE 1- A 4 ½ year old child with pre existing cerebral palsy presented to us with a 2 day history of a wooden foreign body impaled in the lower conjunctival fornix in the medial aspect of the left orbit. The patient had sustained the injury when he had inadvertently fallen face down on a bundle of firewood. There was pain, lid swelling and mucopurulent discharge.

On examination a wooden foreign body impaled in the medial aspect of lower left fornix was seen. The left eye was painful with swelling and redness of the lids and periorbital area. The visual acuity could not be assessed. Conjunctival chemosis was present with profuse mucopurulent discharge. The cornea was clear and the pupils were round and reacting briskly to light. Motility was restricted but was difficult to evaluate. Fundus appeared normal on direct ophthalmoscopy. Inj. TT was given. The patient underwent exploratory surgery under general anaesthesia. Around 20 mm from the limbus at the lower fornix a hard wooden mass was seen impaled. The mass was in contact with sclera and was medial to the inferior rectus. The mass was grasped with forceps and withdrawn. It was seen to be a broken piece of firewood measuring 7x1.5 cm. The wound was sutured and subconjunctival inj. Gentamycin + dexamethasone given. Post operative IV ceftriaxone was started and recovery was uneventful. At 2 weeks post op conjunctival chemosis lid swelling had subsided. The wound was healthy with slight conjunctival congestion at the lower fornix. There was no restriction in ocular motility and the patient could follow light. There was no sign of infection of the sinuses. The patient was asked to review at regular intervals.

CASE 2- 65yr/m presented with history of bamboo stick injury in his left eye, 3 days back. The patient had been unloading bamboo sticks when one slipped and hit him in his left eye, a piece of the bamboo had entered into his left orbit. On examination the left eye was painful with hyperaemia and swelling of the lid with complete restriction of movement of the eye. The vision in the left eye was finger counting at 4 feet while it was normal (6/12) in the right eye. A bamboo foreign body was seen impaled in the inferior aspect of the left orbit penetrating the lower lid. Cornea appeared clear and pupils were reacting briskly to light, though due to the intense inflammation of the lid it was difficult to examine. Central fundus appeared normal. A CT scan was done and the foreign body was identified as an air pocket in the inferior aspect of the left orbit. There was associated fracture of floor of the orbit. There was soft tissue swelling suggestive of cellulitis/inflammation. Optic nerve seemed normal and the globe appeared intact. Inj. TT was given. The patient was started on intravenous antibiotics (ceftriaxone + metronidazole) to control the infection. Anti-inflammatory drugs were given to control the intense swelling and pain. The patient was taken for surgery under general anaesthesia. Exploratory surgery was done under general anaesthesia. On the inferior aspect of the lower lid a bamboo stick foreign body was seen impaled. It was grasped with forceps and withdrawn. It was seen to be a broken piece of bamboo about 4x2 cm in size. The wound was irrigated with saline and sutured. IV antibiotics were continued post operatively. Swelling subsided, vision improved to 6/18 and the patient gained almost full ocular motility.

CASE 3- A 12 year old girl presented with the tip of a compass (pointed instrument of a geometry box) embedded in the lateral aspect of the right orbit. The patient had been referred from a peripheral hospital where the compass had been snapped off using wire cutters. On examination visual acuity was found to be 6/6 in both eyes. Examination of the left eye was unremarkable. Examination of the right eye revealed normal position of the globe in the primary gaze. There was lid oedema, mild conjunctival congestion, chemosis and subconjunctival haemorrhage in the lateral aspect of the eye over the insertion of the lateral rectus muscle. Ocular motility was restricted with limitation of abduction and adduction. There was however no globe penetration and the intraocular structures did not reveal any abnormality. Fundus examination was within normal limits. CT scan of the orbit was done and it revealed a radio-opaque foreign body penetrating the lateral orbital wall of the right orbit and embedded in the lateral rectus muscle. The girl was admitted and put on

intravenous ceftriaxone 1g BD and topical moxifloxacin eye drops. Inj TT was given. The child underwent exploratory surgery under general anaesthesia. The mass was grasped with forceps and withdrawn. The globe was not involved, haemostasis was achieved and the skin was sutured with 2-0 silk. Post operatively gatifloxacin drops were instilled 8 times daily. Recovery was uneventful. The visual acuity was unaffected and full ocular motility was obtained .

CASE 4- A 6 yr old boy presented with a large metallic shrapnel impacted in his left orbit. The patient had sustained the injury in a bomb blast, about 2 days back. Visual acuity was found to be 6/12 in the left eye while it was 6/6 in the other eye. The reduced vision was probably due to the corneal epithelial burn and not directly related to the impacted foreign body. There was lid swelling and associated charring of the eyelashes and eyebrows. conjunctiva was congested and the patient had severe photophobia and blepharospasm. Superficial facial burn was also present. CT scan of the orbit revealed penetration of the inferior orbital wall. Globe appeared intact.

Primary saline wash was given and charcoal debris was removed immediately and the eye was padded. The patient was given intravenous ceftriaxone and topical moxifloxacin + dexamethasone, artificial tears, cycloplegic drop and posted for surgery. Exploration was done under general anaesthesia.

The metallic plate was first bent according to the contour of the inferior orbital rim. And then in a rotating motion the foreign body was pulled out of the inferior orbital wall while pushing the globe upwards to protect it. The skin was sutured with 2-0 silk. Recovery was uneventful and visual acuity was 6/6 at discharge.

DISCUSSION

4 cases with intraorbital foreign bodies have been discussed. The pertinence of this paper lies in the fact many a times an intraorbital foreign body is missed on examination either because the attending physician is more concerned with the injuries of the vital organs or because the orbital wound was trivial.³ In this study two were metallic and two were metallic foreign bodies. In our first case we noted that the point of entry was through the fornix. Had there been no severe reaction there was ample chance that the retained foreign body could be missed. So In patients with a known or suspected site of penetration, special emphasis should be given to check the conjunctiva and fornices closely.⁴ In all the cases globe was not involved directly and the vision of the patient could be saved. However posteriorly locate foreign bodies can cause optic nerve compression and result in profuse visual loss.⁵ Cases are on record where unilateral papillary defect in a post trauma case resulted in a diagnosis of Retained intraorbital foreign body causing optic nerve irritation.⁶ Clinical examination can often be misleading in cases of penetrating trauma and imaging studies are of utmost importance. CT scan is the modality of choice.⁷ It helps in localising as well as estimating the dimensions of the foreign body and determining the presence or absence of any inflammatory response. Wodden foreign body if small may be difficult to diagnose using CT^{8,9} and in those cases MRI¹⁰ has been recommended. Intraorbital Foreign bodies have to be treated early before complications supervene. Only in cases where the foreign body is small, inert and posteriorly located, the can be left as such. Early and prompt surgical intervention in all other cases with regular follow forms the keystone to management of Intra orbital foreign bodies.

CONCLUSION

Intraorbital foreign bodies may present in multiple ways. CT scan is the primary diagnostic modality in metallic foreign bodies, MRI being the modality of choice for nonmetallic ones. Prompt presentation to the ophthalmologist combined with early surgical rehabilitation forms the cornerstone of management.

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