

## LONG STANDING IMPACTED WOODEN FRAGMENT: A DIAGNOSTIC DILEMMA

\*<sup>1</sup>Dr. Mayank Kumar, <sup>2</sup>Dr. Jitendra Singh Shekhawat and <sup>3</sup>Dr. Virendradeo sinha,

<sup>1</sup>Resident, Neurosurgery Department, S.M.S Medical College, Jaipur.

<sup>2</sup>Associate Professor, S.M.S Medical College, S.M.S Medical College, Jaipur.

<sup>3</sup>Senior Professor and Hod Neurosurgery Department, Medical College, Jaipur.

\*Corresponding Author: Dr. Mayank Kumar

Resident, Neurosurgery Department, S.M.S Medical College, Jaipur.

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### INTRODUCTION

Superficial wounds are common and complications arising from retained foreign bodies are a potential source of substantial morbidity and consequently medical litigation.<sup>[4]</sup> Retained foreign bodies in penetrating brain injury can lead to brain abscess formation with associated seizures and neurological disability.<sup>[4]</sup>

The most commonly encountered types of penetrating head injuries are industrial accidents, suicidal attempts and assault.<sup>[6]</sup>

Radiolucent foreign body are often missed on X-ray and CT Scan. The imaging appearance of wooden foreign bodies (radiolucent) is variable. Wood appear like air bubble on CT scan, so wooden foreign body can be missed. MRI and USG is more sensitive and specific for detecting radiolucent foreign body. Craniocerebral injury due to foreign body is not uncommon but foreign body, impacted for 28 years, is not found in available search of literature. Here we present an unusual case of impacted wood- fragment in a child who presented 28 years later  
Keywords- Wooden foreign body, Complications of impacted foreign body.

### CASE- HISTORY

35 years male patient having alleged history of trivial fall while playing, 28 years back, presented with chief complaints of painless localized swelling of approximately 3×3 cm<sup>2</sup> on left forehead since fall and seizure episodes with headache 2 years.

Previously (after fall) the patient was taken to nearby practitioner where he was given pain-killers, after which the symptoms improved. Non contrast CT- Head was done which failed to show any abnormality.

There is history of drop attacks during seizure episodes with loss of consciousness for 1-2 minutes since 2 years. Seizures were with frequency of 2-3 every month. Patient started taking antiepileptic after which seizure episodes settled. There was dull, parietal, mild to moderate headache since 2 years which used to get relieved on taking pain killers.

On neurological examination, patient was conscious and oriented without any neurological deficit. On local examination, mild localised tenderness on the swelling was present.

After the patient presented in our OPD, CT head with lung window settings and MRI- brain was done. Non-contrast CT head (figure-1a) showed small air bubble in subcutaneous tissue. It was in lung window settings that the wooden piece was visible (figure-1b). MR revealed the wooden splinters as signal void structures on T1W, T2W and proton density weighted images in left frontal subcutaneous region. Surrounding inflammatory reaction give it a target ring like appearance on axial film. (figure-1c).

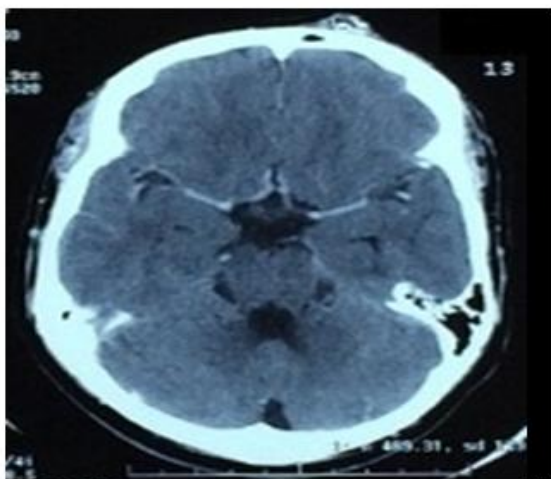


Figure 1a- Contrast enhanced computed tomography (CT) head axial cuts showing small air bubble like lesion in left frontal subcutaneous region

