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Case Report

Corpus alienum in maxillofacial region: A wooden foreign body masquerading as infection

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Abstract

Penetrating foreign bodies in the maxillofacial region are uncommon and often overlooked due to their varied presentation and limitations in clinical accessibility. Foreign materials such as wood, metal, plastic, or glass may remain inert for years; however, when irritation occurs, they can trigger significant inflammatory responses requiring prompt diagnosis and management. This report describes a 32-year-old male who presented with pain, swelling, trismus, and purulent discharge over the right frontozygomatic region one week after a road traffic accident. Initial radiography failed to detect the foreign body, but ultrasonography revealed a hypoechoic mass consistent with an embedded wooden fragment. Surgical exploration through the existing laceration enabled successful retrieval of multiple wooden pieces. The infected wound was managed with thorough debridement using hydrogen peroxide, saline, and super-oxidized solution, followed by a course of oral antibiotics, resulting in uneventful healing. This case highlights the importance of detailed history, appropriate imaging selection, and timely intervention for effective foreign body management in maxillofacial trauma.

Keywords: Corpus Alienum, Foreign body, Hydrogen peroxide, Superoxide.

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1. Introduction

Penetrating foreign bodies in the maxillofacial region are relatively uncommon and usually missed in diagnosis.[1] A foreign body (*corpus alienum*) is defined as any microscopic or macroscopic external object introduced into the human body, either through accidental injury or iatrogenic procedures.[2,3] These objects—commonly metal, wood, plastic, or glass—may be inert or irritating.[4] Foreign bodies often remain inert for years without causing harm, but if irritation occurs, they may trigger inflammatory reactions and damage surrounding tissues.[5]

Impaction of foreign bodies in the Oral and Maxillofacial region is uncommon[1] and may present diagnostic challenges due to factors such as object size, type, limited access, and proximity to vital structures[2,3]. Reported cases include traumatic impaction of toothbrushes,[4] vegetative materials,[5] and metallic objects[6] in both children and adults. While some foreign bodies may remain dormant for years without damaging adjacent structures,[7] others may produce chronic inflammatory reactions and lead to infection[8]. Therefore, accurate identification, localization, and timely removal are essential.

2. Case Report

A male patient aged 32yr reported to emergency department with complaints of pain, swelling on right frontozygomatic region and pus discharge from the laceration present of the same region for 4 days accompanied with reduced mouth opening. Patient gave history of trauma due to road traffic accident 1 week ago, which wasn't addressed according to its severity, though patient got regular dressing done, the pain and pus discharge continued and increased eventually. Hence patient was referred to our tertiary hospital for further management.

Palpation revealed a tender swelling over right zygomatic arch , accompanied by pus discharge from existing laceration, trismus and interincisal opening of 25mm. CT was done to rule out fracture of maxillofacial skeleton, a USG

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(**Figure 1**) then revealed heterogeneously hypoechoic area of size 1.4x0.5x1.3cm in right frontozygomatic region, respective region was explored under local anaesthesia through the existing laceration (**Figure 3**), debridement was done and multiple dark wooden stick measuring 1.4x0.5x1.3 cm was retrieved (**Figure 2**). Since there was active infection noticed on site, the wound was thoroughly debrided with hydrogen peroxide followed by saline followed by application of super oxidized solution for 5-6 consecutive days. Patient was given oral antibiotics for 7 days. Pt was kept on regular follow-up and wound was to be closed secondarily.

