

# Suicidal rare craniocerebral injury and its complications

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## ABSTRACT

The authors here describe a rare cranio-cerebral injury, which occurred due to a self-inflicted suicidal attempt by the patient, who hammered an 8 cm long nail into his skull. This patient was a known case of schizophrenia. The nail entered in the region of the left parafalx area and reached almost up to the base of skull of the patient. This nail was removed by a mid-line craniotomy. Approximately six months later, the patient presented with the symptoms of raised intra cranial pressure and right hemi paresis. Repeat computed tomography scan showed a large brain abscess at the site of the previous surgery and the patient was re-explored through the previous incision; the abscess was drained and the wall was excised. The patient then made a good recovery.

**Key words:** Brain abscess, complications of head injury, psychiatric illness

## INTRODUCTION

Penetrating injuries in the head, in civilian practice, are rare. However, a few cases of suicidal or homicidal intent have been reported, by various authors, whereby psychiatric patients were inflicted injuries by means of nails or other objects to release the evil spirits residing in them! Sometimes the patient himself hammered a nail in, in an effort to end his life, as seen in the present case. This patient was suffering from schizophrenia. We are reporting this case due to its rarity in clinical practice.

## CLINICAL PRESENTATION

This 22-year-old, right - handed male, a known case of schizophrenia, was brought to this hospital as a case of alleged self-inflicted injury.

As told by his parents, this young man had inflicted an injury on himself, with a nail, which he had hammered inside his skull, with a wooden plank. He had attempted suicide multiple times earlier as well. He was a known case of schizophrenia and his symptoms had aggravated after he had witnessed an episode of massive fire outbreak in

a park, where about 100 persons had died due to burns. He was on irregular psychiatric treatment.

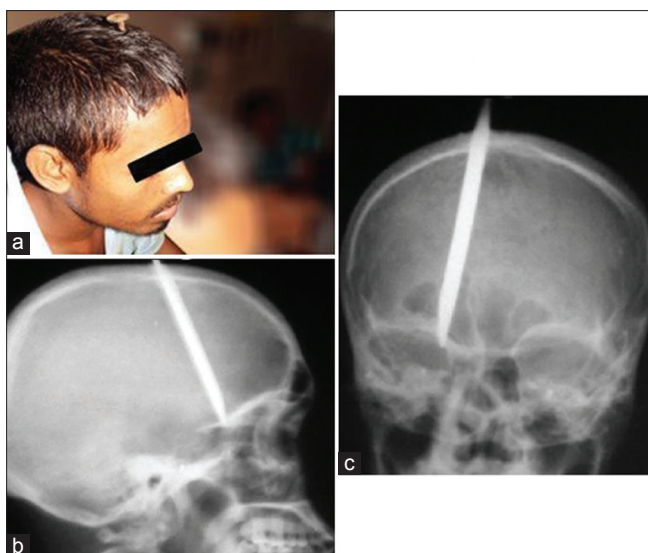
At the time of admission, the patient was fully conscious, with no focal signs of any neurological involvement. A nail was seen, protruding nearly 2 cm out of his skull, almost in the midline, near coronal suture [Figure 1a]. Patient was put on antibiotics and anti-epileptics drugs. An urgent plain X-ray [Figure 1b and c] and computer tomography (CT) scan was carried out. CT scan showed that a nail was present right up to roof of the orbit in the left parafalx area and there was no intracranial hematoma.

Patient was prepared for an operation and a paramedian left fronto - parietal craniotomy as close as possible to the nail was performed. After that, the dura was opened as close to sinus as possible. Nail was visualized entering in the brain. The nail was then firmly fixed and the bone around the nail was gently nibbled, taking care that nail did not move and cause any further injury to the brain. Once the nail was free from bone, the previous dural opening was extended to the nail entry site. The nail was then gently removed. There was bleeding from the site of nail's entry into the duramater as the superior sagittal sinus was partly injured. Superior sagittal sinus was repaired by small fascia patch. Hemostasis was achieved and wound was closed in layers. Broad spectrum antibiotics in form of intravenous ceftriaxone, amikacin, meteronidazole, and chloramphenicol were given along with antiepileptic drugs.

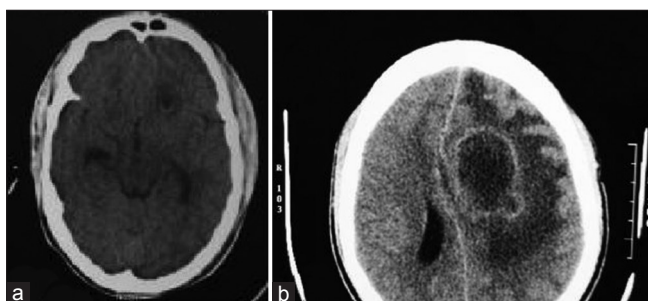
In the post-operative period, CT scan showed cerebral edema [Figure 2a ]. Otherwise the post-operative-phase

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**Figure 1:** (a) patient with nail *in situ*, (b) plain X-ray AP view, (c) plain X-ray lateral view



**Figure 2:** (a) Immediate post operative CT scan, (b) abscess at site of surgery (6 months later)

was uneventful and patient remained afebrile. The patient was also given psychiatric treatment and psychological counseling and he was discharged after eight days of surgery.

Approximately 6 months later, the patient again came back with complaints of headache vomiting. On examination, patient had Glasgow Coma Scale of 15/15 with the right sided weakness (power grade III). A repeat CT scan was carried out, and it showed a large brain abscess in the area of track where foreign body was located earlier [Figure 2b]. The patient was re-explored along the previous track of entry of the nail and a large brain abscess was removed from the site. In the post-operative phase, the patient made a speedy recovery and gained Grade IV power in the right side of his body. Following discharge, patient was lost to follow-up.

## DISCUSSION

Cases of a nail being driven inside the brain of the patient has rarely been reported in literature. These nails

are either driven into the skull by the patient himself who may be having suicidal tendency due to suffering from schizophrenia or from severe depression. In other situations, they may be driven into a person's skull, in the wake of superstitions, by the so called purifiers who aim to cure the person by letting the evil spirit go out of the brain.<sup>[1-4]</sup> Rare cases of a knife been forced into skull have been reported as an homicidal attempt.<sup>[5]</sup> A rarer case has been reported when a blacksmith suddenly became unconscious while working and was thought to be a case of spontaneous hemorrhage. However, on investigations, it was found that a metallic foreign body splinter had entered his nostril and had entered the anterior cranial fossa, causing a hematoma and edema.<sup>[6]</sup> Such self-inflicted or homicidal wounds who survive the trauma have rarely been reported in literature.<sup>[3,4,6,7]</sup> The possible reason that these patients survive maybe because hammering a nail or any other object into skull is a slow process and does not transmit much mechanical energy to the brain to cause extensive damage. Whatever damage does occur is due to the injury at the time of impact of entry or due to the seizure which may ensue subsequently or due to the infection in the post-operative phase. The risk of infection, in post-operative phase, is the highest, in these cases as these foreign objects are infected unlike the high speed missiles, which are sterile. The risk of infection, in such cases, persists for a long time, which is seen in the present case, when patient had a post-traumatic abscess 6 months after the initial trauma.

## CONCLUSION

A suicidal injury with nail in the brain is rare in neurosurgical literature. Proper planning and post-operative care can be life-saving. It is important to have a regular follow-up of such cases, to evaluate for any infection. Psychiatric care along with psychological counseling of the patient and their relatives is mandatory, to prevent the recurrence of such incidence in future.

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