

A Right Gluteal Swelling in a 44 Days Old Baby: Challenges in its Diagnosis and Management

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ABSTRACT

In this case report, we describe a case of 44 days old male baby who developed swelling in right gluteal region, gradually progressive, associated with pain, fever and excessive cry since 3 days. On Ultrasonography of the soft tissue showed well defined echogenic linear morphology structure noted for length of 2.5cm foreign body (metal piece / needle) in the right gluteal space at subcutaneous plane. Patient was taken up for surgery under anesthesia with the use of image intensifier. Needle was located and removed. Swelling and pain reduced rapidly. Hence is being discharged with advice and further oral treatment. The following case describes hazards due to mismanagement of needles and suggests valuable guidelines for minimizing the complications arising due to needle.

Keywords: Gluteal Region, Fever, Foreign Body, Pain, Needle

Introduction

Skin, subcutaneous and deep fat, blood vessels, the gastrointestinal system, muscle, neural tissue, and bone are all found in the gluteal region. Based on unique imaging features and the tissue of origin, a solitary lesion in this area can be diagnosed differently. When it comes to the diagnosis of these lesions in newborns and early children, ultrasound is particularly crucial [1]. The pathologic disorders lipoma, myxoma, rhabdomyosarcoma, and myositis ossificans affect the gluteal muscles. Heterotopic ossification of skeletal muscle resulting from trauma-induced mesenchymal connective tissue cell metaplasia is known as myositis ossificans [2]. The most prevalent benign tumor of the soft tissues, lipoma, originates from mesenchymal cells. It is made up of fully developed adipocytes and resembles subcutaneous fat in terms of imaging properties [3]. Rhabdomyoblasts, or primitive striated muscle cells, are the precursors of rhabdomyosarcoma, the most prevalent soft-tissue sarcoma in children. Rhabdomyosarcoma in the gluteal area arises from the gluteal musculature (alveolar type) or from the genitourinary tract and perineum (botryoid type) [4].

In this case report, we describe a case of 44 days old male baby who developed swelling in right gluteal region, gradually progressive, associated with pain, fever and excessive cry since

3 days. Our objective in presenting this particular case is to highlight the differential diagnosis of swelling in right gluteal region, its diagnosis and management.

Case Report

Mother noticed swelling in right gluteal region since few days of her 44 days old male baby, gradually pain with fever and excessive cry since 3 days. Treated with local hospital after no satisfaction, came to our hospital for further evaluation and management with same complaints.

We admitted the infant and done further examinations. On Physical examination, diffuse swelling in the right gluteal region, with erythema and edema of the overlying skin, local rise of temperature present, soft and tender on palpation. Blood investigations showed HB 13.6 gm% and TC 12720 cmm.

On Ultrasonography soft tissue of perianal region showed well defined echogenic linear morphology structure noted for length of 2.5cm foreign body (metal piece / needle) in subcutaneous plane over the right gluteal region, Figure 1. and 2. Patient was diagnosed with foreign body in subcutaneous plane and was planned for exploration under anesthesia. Foreign body was removed under radiography guidance, under anesthesia then aseptic dressing done.

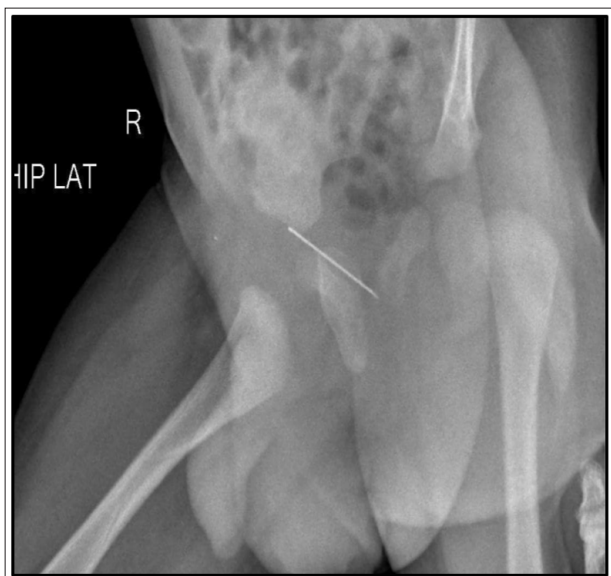


Figure 1: Needle in gluteal region posteriorly along skin marker pins.

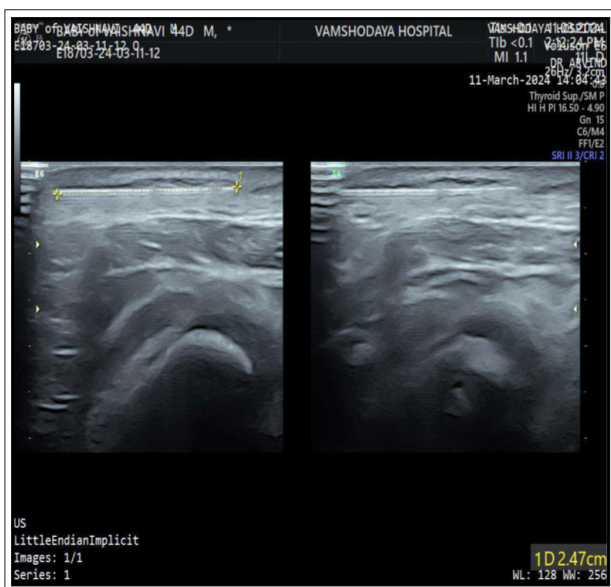


Figure 2: Ultrasonography showing the foreign body in subcutaneous plane

Post operatively, patient was started on IVF, IV antibiotics and other supportive treatment. Oral feeds started on POD 0. Post-operative period was uneventful. Baby improved clinically during the course of stay in the hospital. No further complaints of pain, fever, swelling with baby. Hence is being discharged with further oral medications.

