

## Case Report

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# An unusually large intraorbital wooden foreign body with an intact globe-“Bark”ing up the wrong tree

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### Abstract

**Background:** Intraorbital foreign body is a rare cause of ocular morbidity and can be seen following penetrating trauma. Such injuries occur following road traffic accidents or workplace accidents, more so in cases where adequate protective equipment, such as helmets, are not worn. However, if not diagnosed early and treated immediately there is an increased possibility of developing ocular infection, More so for a foreign body made up of wood . In this case report, we describe a rare case of a huge wooden foreign body penetrating the orbit.  
**Case report:** A 34-year-old man in inebriated condition presented to the emergency department with an alleged history of being in a road traffic accident, resulting in a fall from

his motorbike, 3 hours before presentation. On examination the patient had a cut lacerated wound over the upper and the lower eyelid extending over the nose. The branch of a tree, measuring 8cm in size, was present medial to the globe. Anterior segment evaluation of both eyes was normal. Imaging revealed right orbital blow out fracture with minimal herniation of orbital fat, with fracture of the posterior wall of the maxillary sinus. Surgery was done on the same day and the branch was removed under general anesthesia and the lid tear was repaired. Postoperative period was uneventful with good recovery of vision. **Conclusion:** The management of intraorbital foreign bodies requires thorough evaluation for a better understanding of the condition. Timely surgical management is the best treatment



Figure 1: The tree bark penetrating the orbit medial to the globe.



Figure 2: The CT image showing the intraorbital extent of the foreign body

option to avoid infections and other complications.

**Keywords:** Intraorbital wooden foreign body, trauma, Computer tomography scan, road traffic accident.

## Introduction

Intraorbital foreign bodies are seen in one out of six orbital injuries. Wooden foreign bodies are rare. (1) The position depends upon the kinetics, trajectory and nature of the foreign body. (2) These are most commonly seen after a high velocity injury, such as industrial injuries, (3) and are classified as organic and inorganic. Inorganic foreign bodies can be metallic or non-metallic. 1,2,3 Organic foreign bodies like wood can cause infection, hence thorough examination and appropriate imaging is necessary. (4) Since a wooden foreign body can be a nidus of infection, it has to be treated promptly; else severe complications such as endophthalmitis can occur. (5)



Figure 3: The total length of the foreign body as measured against a scale

## Case Report:

A 34-year-old man presented with an alleged history of a road traffic accident. The patient, who was in an inebriated state, was riding a motorbike when he lost control and hit the median and collided against the branch of a tree. Following this, the patient sustained injuries to the right side of the face, resulting in a branch of a tree penetrating the medial side of the right orbit. On examination, there was a large wooden foreign body penetrating the medial aspect of the right orbit, whose

exposed end was approximately 8 cm in size and was directed upwards. Vision assessment at the bedside was found to be at least counting fingers at three meters. Examination of the right eye revealed no abnormalities. A cut lacerated wound of size seven centimeters was present across the face, over the nose extending to the lower lid, involving the medial canthus. (Figure 1) Levoversion was restricted due to the foreign body. Computed tomography (CT) of the brain and orbit showed fracture of the right frontal process of the maxilla, the anterior, medial and posteromedial wall and roof of the right maxillary sinus. A large foreign body was seen in the right medial side of the orbit extending into the orbital cavity, abutting the inferior rectus muscle with its tip in the maxillary sinus. The globe and the optic nerve appeared normal. (Figure 2) Opinions were also sought from the departments of neurosurgery, otorhinolaryngology and oromaxillofacial surgery. Preoperatively patient was started on antibiotics and non steroidal anti-inflammatory drugs. Intraoperatively, it was found that the intraorbital length of the branch measured 6cm, along with extensions inferior to the globe. It stopped just short of the orbital apex. Along with an inferomedial orbitotomy to expose the entire foreign body, dissection was done inferior and lateral to it, and whole of the foreign body was exposed and removed. The total length of the branch was 13 centimeters, with a breadth of four centimeters (Figure 3). The lid was then repaired with 6-0 prolene suture (Figure 4). Postoperatively, the wound was healthy. Broad-spectrum antibiotics were continued and the patient was started on oral corticosteroids. On a vision assessment with Snellen's chart, the vision was 6/18 and improved to 6/6 on pinhole examination as the patient was a known myope and was using glasses before the accident. On anterior segment examination the cornea was clear, pupils were round regular and reactive with no evidence of relative afferent pupillary defect. Extraocular movements were full and painless in both the eyes. Visual fields done by confrontation method were normal. On dilated



Figure 4: Immediate post-operative appearance at the end of surgery.