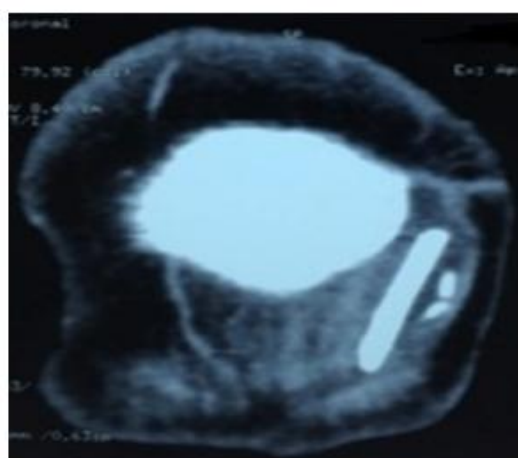


Figure 1b-Axial cuts in lung window settings, showing linear hyperdense foreign body in left frontal region

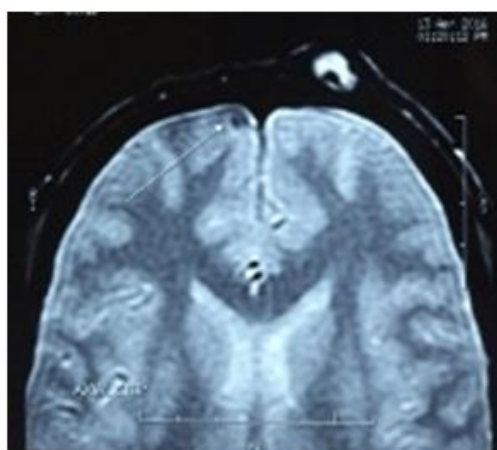


Figure 1c-T1-weighted MRI brain showing target-like lesion in left frontal subcutaneous region. Small hypodense mass also seen in right frontal lobe (marked by arrow)

Small hypodense lesion was also found in right frontal region, which may be inflammatory granuloma. There was no calcification or perilesional edema around the swelling.

#### Management

Patient was operated under general anaesthesia with left frontotemporal curvilinear incision. Per-operatively, a wooden piece of about 2 cm long was removed which

was underneath galea- aponeurotica of left scalp- flap (figure 2a) Thin pus collection was present around it. Indentation was also present on frontal bone but there was no intracranial extension.(figure 2b)



Figure 2a-swelling in left forehead present since 28 years



Figure 2b- Intraoperative picture showing foreign body with depression in frontal bone with surrounding granulation tissue

## DISCUSSION

Impacted foreign body may Pose a risk of infection both immediate and delayed (brain abscess). It can also lead to Wound dehiscence, Foreign body granuloma, vascular injury and neurological deficit. Delayed presentation of brain abscess has been reported in cases of penetrating brain injury with radiolucent materials.<sup>[1]</sup>

Wooden foreign bodies are not detectable by standard roentgenography. Takasaki *et al.* have reported a case of chronic retention of multiple wooden toothpicks in an adult prisoner. Intranasal wooden foreign body may be missed on CT in the acute stage because of apparent air attenuation of the foreign body and lack of contrast with the surrounding intranasal air.<sup>[5]</sup> They concluded that CT may not adequately distinguish wood from surrounding soft tissues and recommended magnetic resonance imaging for detection of intranasal wooden foreign bodies. Ultrasonography has also been suggested as one means by which retained radiolucent foreign bodies may

be accurately and effectively detected following surgical exploration and extraction.<sup>[2,3]</sup>

Ho *et al.* have noted that a WW of 1000 HU and WL of -500 HU (lung window) is optimal for the detection of wooden foreign bodies on CT. Similarly in our case wooden foreign body was not detected by non - contrast CT head and it was latter detected by CT head in lung window setting and by MRI brain.

In this case, no initial suspicion of foreign body was made and the scalp injury was thought to represent a simple injury. Seizure episodes may be due to granulomatous lesion in the frontal region.

## CONCLUSION

This was a missed event; to avoid it in the future, this case highlights the importance of constant vigilance for retained foreign bodies. It serves as a reminder to perform the appropriate radiographic investigation of

simple lacerations prior to closure when the potential presence of foreign body exists.

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