Intracranial Sewing Needle Associated With Epilepsy

Epilepsi ile Birlikte Olan Kafa İçi Dikiş İğnesi

MURAT KUTLAY, NUSRET DEMİRCAN, AHMET ÇOLAK

Gülhane Military Medical Academy Haydarpaşa Training Hospital Department of Neurosurgery, İstanbul, Turkey

Abstract: A case of unusual intracranial foreign body associated with epilepsy is presented. A young man had been admitted to our unit for investigation of epileptic attacks. On radiological examination, a sewing needle in the left posterior frontal region was detected. There was no specific focal epileptogenic activity in the electroencephalogram, and it was surgically removed. Two years after operation, the patient was free of epileptic attacks. Review of the literature revealed only two reports of 4 similar cases. In this report, delayed onset of neurological symptoms is emphasized, and removal of the retained intracranial foreign bodies in accessible areas by early surgical intervention is suggested.

Key Words: Intracranial foreign body, sewing needle

Özet: Epilepsi ile birlikte seyreden nadir rastlanılan bir kafa içi yabancı cisim olgusu sunulmuştur. Genç bir erkek hasta epileptik nöbetlerin araştırılması için kliniğimize yatırılmıştı. Radyolojik tetkiklerinde sol frontal bölge arka kısmında bir dikiş iğnesi saptandı. Elektroensefalogramda özel bir epileptojenik odak yoktu ve iğne cerrahi girişimle çıkarıldı. Ameliyattan iki yıl sonra hastanın epileptik nöbetleri kalmamıştı. Bu nadir olgu ile ilgili yayımların araştırılması, sadece 4 olgunun bildirildiği iki çalışmanın olduğunu ortaya çıkardı. Bu çalışmada, geç dönemde ortaya çıkan nörolojik bulgular vurgulanmıştır. Ek olarak, cerrahi girişime uygun alanlardaki kafa içi yabancı cisimlerin erken cerrahi girişimle çıkarılması önerilmiştir.

Anahtar Sözcükler: Dikiş iğnesi, kafa içi yabancı cisim

INTRODUCTION

Penetrating injuries of the skull may occur accidentally or intentionally (4,7,8,11). In the literature, unusual foreign bodies in the brain present a large spectrum ranging from nasogastric tube to wood (4,7,9-11,17). Occult perforating wounds with retained foreign bodies of the cranium is extremely rare. We report a new case involving the introduction of sewing needle into the brain with unknown pre-existing cranial trauma. Because of the rarity of our case, previously reported cases of penetrating injury to the brain due to sewing needle are reviewed.

CASE REPORT

A 20 year-old man was admitted on July 2, 1993 for investigation of epileptic attacks since three weeks. He was from a small village in eastern Turkey. He had had many seizures uncontrolled by the combination of the usual anti-convulsant drugs (Phenytoin sodium 3x100 mg/ day, sodium valproate, 3x 200 mg/ day, primidone 2x1 0.25 mg/ day).

On examination, no clinical signs or symptoms were noted. No specific focal epileptogenic activity was detected but there was non-specific slowing of

the background activity in the electroencephalogram (EEG). Plain skull radiographs showed a sewing needle in the midline position, in the posterior frontal region (Figure1). Interestingly, the patient was not aware of the presence of this needle. Computerized tomography (CT) demonstrated the needle lying in the left posterior frontal region at a distance less than 1 cm from the midline, just in front of the coronal suture. The needle was situated vertically between the ipsilateral lateral ventricle and surface of the brain (Figure 2). On angiography, we determined that the needle had nearly passed sagittal sinus.

Left-sided frontal craniotomy was performed. When we opened dura, we encountered the upper end of the needle. It was not loosely attached to the surrounding gliotic tissue. By gentle traction and dissection of the surrounding tissue, the needle was

