

An Intracranial Foreign Body That Encountered Incidentally After Years

Yıllar Sonra Tesadüfen Karşılaşılan İntrakraniyal Bir Yabancı Cisim

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Abstract

Intracranial penetrating foreign bodies are one of the most rarely encountered situations in neurosurgery practice. Although they are uncommon, intracranial foreign bodies are potentially fatal entities. Sewing needles in the brain are among the more unusual foreign bodies. In this article, we presented a case with a sewing needle in the cranium that was detected incidentally. There were no clinical symptoms or inflammatory findings in the insertion area and no external sign of the puncture. We document this patient to highlight the management of such cases with the goal to improve outcome and minimize short and long term complications.

Key Words: Penetrating Head Injuries, Sewing Needle, Intracranial Foreign Bodies

Öz

Kafa içi penetran yabancı cisimler, nöroşirürji pratiğinde en nadir karşılaşılan durumlardan biridir. Nadir olmalarına rağmen, kafa içi yabancı cisimler potansiyel olarak ölümcül antitelere sahiptir. Beyindeki dikiş iğneleri daha sıra dışı yabancı cisimler arasındadır. Bu yazıda kafatasında tesadüfen dikiş iğnesi saptanan bir olguyu sunuyoruz. Hiçbir klinik semptom veya giriş alanında enflamatuvar bulgu yoktu ve giriş deliğine ait bir belirti yoktu. Bu hastayı bu tür olguların yönetimini vurgulamak, daha iyi sonuçlar elde etmek ve kısa veya uzun vadeli komplikasyonları en aza indirmek amacıyla doküman ediyoruz.

Anahtar Kelimeler: Penetran Kafa Yaralanmaları, Dikiş İğnesi, İntrakraniyal Yabancı Cisimler

Introduction

Penetrating head injuries are commonly associated with a poor neurological prognosis and have a high risk of mortality, accounting for only 0.4% of all head injuries (1). They are rarely encountered in neurosurgery. Most of them result from work-related accidents, motor vehicle accidents, falls, criminal assaults or suicide. Foreign bodies mostly penetrate the cranium through the orbita, frontal sinus, ear and nasal regions. Although they are less common than closed head traumas, massive penetrating head injuries are major causes of death and severe disability as a result of intracerebral hematoma, cerebral contusion, intraventricular hemorrhage, pneumocephalus, caroticocavernous sinus fistula, vascular disruption or meningitis. The rate of vascular complications due

to penetrating cerebral injuries ranges from 5% to 40% in the literature (2). Early recognition of these injuries is important to achieve the best possible outcome. Generally based on the impact velocity they can be grouped into two categories: high and low velocity penetrations.

Intracranial needles were first documented by Meixner (3) in 1914, in two children. In infancy, needles in cranium are usually inserted through fontanelles or cranial sutures and more rarely orbita, ears or nose for the purpose of infanticide (4). Insertion of needles through the fontanel is mostly seen as an attempt for child abuse. Although most of the cases reported in the related literature were diagnosed incidentally, patients may present late in life with epilepsy or headache. Very few symptomatic patients are encountered in articles previously published. The most common symptoms are headache and epilepsy (5). Delayed

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complications can also be seen such as pseudoaneurysms, arteriovenous fistulas, vasospasm, cerebrospinal fluid leak, infection and epilepsy. Most of the cases reported as an incidental finding in asymptomatic adults.

Case Report

A 78-year-old female with normal physical and mental development consulted our department after presenting with abdominal pain to the gastroenterology clinic. She expressed that there is a needle in her head when a magnetic resonance cholangiopancreatography (MRCP) exam is planned. The needle was encountered by a clinician in a head X-ray after a minor head trauma and aware about this situation before. For this statement of the patient cranial computed tomography (CT) scan performed. CT demonstrated a 40 mm linear, hyperdense foreign object, judged to be a sewing needle extending through superior sagittal sinus adjacent to the falx to the lower margin of corpus callosum (Figure 1). She has no head surgery or trauma in her previous history. Her neurological condition and examination was intact. She has no external finding in the scalp about the entry point or puncture of the needle. There was no an epileptic or syncope attack. No evidence of motor and mental retardation was observed.

