

Case Report



Incidentally Detected Intracranial Sewing Needle in an Adult: Case Report

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Conflict of Interest

The author has no financial conflicts of interest.

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ABSTRACT

The author presents a 48-year-old man who showed an intracranial sewing needle incidentally detected on a skull radiograph. He had no history of cranial surgery or a penetrating head injury. On radiography, the sewing needle was found to be located close to the frontal bone in the midline, with a trajectory to the right anterior skull base. Computed tomography angiography revealed that the needle head was located at an approximately 3.57 mm depth from the inner table and attached to the cortical vein. The distal end of the needle was surrounded by the right distal pericallosal artery. No cortical injury or vascular injury was observed. The needle may have penetrated during the early period before the closure of the anterior fontanelle.

Keywords: Head trauma; Foreign body; Needles

INTRODUCTION

Intracranial foreign materials are usually found secondary to penetrating head trauma.^{5,7-9)} The sewing needles are very rare, and most of common causes are related to infanticide before closure of fontanelles.¹¹⁾ The author presents a 48-year-old male who had been found incidentally a sewing needle on skull X ray.

CASE REPORT

A 48-year-old male visited neurosurgery clinic for further evaluation of incidentally detected intracranial foreign material in X-ray. He did not have penetrating head trauma history and visited family medicine clinic because he felt light headache since some days ago. Skull X-ray revealed the foreign material. Repeated X-ray to accurate at the author's clinic revealed a sewing needle located from inner table directed to anterior skull base along midline (**FIGURE 1**). Computerized tomography angiography was performed to evaluate vascular compromise with the sewing needle. Proximal tip of the needle was 3.57 mm from inner table, and downward directed distal portion was surrounded by right pericallosal artery (**FIGURE 2**). Luckily there was no parenchymal injury or vascular abnormality. Over 40 years the needle is already firmly attached to brain with no symptom, clinical observation was recommended.

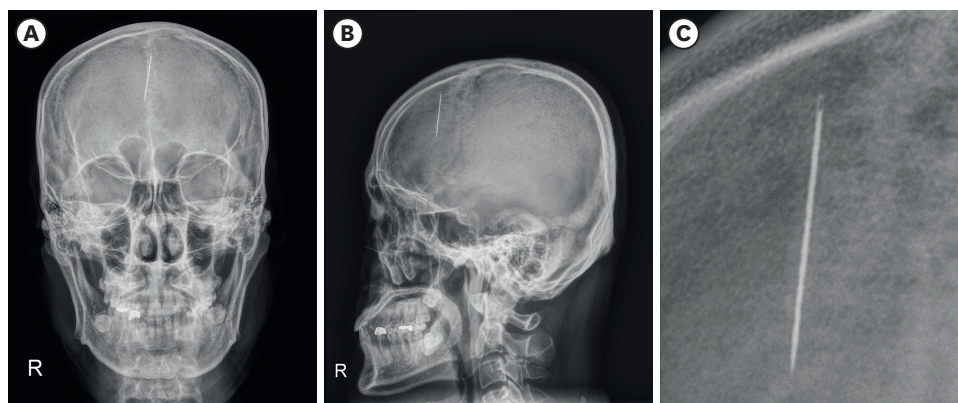


FIGURE 1. Skull X-ray that shows the foreign material in the cranium. (A) Anteroposterior view, (B) lateral view, and (C) needle head clearly seen in magnification.

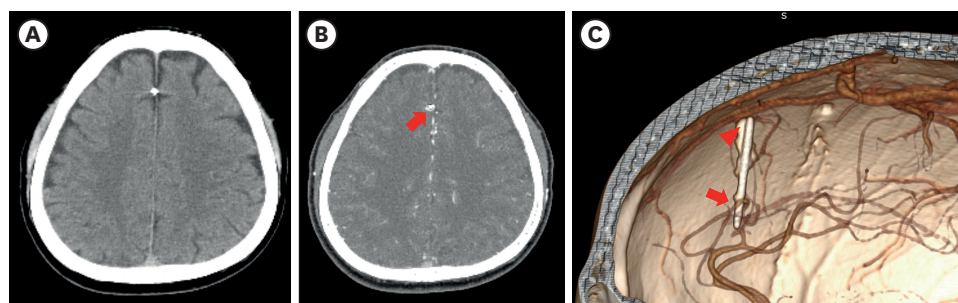


FIGURE 2. Computerized tomography angiograph. (A) The needle seated in interhemispheric fissure without cortical injury. (B, C) Right distal pericallosal artery (arrow) surrounds distal tip of the needle. Proximal tip is tightly attached to cortical vein (arrowhead).

DISCUSSION

Intracranial sewing needle is very rare, and mostly detected in the evaluation of headache, seizure, or head trauma.¹⁰ Most of them were related to infanticide or murder trial that sewing needle is inserted through the fontanelles before their closure in some regions. In unintended accidents, the entry points of the needle were reported as vertex, nostril and orbit.^{3,8,10} In the author's case, the patient had not history of brain surgery nor penetrating head trauma. Since the sewing needle was located close to the vertex, it entered the cranial cavity in early childhood after the accident or attempted child abuse. In the reported cases, the oldest who was detected the foreign body was 82-year-old-female.¹¹ The mechanism how long such a long period brain sustained well with the foreign body is not well explained. Brain tissue is more tolerable to metallic foreign body than bony fragments or wood material. The rate of brain abscess formation is quite low in such cases.⁴ In microscopic level, surface of the sewing needle is covered with irregular deposits of porous and flaky iron phosphate. This fibrous tissue acts as capsule to surrounding cortex or arachnoid membrane. It makes the sewing needle locate in the brain in safe for a long time.^{1,6} According to Amirjamshidi et al.,³ the coating precipitate is composed of Fe_2O_3 , MnO_2 , Cr_2O_3 and this compact oxide is poorly soluble in water.

There is no consensus about management with lack of clinical evidence. Many authors recommend conservative treatment in cases of incidentally detected foreign material.^{6,12,13} It also can be a potential risk because in some cases cause headache, seizure, or brain injury

from migration. But surgery had its own risk such as hemiplegia, aphasia, or death. In young age with clinical symptom or sign, the surgical removal is considered.^{1,2,4)}

CONCLUSION

The author presents intracranial sewing needle incidentally detected and reviewed mechanism and management.

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