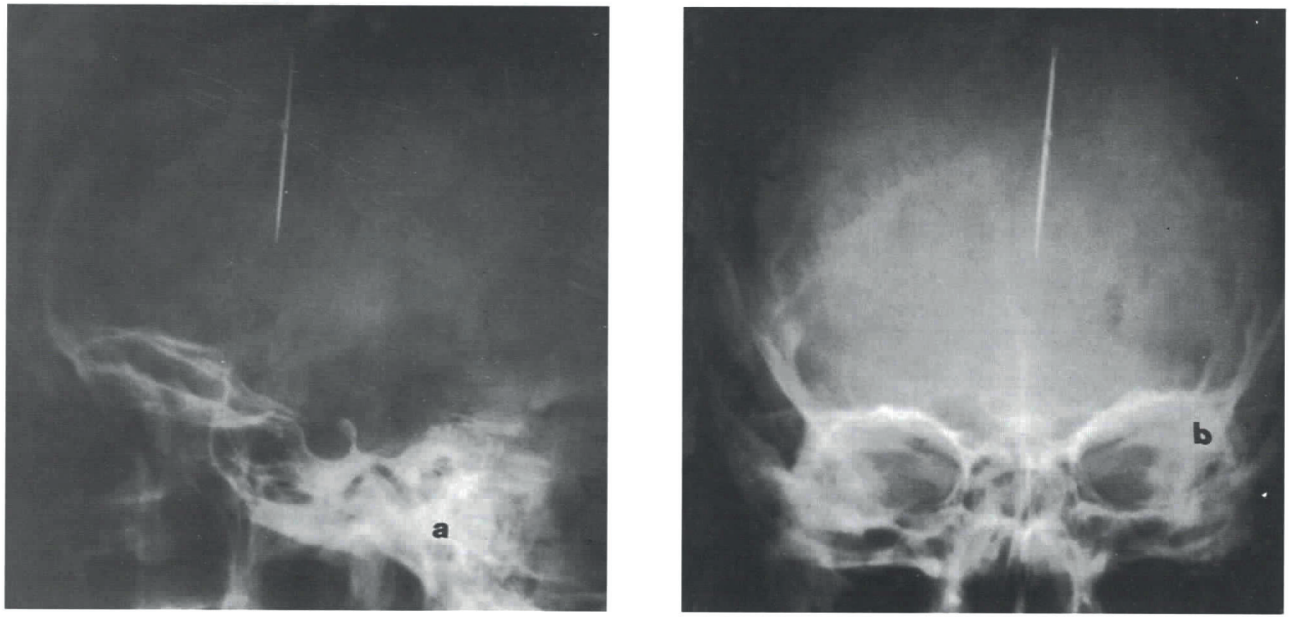

Figure 1: Plain skull radiographs showed a sewing needle in the posterior frontal region at the midline. Lateral (a), and anteroposterior (b)view of the cranium.

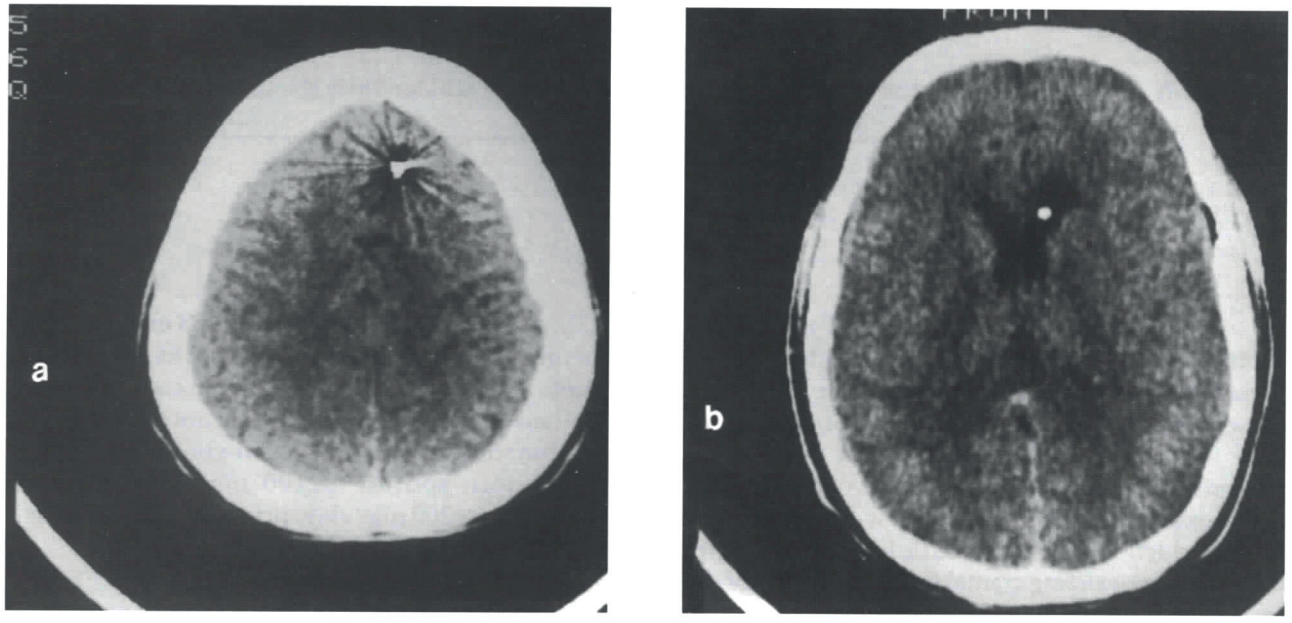

Figure 2: Preoperative CT scan showing the needle in the frontal region with the surrounding hypodense area. Upper end of the needle (a), and deeper portion of the needle (b).