Discussion

There have been instances of needle breakage in the past, most of which have been case studies involving needle breakage during dental procedures [5]. After a thorough literature search, the authors were unable to locate any prior research or case studies involving a broken hypodermic needle used for an intramuscular injection. In this instance, the clinical events were intriguing. There isn't enough grade 1 or 2 evidence data in the literature to properly agree on whether or not the broken needles should be removed. According to Brown et al., removal is not always required unless the patient exhibits symptoms or signs as a

result of the fractured needle [6]. The risk of the needle moving in the tissues, puncturing an important structure, and harming the neurovascular structures is the reason for the other ones' suggestion of a definitive removal [7]. An uncommon instance of an intravenous drug user who had broken needle fragments lodged in the inferior wall of the right ventricle was reported in a case report [8].

In a study by Smedegaard Heidi et al, the average age at which symptoms appear is 19 days (range: 11-28 days), yet the diagnosis and commencement of treatment are typically delayed (range: 1-14 days). The most common initial symptoms are swelling (95%), discomfort (71%), and decreased motion (76%), and almost two-thirds of cases have all three of these symptoms. At diagnosis, less than half of the patients have a temperature. Spondylodiscitis, osteomyelitis, arthritis, and skin infections are the predominant sources of infection in about 25% of cases that have been recorded. These cases also have bacteremia. Sepsis has not been linked to any of the cases described. [9].

Specific recommendations for the retrieval of needles are lacking. Leaving a needle in this way might result in the creation of an abscess at the site and, in severe situations, embolism and endocarditis. Proximal migration of the needle during manipulation can occasionally result from an attempt to remove the needle itself. This author highly advises that individuals abusing intravenous drugs be made aware of the possibility of needle fracture, particularly when the needle is reused repeatedly and the significance of using a tourniquet as soon as possible to stop the needle from migrating proximally [10].

In a case of intravenous drug abuser who presented within two hours of the incident with an intraluminal needle break. The local injection site successfully collected the fractured needle fragment. The patient acknowledged using a re-used syringe to inject heroin into his left proximal forearm vein several times, and that the needle broke during the injection process. [11].

In another case, femoral artery vascular punctures were performed repeatedly on an obese 87-year-old woman with widespread edema in order to obtain arterial blood gas analysis (ABGA). The needle of this syringe was removed when it was pulled out following this episode of blood collection. The fractured needle was discovered to be embedded in the groin by radiography. The buried needle in the soft tissue was found by a surgical incision using fluoroscopic radiography, which made it possible to remove its shards from the soft tissue in the groin [12].

Following are the some literature based on the research;

Author	Study report
Chung SW, et al. [13]	In this case, the needle became detached from the syringe during syringe withdrawal and stayed inserted into the tissue. Potential causes of needle detachment include patient error, operator error, and syringe flaws. Thicker tendon, increased tendinosis, and delaminated rips are risk variables linked to needle breakage of the ante grade suture passer.

Shah SJ, et al. [14]	According to this case study, the probability of a broken needle during spinal anesthesia is increased by emergency procedures, morbid obesity and repeated puncture attempts, redirection without an introducer, poorly distinguished landmarks, and resistance to needle advancement.
Laukkala H., et al [15]	Sometimes the patient refuses to have the needle fragment that is still inside the body removed.
EREN M. [16]	An example of this is a foreign body that moved from the elbow antecubital fascia to the shoulder pectoralis major fascia in the early stages following admission. A 20-year-old girl had a needle pierce her elbow region, resulting in her visit to the emergency room. There is a puncture in the antecubital area. X-rays revealed a metal needle in the axilla. The pectoralis major fascia was the site of the needle removal.
Kim SH, et al [17]	A case study concerning a 10-year-old girl who received daily growth hormone (GH) injections and had idiopathic low stature. She misplaced the needle after it was administered, but an ultrasound sonography and radiography check of her buttock revealed it was embedded in subcutaneous tissue. It was observed that skin rash, redness, swelling, and itching are examples of local injection site reactions. A weak needle during GH reconstitution, an improper injection method, and a needle flaw are among the potential explanations in this case.

During a procedure, injection, or even a simple vascular puncture for blood collection, needles have the potential to break and stay inside the body. It's critical to find the broken needle and remove it with caution and speed. In order to prevent breakage during vascular puncture for blood collection, it may be required to pick the right needle size and puncture site and to check the needle beforehand.

Conclusion

The management of a foreign body at gluteal region in a case of 44 days old male baby is described. Due to the needle's potential to migrate to important structures and the potential for psychological and medicolegal complications, immediate surgical removal is necessary. It is crucial to use the right injection technique and site since poor technique or the inappropriate injection site might cause such complications. Before administering injections or performing other treatments for neonates, medical personnel, particularly those working in basic health clinics, should exercise a high degree of suspicion and caution in order to prevent morbidity and mortality.

Summary

- In this case report, we describe a case of 44 days old male baby who developed swelling in right gluteal region, gradually progressive, associated with pain, fever and excessive cry since 3 days.
- On Physical examination, diffuse swelling in the right gluteal region, with erythema and edema of the overlying skin, local

- rise of temperature present, soft and tender on palpation. Blood investigations showed HB 13.6 gm%, TC 12720 cmm.
- On Ultrasonography of the soft tissue showed well defined echogenic linear morphology structure noted for length of 2.5cm foreign body (metal piece / needle) in the right gluteal space at subcutaneous compartment.
- Post operatively, patient was started on IVF, IV antibiotics and other supportive treatment.
- No further complaints of pain, fever, swelling with baby. Hence is being discharged with further oral medications.

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