CASE REPORT

Unexpected foreign body in the leg of an 8-month-old child

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SUMMARY

Accidents and injuries associated with foreign bodies are important causes of childhood mortality. Diagnosis can be facilitated by obtaining a detailed history, performing a physical examination and utilising simple imaging methods. We report a case involving a fragmented sewing needle in the left leg of an 8-month-old male infant. He was admitted to our clinic with diffuse pain in the left leg, limitation of leg movements and an inability to stand. The patient was successfully treated with open surgery under fluoroscopy. Soft tissue foreign bodies and potential child physical abuse should be considered in children with ambiguous symptoms and unusual skin lesions. Parents should be educated on prevention of household accidents involving children. Penetration of sewing needles into the body has been rarely reported in the literature. We thus report this case to draw attention to the complications and morbidity associated with a delayed diagnosis in such cases.

BACKGROUND

Diagnosis of foreign body penetration can be made by obtaining an accurate history, performing a thorough physical examination and utilising radiological imaging methods. The reports of patients and relatives on admission can vary according to the foreign body insertion site.^{1 2} However, the physician should be cognizant that very young children cannot readily express their complaints.³ Sewing needle penetration may lead to significant injuries and is an important cause of household accidents and child abuse.^{4 5}

The purpose of this case report is to draw attention to the relationship among child neglect, skin lesions and sewing needles. We also discuss complications associated with foreign bodies and currently available radiological methods.

CASE PRESENTATION

An 8-month-old male infant was brought to our clinic by his parents with symptoms of irritability, frequent crying, sleep irregularity, mild erythematous skin lesions at two different locations of the left leg, and an inability to stand. A babysitter regularly cared for the child during the day. The child had no history of medical or surgical treatments, and he was healthy otherwise. His general systemic examination findings were within normal limits, and he had no trauma history.

General clinical examinations revealed two mildly erythematous, depressed lesions: one on the left posterior distal leg, and one on the anterior ankle. The lesions were painful and firm on

Figure 1 Mild erythematous depressed lesions on the 1/3 distal posterior region of the leg which are painful and firm by palpation.

palpation (figure 1). There was no accompanying discharge, swelling or heat associated with the lesions. The distance between the two skin lesions was 7 cm, and they were positioned obliquely in relation to each other.

A radiological examination was performed, and three fragments of a 4.5 cm sewing needle were found between the fibula and skin on anteroposterior and lateral X-ray views (figure 2). A detailed medical history was obtained from the child's parents. Infant abuse was considered based on the facts that the babysitter was on psychiatric medication and exhibited suspicious behaviour (eg, avoided eye contact), and the patient's father (who was a medical doctor) had reported minor ecchymoses on the child's upper extremity 3 months previously.

Surgical excision of the subdermal foreign bodies was performed. With the patient under general anaesthesia, the foreign bodies were localised using guide wires under fluoroscopy. The foreign bodies were retrieved after soft tissue dissection. After the operation, bidirectional X-ray images showed no residual foreign body.

DISCUSSION

Injuries due to foreign body penetration can occur as a result of either simple household accidents or child abuse. Sewing needles are rarely involved in household accidents. They may enter the body through inhalation, skin penetration or ingestion. The route of entry may be related to the sharpness or stiffness of the needle.

According to previous reports of needle penetration, complications vary from simple to severe, and the setting may vary from simple household accidents to child abuse. A 6-year-old boy developed

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Figure 2 Anteroposterior-lateral X-ray radiography showing 4.5 cm sewing needle broken into three pieces from two points between the fibula and skin.

acute appendicitis following accidental ingestion of a sewing needle.⁶ Broken needles within the gastrointestinal system are difficult to diagnose because they may migrate.⁷ In one case, sewing needle penetration that occurred during childhood led to the formation of a fistula between the jejunum and aorta in a young adult man.⁴ This type of migration may complicate the identification of the foreign body during surgery.⁸ As mentioned earlier, sewing needle insertion may also be associated with child abuse, which is defined as non-accidental injuries that severely affect the health or life of a child. Lukefahr *et al*⁹ reported a case involving abuse of a 13-month-old toddler with penetration of one sewing needle in the perineum and two in the gluteal soft tissues. Rahimizadeh *et al*¹⁰ and Abbassioun *et al*¹¹ reported cases of intracranial sewing needle penetration in adult patients. Patients diagnosed during adulthood may have been subjected to child abuse involving penetration of needles through the open fontanelle as infants. The diagnosis may be delayed due to the asymptomatic nature of the foreign body. Because obtaining an anamnesis from an infant or toddler is impossible, both accidents and abuse must be considered in such cases. In the present case, the patient was brought to the hospital by his parents, who reported a 15-day history of irritability, sleep problems and skin lesions on two different areas of the left calf. The parents stated that the babysitter was on psychiatric medication and exhibited suspicious behaviour. Although there was no known trauma, minor ecchymoses on the child's upper extremity were reportedly present 3 months previously. The sewing needle was broken into three pieces despite the fact that the location was immobile. All of these considerations led to a suspicion of infant abuse by the babysitter. However, Sturiale *et al*¹² reported the parents as the responsible party in their review article. Major risk factors for abuse include a young age of the mother, low educational level, young age during pregnancy and delayed prenatal care.¹³ In their 1979 review article, Abbassioun *et al*¹¹ reported that stepmothers had higher risk of inflicting abuse than did mothers and aunts because of jealousy, feelings of infertility and anger transfer. The present case involved only one foreign body (three fragments) and no

accompanying pathologies that were consistent with an accident. Despite all assumptions of either abuse or accident, solitary needle penetration is generally assumed to be an accident whereas multiple needle penetration is assumed to involve abuse.^{9–11}

Diagnosis of a foreign body can easily be missed because the needle entry hole heals within a short time. The clinical picture may suggest other conditions. Foreign bodies may not be symptomatic until the secondary inflammatory reaction occurs 2–3 weeks later. In the present case, one of the symptoms on admission was the presence of mildly erythematous, depressed skin lesions. The patient had no trauma history; thus, the differential diagnoses initially included dermatological conditions. However, many previous studies in the literature have verified that a thorough physical examination is necessary in such cases. Phillips *et al*³ found a sewing needle in a child admitted to the hospital for hip pain. The sewing needle was found by a careful physical examination. If there is no suspicion of foreign body penetration, X-ray imaging should be performed. Metallic foreign bodies and some glass foreign bodies can be seen on X-ray images. Conversely, plastic or wooden foreign bodies are not generally seen on radiographic images. Ultrasonography is particularly effective in the diagnosis of soft tissue organic foreign bodies.¹⁴

When a foreign body is found radiologically, it should be retrieved before complications develop. Organic foreign bodies frequently lead to infection, abscess formation and discharge. For example, Barrett¹⁵ reported that foreign bodies from palm trees may lead to severe soft tissue reactions and formation of pseudotumors.

Learning points

- In conclusion, this case report illustrates that the possibility of child abuse should be considered when foreign bodies are found in infants. Although medical treatment does not differ between cases of accidents or abuse in infants and children, preventive healthcare and child safety differ substantially.
- Metal foreign bodies can be found by radiography, whereas organic foreign bodies can be diagnosed using ultrasonography. Foreign bodies should be retrieved as soon as possible to prevent complications.
- Family members should be informed about household accidents, chemicals and devices or tools that may lead to foreign body penetration.

Contributors SM was involved in study design. TMD diagnosed the patient and performed the surgery and treatment. ET worked in data collection. HM helped in English language editing and writing the manuscript.

Competing interests None.

Patient consent Obtained.

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