removed easily without any neurological deficit (Figure 3). One year after the operation, his only medication was phenytoin sodium 100 mg/day. Two years after the operation, anticonvulsant medication was discontinued and the patient was free of epileptic attacks.

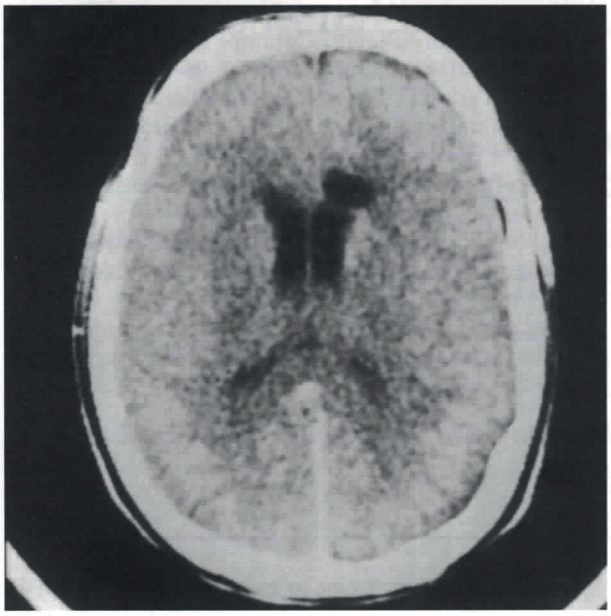

Figure 3: Postoperative CT scan.

DISCUSSION

Cranio-cerebral penetrating injuries caused by needle is extremely rare. Review of the literature revealed only two reports (4 cases), one published in 1961, and the other in 1970 (1,2). Since all of them failed to give a history of injury associated with a needle, all these cases are strange examples of occult perforating wounds with retained foreign bodies. Children are particularly prone to such occult trauma, as their skulls are thinner (9). Dujovny et al. (6) also reported that firm pointed objects may easily penetrate the skull and dura in children because of the thinness of the incompletely ossified skull. But Ameli et al. (1) suggested that the needles had been inserted intentionally before the closure of the anterior fontanel to kill the infant (unwanted baby). Since the needles had entered vertically, and were situated in the same region in all cases, we also believe that the needles could not have entered the skull accidentally. In addition, one of these cases reported previously had two needles which again support the idea of intentional insertion through the soft fontanel. Medicolegal problems are another aspect of interest. In our opinion, why and/or how this needle has entered the brain should not be explained to the patient. This may cause problems in relations between the patient and his/her family.

In the literature, it has been reported that the onset of infectious complications around a retained foreign body may be delayed (3,5,13). In addition, it was reported that metallic objects can migrate causing further brain injury, and can produce various reaction (12,14-16). Although, we did not determine the findings of infection, the needle was not firmly adherent to the surrounding soft tissues. Histological examinations both of the tissue attached the needle and surrounding soft tissues showed gliosis and cystic formations which occurred probably due to a reaction to the foreign body.

Minimally invasive methods for the removal of retained foreign body are desirable. An extensive preoperative evaluation of localization of the foreign body should be done to minimize morbidity. Accurate localization of foreign body in the brain can be obtained by CT. Ultrasonography may be helpful intraoperatively but we did not require it because of preoperative evaluation with CT.

In our case, and the other four cases reported previously, the long interval before the onset of neurological manifestations are important. In our opinion, foreign body in accessible areas should be removed by early surgical intervention. Even if there is no neurological finding, early removal of these objects will prevent further destruction in the brain. We consider early operation the best solution for the prevention of possible delayed complications.

Correspondence: Murat Kutlay
GATA Haydarpaşa Eğitim Hastanesi
Nöroşirürji Kliniği
Kadıköy İstanbul Turkey
Phone: (216) 345 0295 / ext. 2657
Fax: (216) 348 7880

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