

# Unusual Foreign Body in the Mastoid

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**Abstract-** We report a case of a girl who was assaulted by her brother with a large stainless steel spoon which was found penetrating the mastoid cortex. There were no signs of intracranial bleeding. CT brain revealed the metallic part of the spoon piecing the mastoid cortex and compressing the sigmoid sinus. Under general anaesthesia spoon was removed in the operation theatre. Post operatively recovery was uneventful.

**Index Terms-** Foreign body, Sigmoid sinus, Mastoid cortex, Facial nerve, CT brain.

## I. INTRODUCTION

Penetrating wounds of the head and neck are rare and potentially life-threatening injuries. The severity and extent of such injuries depend on the weapon used and the anatomic site involved. The risk of vascular, neurological, eye, and ear injuries is particularly high. The management of such patients receives

considerable attention, as it can be seen from the reports published so far. We describe the management and recovery of the patient with an injury to the mastoid region by a big spoon. The treatment of the wound required multidisciplinary approach.

## II. CASE REPORT

A 17year old female, came with alleged history of assault by her brother using a big stainless steel spoon. She came to the casualty with the spoon penetrating the left mastoid region. She presented with pain and minimal bleeding at the site of injury. The patient was conscious and well oriented.

No h/o ear bleeding and nasal bleeding.

No h/o seizures

No h/o giddiness, hard of hearing.

She attempted to remove the spoon by herself but did not succeed.



**Figure 1:** showing metallic part of spoon piercing the mastoid cortex.

The Glasgow coma scale was 15. On clinical examination the foreign body was seen penetrating the left mastoid region. The length of the object seen outside was 14cm. CT brain was taken which revealed the metallic part of spoon piercing the mastoid cortex. Otorhinolaryngological examination revealed

bilateral external auditory canal was normal, tympanic membrane intact with hearing within normal limits clinically.

Facial nerve clinically intact bilaterally.

Mild tenderness over the mastoid was present.

Physical and neurological examination was normal.



**Figure 2: CT brain showing metallic part of the spoon piercing the mastoid cortex.**

The patient was taken up as emergency in operation theatre. Under general anaesthesia, post auricular incision was made and subcutaneous tissue elevated. Mastoid cortex identified after elevating the periosteum. Foreign body was seen firmly penetrated and fixed to the mastoid cortex. Drilling was started around the foreign body and was found penetrating the sinus plate compressing the sigmoid sinus. After complete drilling over the mastoid and the foreign body, it was removed in toto. Gel foam and surgical placed. Haemostasis secured and wound closed in layers. Post-operative recovery was uneventful. Facial nerve was intact post operatively. The length penetrating inside was 1.75cm and penetrated part was found to be blunt. CT brain taken post operatively showed subcutaneous air pockets with fracture of mastoid part of the left temporal bone. Audiometry done showed hearing within normal limits.

### III. DISCUSSION

The interest in reporting the case was the style of trauma and part of the spoon which was penetrating the mastoid cortex was blunt. The force was so tremendous to pierce the mastoid cortex and compressing the sigmoid sinus. The foreign body which was radio opaque was easily visible in CT brain. Craniofacial stab injuries are termed as Jael's syndrome. It is defined as deliberately inflicted penetrating injuries of the maxillofacial region. Stab wounds to the mastoid region are an unusual variant<sup>1</sup>. Reviewing various literatures, a similar case of blunt injury of the mastoid region without any other associated vascular or endocranial injuries had been reported.

GURTU et al<sup>2</sup> (1997) reported a case of unusual foreign body piercing mastoid process (metallic end of refill of dot pen). The pointed end of the refill pierced through and through the pinna and entered in to the mastoid process. An incision around 3mm was made around the point of entry of foreign body. Burr was used to drill the bone around the foreign body and the same was removed. Col Lt H Vijayanand<sup>3</sup> reported a case of foreign body mastoid with discharging post aural sinus. Cortical mastoidectomy was done and foreign body was removed in toto. Post operatively the patient developed clinical features of sigmoid sinus thrombosis. High dose antibiotics was given and was treated conservatively. The patient had an uneventful recovery.

Hadeishi H et al<sup>4</sup> (1955) reported a study (mastoid canal and migrated bone wax) in which they have concluded that intrasurgical application of a large quantity of bone wax to control venous bleeding from the mastoid emissary veins carries a risk of migration of bone wax in to sigmoid sinus. Cholesterol granuloma coincidence with a large and high jugular bulb has been reported by Kasemsuwan<sup>5</sup> (1993).

The vital anatomical relations of the mastoid air cells are middle fossa meninges superiorly, labyrinth medially, facial nerve anteriorly and sigmoid sinus posteriorly. Possible complications include meningitis, sigmoid sinus thrombosis, mastoiditis, facial nerve palsy and labyrinthitis. However due to immediate intervention and postoperative care our patient had no complications.

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