

Intraosseous Metallic Foreign Body: A Case Report

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Abstract

Background: The presence of intraosseous metallic foreign bodies without trauma or notion of surgical gesture, especially orthopedic implant placement, is rare. We report a case of an infant with an intraosseous metallic foreign body. **Case Report:** A 23-month-old male infant was consulted for febrile respiratory distress with a history of left calf pain. Chest X-ray identified pneumonia, which improved with treatment, and X-ray of the left leg revealed a metallic foreign body at the metaphyseal-diaphyseal junction of the left tibia and fibula. A conservative management approach was chosen with monitoring. **Conclusion:** The case described here is rare and his management can be conservative or not.

Keywords

Metallic Foreign Body, Intraosseous, Infant

1. Introduction

The presence of an intraosseous metallic foreign body is often found in adults but very rarely in infants [1] [2]. Intraosseous metallic foreign bodies are most often caused by trauma or surgery, especially orthopedic implants. The diagnosis is rarely made in the absence of these circumstances [1]. The presence of an intraosseous metallic foreign body may be asymptomatic, depending on the anatomical position, or symptomatic, with symptoms such as pain, soft-tissue swelling, and hardware irritation [3] [4]. We report here the case of a 23-month-old infant in whom we discovered a needle-shaped foreign body projected from the left calf to the metaphyseal junction of the left tibia and fibula.

2. Case Report

The patient was a 23-month-old male infant admitted for febrile respiratory distress with a history of left calf pain. The onset was one week prior to admission, and the patient was characterized by acute febrile gastroenteritis treated with metronidazole, amoxicillin, ibuprofen, and zinc, with improvement of the digestive disorders. However, the onset of respiratory distress prompted consultation at the Prefectoral Hospital of Kpalimé and hospitalization in the pediatric ward. Pain in the left calf had occurred suddenly four months earlier, with partial functional impotence of the left lower limb. The infant's parents had attributed the pain to a mystical spell. There was no evidence of trauma or surgery. The infant was the third of three siblings, all alive and well. He was well vaccinated, and there was no evidence of tuberculosis.

Examination revealed: altered general condition, infectious syndrome, tachypnea with bilateral pulmonary condensation syndrome. There was no redness or swelling of the left calf. Palpation of the left calf was painless without local heat.

The blood count showed a hyperleukocytosis of $18,540/\text{mm}^3$ with lymphocytosis of $12,421/\text{mm}^3$. Hemoglobin level was 9.7 g/dL and mean corpuscular hemoglobin and mean corpuscular volume were normal. Platelets were $273,000/\text{mm}^3$. C-reactive protein was 72 mg/L. The Xpert MTB/RIF test (stool sample) was negative, as was HIV retroviral serology.

Chest X-ray (front view) showed bilateral alveolar syndrome. X-rays of the left leg (front and side views) revealed an image of a metallic foreign body on the upper extremities of the left tibia and fibula (**Figure 1**). An X-ray of the rest of the body (**Figure 2**) did not reveal any other location of this type of foreign body.

We concluded pneumonia and a metallic foreign body in the upper extremities of the left tibia and fibula. The pneumonia was treated with ceftriaxone (7 days) and gentamicin (3 days). Pneumonia progressed favorably. In the case of the foreign body, the infant's parents were reluctant to opt for surgical management. A conservative management with monitoring was prescribed, with surgical removal in the event of a subsequent clinical manifestation. After six months of follow-up, there were no local clinical manifestations.



Figure 1. Needle-shaped metallic foreign body in the upper extremities of the left leg bones.

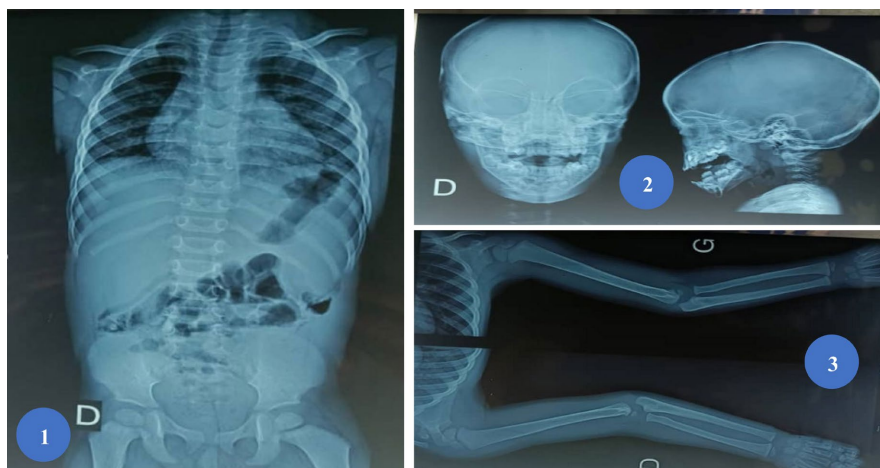


Figure 2. X-ray of the rest of the body (1) front thoraco-abdominal, spine and pelvis X-rays; (2) front and side skull X-rays; (3) front upper limb X-rays.

3. Discussion

Although the presence of metal objects may appear frequently in the digestive tract through ingestion of food, in the respiratory tract through accidental inhalation or in other soft tissues through trauma, it is very rare in bone, particularly without any notion of trauma or surgery [5]. Intraosseous metallic foreign bodies are often found in adults but very rarely in infants [1] [2]. The type of foreign body and the route of penetration may vary according to cultural and socio-economic factors, as in the case of acupuncture [2] or child abuse [6]. In our patient, there was no evidence of trauma, surgery or other high-risk medical practice. However, it is possible that the infant has had a traumatic injury with transcutaneous penetration of the foreign body. In Togo, as in other African societies, disease in general, and particularly that for which initial medical investigations have failed to establish a precise diagnosis, gives rise to speculation based on cultural beliefs. Illness can therefore be seen as a bewitchment, a spell, a curse cast on the sick person by a sorcerer, or a transgression of laws and taboos with punitive vengeance from the ancestors. In the case of this infant, the mother was strongly convinced that it was a sorcerer who had a grudge against her and wanted to take her child's life by casting a bad spell. Management of intraosseous metallic foreign bodies depends on the clinical manifestations of these foreign bodies. This management can be conservative or not depending on the circumstances [2] [6] [7]. In this infant, management was conservative with monitoring due to the absence of current clinical manifestations, his young age and the parents' reluctance to opt for surgical management. However, any subsequent clinical manifestation should lead to surgical removal.

4. Conclusion

Metallic foreign bodies can be discovered by coincidence in any part of the body, but they are very rare in infants. Management depends on the circumstances. In

this infant, the needle-shaped foreign body was found in the upper extremities of the left tibia and fibula, following a history of left calf pain.

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The authors have nothing to report.

Ethics Statement

This work was completed in compliance with CARE guidelines and the relevant organizational ethics oversight committee. All authors attest that they meet the current ICMJE criteria for Authorship.

Consent

Patient consent for this work was provided by the patient guardian.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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