

A 61 Year Old Man with Intracranial Sewing Needle

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Abstract

Intracranial foreign bodies are rare entities, sewing needles are even more so. There are very few cases reported in scientific literature. Most of the patients presented with headache or seizure, but some of them were asymptomatic. We detail a 61 year old man who was admitted to our hospital with slight dizzy and accidentally found a sewing needle in his brain. Fortunately, he suffered no headache or epileptic seizure and was asymptomatic during the past years.

Keywords: Intracranial sewing needle; Foreign body; Infanticide

Introduction

Embedding foreign bodies into brain has been rarely reported, which are commonly seen in brain surgery and head trauma situation. The foreign bodies could be surgical objects, bullets, wood, nails, knives and even sewing needles [1,2]. Gerlach and Jensen reported the first case of intracranial sewing needles in 1914, up to now, there are about 50 cases in the scientific literature have been reported. Most of them were reported from Iran and Turkey, which are Moslem countries where abuse child by other wives was common. Other cases were reported sporadically from the United States, Australia, Italy, Germany, Hungary, Poland, Yugoslavia, Japan and India [3,4]. In China, we can search two cases reported in Chinese. These needles must have been introduced in infancy before the closure of fontanelles. The purpose, at least in most cases, has been infanticide [5]. Most of patients presented with headache or seizure, low intelligence, fever, brain abscess, meningitis occur only occasionally, and almost 1/3 of them were asymptomatic [6]. At present, there are no consensus upon the management of such patients. The purpose of this article is to deliver more evidences to the clinical presentation of intracranial sewing needles. Here, we detail a 61 year old man who had a single intracranial sewing needle with occasionally slight dizzy.

Case Report

A 61 year old man admitted our neurology clinic with slight dizzy for two days. The patient has no history of headache, seizure, loss of consciousness or vomiting, and his neurologic examination was unremarkable. A brain computed tomography (CT) scan surprisingly revealed a hyper-density metal object near the cerebral falx (Figure 1). Subsequent plain X-ray of the skull revealed one sharp intracranial sewing needle, nearly 5 cm in length, situated under the sagittal suture (Figure 2). There was no record or sign of previous trauma or any surgical procedures on the scalp, skull or brain. The patient and his relatives stated that they did not know how this needle had been introduced. The position of the foreign body, however, suggested that it was probably inserted through the anterior fontanelle when the patient

was an infant. No surgical procedure was applied for this patient because he had no clinical symptoms. In addition, he was informed about the contraindications for magnetic resonance imaging (MRI).

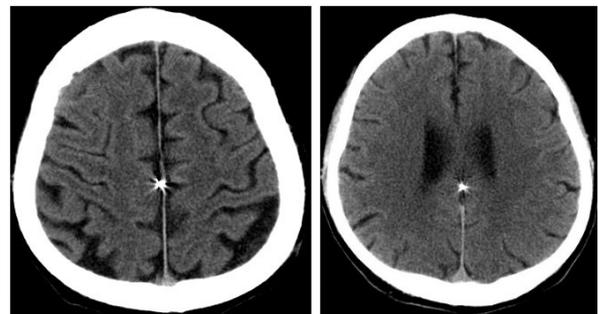


Figure 1: Transverse computed tomography images show metallic opacity accompanies with the cerebral falx.



Figure 2: Plain X-ray show a metallic sewing needle located under the sagittal suture.

Discussion

Intracranial foreign bodies, especially sewing needles, are quite uncommon in clinical practice. Most cases were incidentally detected during evaluate for headache, seizure or head trauma, and few of them were diagnosed in an unrelated autopsy [7]. In many conditions, sewing needles were used as a tool of child abuse [8]. It has been inserted through either of the fontanelles before their closure in an attempted infanticide, mainly because of this method of murder could be hidden more easily. In some polygamy widespread countries, such as Iran and Turkey, this phenomenon is more commonly seen. The criminal may be a stepmother, for the reason of jealousy, revenge and seize the property [6]. Up to now, there were nearly 50 cases reported all over the world, but these reports may be the tip of the iceberg given that many infants would died soon after the murder, and most of survivors may undetected due to lack of symptoms. In our case, the needle was also occasionally found during a routine evaluation of dizzy. According to the position of the needle, we concluded that this must be the result of unsuccessful crime. Until now, the oldest age at symptoms first present is 82 [9], reveals a question that how did the brain tolerated those sewing needles in such a long period without any symptoms. Azariah et al. showed that the brain tissue tolerates metallic foreign bodies very well, and the incidence of delayed brain abscess is relatively rare [10]. A mechanism has been reported, it has been shown that a fibrous capsule, containing deposits of porous and flaky iron rust, covers the surface of needle, and makes the needles avoid the rejection of the brain [11]. Amirjamshidi et al. used quantitative XRF spectrometry to examine the ingredients of the needles and its coating. The result indicated that the coating precipitate is composed of Fe_2O_3 , MnO_2 , Cr_2O_3 and this compact oxide is poorly soluble in water [6]. This may be the explanation of why the needles are so well preserved.

Although no consensus regarding the management of these foreign bodies has been agreed upon due to lack of evidence. According to the majority of authors, if the foreign bodies are discovered incidentally, conservative management should be considered [12,13]. Leaving the needles in brain poses a number of potential risks, including seizure, headache, infection, migration of the needles and subsequent neurological injury. However, surgery exposes an individual to operative complications, such as hemiplegic paralysis, aphasia or even lead to death [10,11]. We, therefore, suggest that operation should be performed if the patient is young and appears clinical signs or symptoms, otherwise, the conservative treatment will be the best choice.

Another question is whether we should tell the truth to the patients. In current case, we told the patient the existence of the sewing needle in his brain and informed him MRI is forbidden. Unfortunately, we observed a persistent anxiety syndrome during follow up. Abbassioun

reported similar psychological burden of the patients. He suggested that the patient should be told the truth but no explanation volunteered [6]. Maybe, for the victims mental intervention should also be required.

Ethics statement

This study was approved by the ethics committee of Fuxing Hospital, Capital Medical University, Beijing, China. Written informed consent was obtained from the participant.

Conflicts of Interest Statement

We declare that we have no conflict of interest.

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