

## Treatment of intracranial foreign body

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### Abstract

Craniospinal penetrating foreign body (FB) injuries are interesting, but rarely observed, cases. They are important in terms of the complications that they may cause. The etiologies of craniospinal penetrating injuries and intracranial FB are also different. Though a sewing needle is more rarely seen in an intracranial FB, it may occur as attempted infanticide or as a result of an accident especially in early childhood before the closure of fontanels. We detected an intracranial sewing needle in the head radiograph of a case admitted to the emergency department for another reason. We present this case since this is a rare injury and the etiologies of craniospinal penetrating foreign body have different characteristics.

**Keywords:** Craniospinal penetrating FB, intracranial FB, Etiologies.

### Introduction

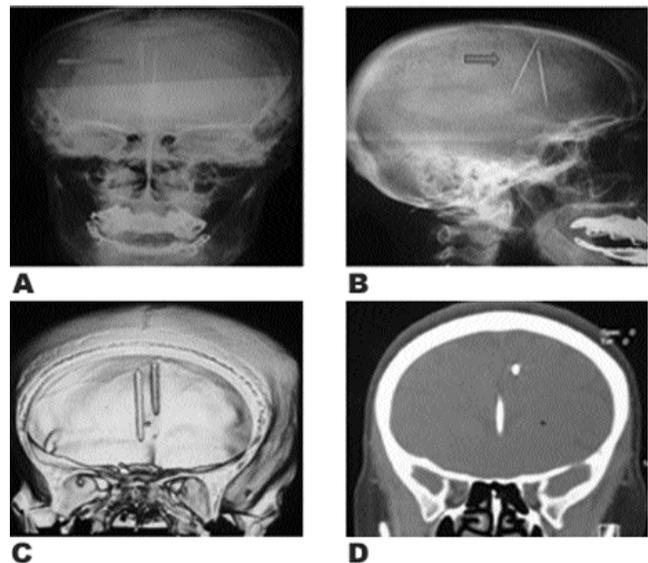
Although they are rarely observed, craniospinal penetrating foreign body injuries are interesting. This type of injury except those caused by firearms tend to be considered as industrial accidents, suicide attempts or criminal acts.<sup>1,2</sup> The penetration of foreign body into the cranium can sometimes be the result of attempted infanticide. Such cases may be determined accidentally and the cause of a brain abscess after the age of 6.<sup>3</sup> This paper reports on the case of a woman who was discovered after computed brain tomography (CBT) to have an intracranial foreign body in her brain. The woman was brought to the emergency unit after being beaten by her husband.

### Case Report

A 41-year-old woman patient who was a housewife was brought to the emergency unit of the Yuzuncu Yil University Hospital, Van Turkey, with the complaint of having been beaten by her husband in January 2012. She lived in Van and she was the eighth of 10 children. On admission, her general physical status was normal. There

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**Figure:** (A-B) Head X-ray images: Two number of metallic foreign body in the intracranial. (C-D) 3D CT reconstruction and coronal reformate images: Two number of metallic foreign body in the intracranial.

was no significant past history and the patient had no evidence of intellectual problems, or delayed growth. She was conscious, alert, oriented and cooperative. The results of the physical examination showed that the patient's arterial tension (TA) was 130/70 mm Hg, pulse was 78/min, temperature was 36.2°C, her Glasgow Coma Score (GCS) was (E4M6V5) 15, pupils were isochoric. Neurological examination did not demonstrate any abnormalities. She did not have any physical signs of injury. In other words, there was no haematoma, or ecchymosis on her head and all the systemic examinations were normal. On arrival the patient complained of headache. Since she had head trauma a head graphy was performed which showed 2 foreign bodies (Figure-1A-1B). There was no information on the penetration of a cranial foreign body in the history given by the patient. In CBT sections taken to ascertain the localization and degree of penetration of the foreign bodies; two metallic foreign bodies similar to sewing needles were observed (Figure-1C-1D).

### Discussion

Although the intracranial FB's are rarely seen, they are

usually observed after head trauma or brain surgery. The occurrence of an intracranial needle is an unusual state that usually occurs in early childhood as a result of an injection stub in the fontanelle with the intent of infanticide.<sup>4</sup> Furthermore, in the case of possible infanticide, in addition to entry point being the fontanelle are the sutures. There are also cases in which the vertex, nostrils and the orbit were used.<sup>2,3,12</sup> In older children and adults, intracranial FB's usually occur as a result of penetration by pieces of shrapnel and wood or bone fragments entering the cranial cavity through the ear or orbit.<sup>5</sup> The clips during surgery and parts of medical sponges left in the intracranial space may lead to the intracranial granulomas.<sup>6</sup> These granulomas may be indistinguishable from the recurrent tumours even in an MRI.<sup>7</sup> Together with all of these, determining the sewing needle as an intracranial FB is a rare condition.<sup>8</sup> In a series of 13 cases done in the year of 1979 and identified the intracranial sewing needle, infanticide interference and being accidental have been strongly emphasized in the etiology of the cases.<sup>9</sup> In our case, there was no history of cranial surgery or of an accident resulting in brain trauma. Since the foreign body was located close to the vertex we are of the opinion that the object entered the cranial cavity in early childhood after an accident or attempted infanticide. CBT is the most valuable method to determine the shape and location of bones and foreign metallic bodies. It gives information about complications such as parenchymal damages and bleeding. Due to the intracranial FB's in early period, intracerebral haemorrhage, major vascular injury and death may occur as a result of meningitis. Early surgical intervention is important to decrease the rate of mortality and complications.<sup>10</sup> In our case, the image of two needles extending from the vertex localization to the cranial was seen in cranial CBT taken at the hospital. However, there were no findings related to the complications such as bleeding and abscess. In terms of the need for surgical treatment in the literature, incidence of epilepsy, documented with the Electroencephalogram (EEG) must be had. Although invasive treatment may be necessary,

but surgical intervention itself may cause epileptic attacks.<sup>11</sup> If the FB is deep-seated, follow-up is recommended and the object is left in the place.<sup>12</sup> Surgical treatment was not planned in our case since the foreign body was not deep-seated and there was no history of epilepsy, thrombosis, granulomatous disease and there were no complications. Follow-up was recommended.

In the rare observation of intracranial foreign bodies the case can be followed up without performing surgical intervention in cases with no complications and where the foreign body is deep-seated and difficult to remove with surgery.

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