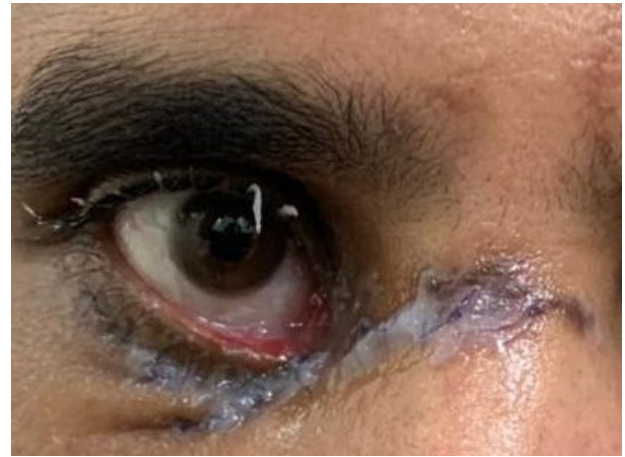


Figure 5: Post-operative appearance after 1 month showing medial ectropion, but no evidence of enophthalmos.

fundus examination, fundus appeared normal with no signs of indirect traumatic optic neuropathy. The patient did not develop enophthalmos during the third month follow-up, but developed a medial ectropion.(Figure 5) The patient was found to have a refractive error which was then corrected. This is a vitrectomy probe but it is malfunctioning so there is no cutting only aspiration and what you see how the iris is moving during the process this is not because of a pressure problem it is because you have vitreous but you cannot see that vitreous unless you put triamcinolone into the eye now you can see if it vitreous prolapse into the body of the lens into the anterior chamber and even through the wound to the exterior so you must always consider what happens when you aspirate anterior vitreous this is what happens if you can see there was a retinal dialysis because not by the injury but by the inappropriate intervention.

## Discussion

Orbital foreign bodies can be seen following a fall or due to penetrating injuries,<sup>6</sup> high velocity injuries and road traffic accidents. In this patient, there was a wooden intraorbital foreign body due to a road traffic accident, where he was not wearing a helmet and was driving under the influence of alcohol. It has been noted that though helmets are important in preventing facial injuries, visors are important in preventing eye and orbital

injuries.<sup>7,8</sup> Wooden foreign bodies are exceptionally challenging to treat due to the mechanism of their implantation, their coarse irregular surface and the presence of various other organic matter on their surface, which may be a cause for infection later on. The patients' symptoms may vary from being completely asymptomatic to losing vision due to endophthalmitis. The nature of the injury, the size of the foreign body, and the time of presentation are important factors in determining the symptoms and signs. Thus, early diagnosis and immediate surgical extraction of the foreign body is of paramount importance. In this patient, despite the presence of a large intraorbital foreign body, there were no ocular abnormalities and vision was not affected. Different imaging modalities, like X-Ray, computed tomography, magnetic resonance imaging can be used for the proper diagnosis regarding the size and extent of the foreign body, including intracranial extension. In our case we have used the computed tomography to ascertain the level of the penetration of the foreign body and the involvement of the adjacent structures. It has been noted that most intraorbital foreign bodies lead to some amount of ocular damage.<sup>9</sup> However, in our case despite the size of the foreign body there was no damage to the ocular structures. Even history stands evidence to the fact that appropriate use of a helmet and immediate therapy can be vital in the case of an intraorbital foreign body. Henry II, the King of France, was injured by a lance,

when the visor of his helmet was not properly fitted, and the foreign body thus lodged was not removed, leading to orbital cellulitis.<sup>10</sup> Intraorbital foreign bodies are difficult to treat and diagnose. They require a high level of suspicion, a multidisciplinary approach, combined with excellent imaging modalities. As there are high chances of infection, prompt and thorough removal of the foreign body is important. This report also emphasizes the importance of using protective equipment like helmets while riding motorbikes

### Declaration of Interest

Authors have declared that no competing interests exist.

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