Discussion

Penetrating cranial injuries can be classified as missile and non-missile injuries. There are specific weak areas such as the orbit, skull base foramina, anterior fossa floor and temporal squama where the foreign bodies can penetrate more easily. The needles are discovered incidentally as in our patient. Whether the needles in cranium in asymptomatic patients should be removed surgically or not, is mostly controversial (6). Tuncer et al. (7) suggests that surgical removal is not indicated when no clinical signs or symptoms are present. The most common symptoms are intractable headache and epilepsy and approximately one third of patients with intracranial needles remain asymptomatic (8). Ilbay et al. (4) recommends the conservative treatment if the patient is asymptomatic and diagnosis is incidental and there is no risk of infection. Amirjamshidi et al. (5) reported that there is no absolute surgical removal indication for intracranial sewing needles detected in the later decades of life. Patients with intracranial foreign bodies may present late in life with epilepsy. A view on the pathogenesis of epilepsy suggests that the sewing needle causes ion circulation which triggers the seizures (9). There are patients in the literature that reported underwent surgical removal of intracranial foreign body due to seizures whose attacks can't take under control despite oral antiepileptic

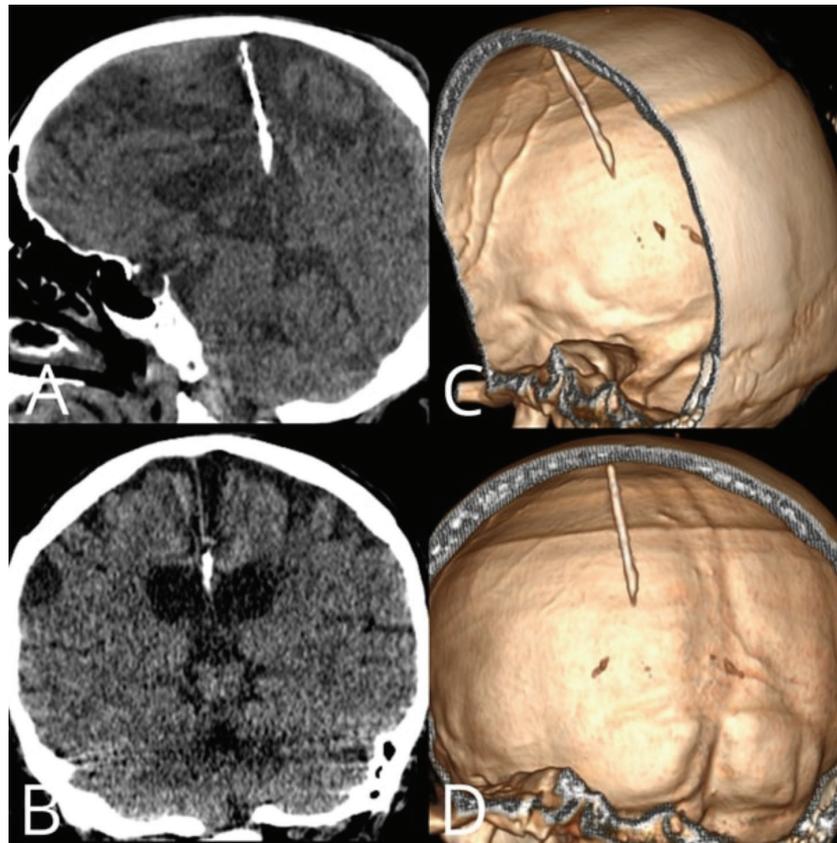


Figure 1: CT scan reveals intracranial foreign body through midline beside falx approximately 4 cm long with regular borders and sharp tip
CT: Computed tomography

medication (10,11). Mass effect due to reactional tissue possibly may also cause seizures (12). Yürekli et al. (13) suggest that surgical removal is unnecessary if seizures are under control with antiepileptic drug therapy. Abbassioun et al. (6) point out that metallic foreign bodies are much better tolerated in the cerebral tissue than bone fragments. Present case in this article has no history of seizure or no infection findings or symptoms. The needle was inserted with an infanticide attempt. She had no complaint due to the intracranial needle. In this article, we aimed to emphasize under which conditions the surgical procedure is not indicated in patients with intracranial penetrating foreign bodies and why we did not operate the patient.

Conclusion

Present case in this article is not symptomatic although it projects adjacent to the vital neurovascular structures. The life threatening criteria should be determined not only according to the location of the foreign body in the cranium but also according to the damage and symptoms it causes. When considering the surgical removal of a foreign body, the risk of complications and possible benefits should be also considered. In case of such injuries, foreign bodies adjacent to the major neurovascular structures should not be attempted to be taken out if there is no risk of infection and there is no intractable epilepsy.

Ethics

Informed Consent: Written informed consent was obtained.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Concept: K.E., A.E., İ.D., Design: K.E., A.E., İ.D., Data Collection or Processing: K.E., A.E., İ.D., Analysis or Interpretation: K.E., A.E., İ.D., Literature Search: K.E., A.E., İ.D., Writing: K.E., A.E., İ.D.

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