CASE REPORT

Manpreet Singh\textsuperscript{1}, Shweta Gupta\textsuperscript{2}, Shyamlendu Laskar\textsuperscript{2}, Ankit Kumar\textsuperscript{3}

ABSTRACT
Foreign bodies embedded deep in facial tissues presents a challenge to maxillofacial surgeons. After facial trauma foreign bodies like grit particles, wooden pieces, thorns, pebbles, glass particles may get embedded into deeper facial tissues which are detected only accidentally either with the help of radiographs or at a later stage when patient presents with some signs & symptoms like pain, pus discharge, sinus formation etc. Trauma to maxillofacial region especially after road traffic accidents is one of major cause of entrapment of foreign body, but many of these cases go undiagnosed. In this manuscript we reported a case of localized osteomyelitis and foreign body reaction in a 40 year old male patient with the chief complaint of difficulty in mouth opening and pus discharge since 2 and half month.
Key words; Foreign body, orbit, trauma

Introduction

Love of your life is to love of your own faces.

Shushruta, 600BC

Foreign bodies embedded deep in facial tissues presents a challenge to maxillofacial surgeons. After facial trauma foreign bodies like grit particles, wooden pieces, thorns, pebbles, glass particles may get embedded into deeper facial tissues\textsuperscript{5}. Approximately one-third of all foreign bodies are left undiagnosed during initial clinical examination\textsuperscript{5}. An intra-orbital foreign body is an object that lies within the orbit but outside the ocular globe. Orbital foreign bodies are commonly observed in males and in younger patients because they are more prone to maxillofacial injuries\textsuperscript{2}

The structural and functional damage to the globe and the orbital contents caused by these objects depend upon the size, location and the time elapsed after the injury. These objects can be classified as metallic, nonmetallic or organic matter\textsuperscript{1}.

Imaging plays an important role in localization and diagnosis of these objects. However, despite modern imaging modalities it is often difficult to diagnose organic foreign material. After proper diagnosis surgery is planned on the basis of the size and nature of the foreign body (organic objects are usually poorly tolerated), the location (anterior or posterior orbit) and the presence of other injuries\textsuperscript{1}. Surgical retrieval of foreign objects can lead to injuries of concerning anatomic structures and is always focused on preservation of oculomotor muscles, eyeballs and optic nerve functions\textsuperscript{7}. If infra-orbital foreign bodies are left undiagnosed, late complications such as infraorbital granuloma\textsuperscript{12}, osteomyelitis, disturbance of vision, brain abscess, and death may occur\textsuperscript{5}

Case Report

A 48 year old male patient reported to Department of Oral and Maxillofacial Surgery, with the chief complaint of difficulty in mouth opening and pus discharge on mouth opening since 2 and half month.
History of present illness revealed that two and a half month earlier while he was working under a tree, a wooden branch from a falling tree fell upon his face. After that he noticed reduction in mouth opening and pus discharge beneath left eyelid. *(Figure 1)*

He consulted many doctors in Rampur and surrounding area and was on antibiotics for long term but his symptoms did not relieved after that he was referred to our center for needful treatment. After thorough examination a clinical diagnosis of osteomyelitis with suspected foreign body in the left side was diagnosed and for confirmation a CT scan was advised which revealed slight bone loss along the orbital wall *(Figure 2)* but did not provide much information on foreign body so it was decide to surgically explore the orbit through subtarsal insision, allowing exposure of orbital floor.

*Figure -1*

*Figure -2*

*Figure -3*

*Figure -4*

*Figure -5*
Dissection was carried posterior and a foreign body. (Figure 3) was observed in the posterolatetal floor extending till greater wing of sphenoid with localized bone loss. The foreign body (woden piece) was retrieved from the surgical site (Figure 4) followed by meticulous curettage, which was of size approximately 70 mm (Figure 5).

Copious irrigation was done with normal saline and 2% povidine iodine and closure was done in layers. Intraoperatively hysther mouth opener was applied and mouth opening of 35-40 mm was achieved.

Patient was followed up for up for a time period of three months, sutures were removed 1 week post operatively no complications were reported. Mono ocular Diplopia resolved completely in a time period of one month. Patient did not reported any further reduction in mouth opening, pus discharge or diplopia.

Discussion

Based on the chemical composition, intra orbital foreign bodies can be classified into (1) metallic, such as steel; (2) non-metallic, which may be inorganic, such as glass; and (3) organic, such as wood or vegetable matter. Wood, with its porous consistency and organic nature, provides a good medium for microbial agents. Infections resulting from retained intra-orbital wooden foreign bodies may lead to complications such as pan-ophthalitis, abscess, and fistula. Orbital fat tends to conceal the trajectory, making it difficult to identify the point of entry. Thus, suspicion is crucial for defining the diagnosis. The nature of injury and object can be elicited by detailed history. The clinical presentation varies from being asymptomatic or having visual disturbances, pain and swelling. Plain film radiography is useful to localize radiopaque objects. However, plain films lack the capacity to demonstrate the object details, their exact location in relation to surrounding structures and tissue response or damage. Magnetic resonance imaging should be avoided when there is the suspicion of metallic foreign body, as the magnetic field may lead to the movement of the metallic structure. Hence CT scanning is considered to be gold standard for diagnosing intraorbital foreign bodies. CT findings of wooden foreign objects vary over time. In the acute stage, the very low density of wood can mimic air bubbles. In this stage, intraorbital air may represent organic object, orbital emphysema associated with sinus fracture, or inserted air during primary trauma; however, a single well defined radiolucency in the absence of sinus fracture should raise the possibility of wooden object specially when there is a history of trauma with wood stick. In the sub-acute stage, wood assumes a moderate density and may be difficult to distinguish from surrounding orbital fat, which may account for the potential difficulty of recognition. In the chronic stage, the density of wood can become higher than that of extraocular muscles. Metals and glass are well tolerated, and if not causing any symptoms or signs, may be left in situ.

All organic foreign bodies should be removed as they may later cause complications. Wooden foreign bodies are particularly liable to fragment, both on impalement and withdrawal, which makes their removal a particular challenge. They are soft, and may harbour soil-borne bacteria increasing the risk of infection even if a small fragment is left inside the wound. Those that penetrate the orbit must be removed completely in a controlled manner with meticulous haemostasis. Their vigorous removal may further damage the globe and cause loss of the taponade effect stressing the need for good access for haemostasis. In our case, history of the patient did not reveal presence of any foreign body. Radiographic findings were also inconclusive because of moderate density of wooden piece. The ophthalmic symptoms were due to the organic nature of the wood which caused intense inflammatory reaction and the tissue tension.

Conclusion

Any penetrating injury to the orbit should be evaluated for intraorbital foreign bodies. Clinical suspicion, accurate history, imaging are essential aids in diagnosing intraorbital foreign bodies. Further the skill and experience of the surgeon influences the prognosis and reduces the iatrogenic complications.