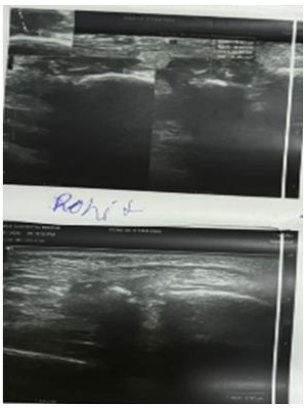

Figure 1: USG revealing heterogeneously hypoechoic areas size 1.4×1.3cm

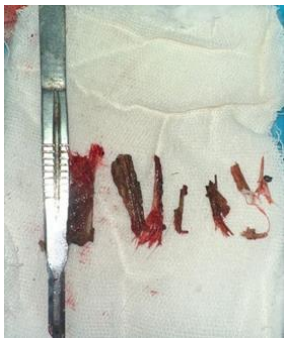

Figure 2: Shows multiple wooden sticks retrieved from right frontozygomatic area

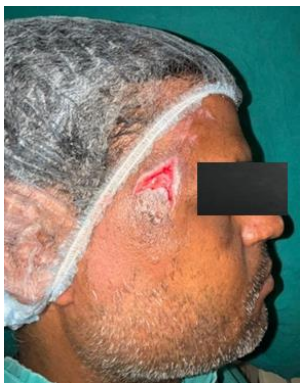

Figure 3: Post-op day 6 shows healthy margin of tissue

3. Discussion

Foreign bodies may be ingested, inserted into a body cavity, especially by children or impacted into the body tissue following a traumatic or iatrogenic injury. The diagnosis and early detection of foreign bodies are usually based on the patient's history, clinical examination and the various radiological imaging methods such as ultrasound, plain radiographs, Computed Tomography, Magnetic Resonance Imaging.[9] The effect of foreign body may differ as per its content and age[1] some can produce chronic inflammatory reaction and need to be removed. Patient presented to us after seeking primary treatment which did not give symptomatic relief, the active infection, tenderness over right frontozygomatic region associated with trismus helped narrow down to infection due to foreign body.

The mode of injury precedes the diagnostic aid. The visibility of materials on plain radiograph depends upon their ability to absorb x-rays.[9] Most foreign bodies are detectable by plain radiographs therefore it is the first diagnostic tool ordered to rule out associated fractures as well as entrapment. In our case, wood being an organic material with low density and not associated with radio-opaque substance, was not visible on plain x-ray therefore USG was done and it revealed the location and size of the foreign body.[9]

Through the existing laceration, accessibility was made and surgical exploration was done under local anaesthesia and pieces of wood were retrieved from right frontozygomatic region as shown in **Figure 2** and none of the important anatomical structures were injured following which thorough debridement was done with 3% hydrogen peroxide and saline consecutively and continued with superoxide. 3% hydrogen peroxide acts as an oxidizing antiseptic, releasing reactive oxygen species that disrupt microbial cell walls and proteins.[11] The effervescence helps mechanically debride contaminated wounds, aiding initial wound cleansing. It provides mild hemostasis in minor bleeding but may delay healing if used repeatedly due to cytotoxicity. After using hydrogen peroxide, saline is applied to flush out residual H_2O_2, stopping further oxidative damage to healthy tissue. It also removes foam and debris, restoring a gentle, physiologic environment. This helps prevent cytotoxicity and supports proper wound healing.[10]

Super oxidized spray releases reactive oxygen species that injures microbial membranes, proteins, and DNA, providing broad-spectrum antimicrobial activity. Its non-cytotoxic, pH-balanced formulation allows safe, repeated use without harming viable tissue. By reducing inflammation and bioburden, it supports granulation and epithelialization which can be remarkably seen in (**Figure 3**), making it effective for ongoing wound irrigation and infection control.[11] With oral antibiotics and regular debridement and no sign of pus, wound healed and was closed primarily.

4. Conclusion

The take home message here is, a detailed case history, the mode of injury lays the path for selection of diagnostic tool aiding retrieval of foreign body without further complications. Presentation time primary or secondary helps decide the line of treatment; secondary presentation often associated with active infection requires thorough debridement and regular follow-up unlike primary which can be accessed and closure can be done with sutures. The diagnostic tool used for localizing foreign body depends upon the nature of foreign body which circles back to the location and mode of injury. Therefore, a full circle of case history, diagnostic tool and surgical skills aids in uncomplicated recovery.

5. Source of Funding

None.

6. Conflict of Interest

None.

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