



BMH Med. J. 2019;6(2):71-73. **Case Report**

Tuberculous Abscess At Diphtheria, Pertusis And Tetanus (DPT) Vaccination Injection Site

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Abstract

Localized abscess at the same site of bacillus Calmette-Guerin (BCG) vaccine is a known complication. However occurrence of such abscess at other sites is uncommon. We report a case of a small child who developed swelling over the thigh following intramuscular injection at 14 weeks for DPT vaccination. Histopathology showed caseating granulomatous inflammation and tuberculosis polymerase chain reaction (TB-PCR) was positive, culture report came as *Acinetobacter* species. Specimen was sent for gene mapping and they isolated BCG strain. Inadvertent inoculation of BCG vaccine in place of DPT vaccine at 14 weeks could be a possible reason.

Case report

A small child presented with a swelling over the anterolateral aspect of thigh. This swelling was noticed for the first time, after four months of receiving intramuscular vaccination in the thigh. Vaccination was given at the age of 14 weeks as part of vaccination schedule, and the swelling was gradually increasing in size. No history of pain, trauma, fever, weight loss, cough, and no history of contact with TB patients. On examination 3 x 2 cm soft, fluctuant, nontender, swelling over anterolateral aspect of the thigh was noted. Skin over the swelling was stretched and shiny. There was a BCG scar over the upper arm. No swelling was noted anywhere else in the body.

Laboratory tests showed white blood cell count $15,400/\text{mm}^3$ (25% neutrophils, 57% lymphocytes, 11% eosinophils and 7% monocytes); hemoglobin 12.5g/dl; erythrocyte sedimentation rate 9mm/hr; C-reactive protein <1mg/L; liver function test and coagulation profile were normal; serology for human immuno deficiency virus (HIV) was negative. Chest X-ray was normal and X-ray of femur showed no evidence of Osteomyelitis.

USG report showed subcutaneous thick walled collection extending to intermuscular plane and no evidence of intramuscular extension, collection measured 2.9 x 1cm.

Needle aspiration done from outside hospital and the aspirate fluid report came as acid fast bacilli

(AFB) stain positive. Incision and drainage, biopsy was done by us. Intra-operative findings was around 10-20 ml of thick yellowish pus aspirated and pus was in the subcutaneous tissue extending into intermuscular plane and sample sent for gram stain, AFB stain, culture and sensitivity, TB-PCR and histopathology.

TB-PCR result was positive by DNA amplification for mycobacterium complex. Gram stain showed gram negative bacilli; culture report came as acinetobacter species and AFB stain and culture was negative. Histopathology reported as Caseating granulomatous inflammation. Same specimen sent for gene mapping and they identified BCG stain in the specimen.

Child was started on intravenous antibiotics initially after discussion with pediatrician then once TB-PCR result came, anti-tubercular drugs started. At present child is 6 month post op – child is active, growing well and swelling completely subsided. Case has been reported to the local health authorities. Consent for publication has been obtained.

Discussion

Cold abscess refers to an abscess that lacks the intense inflammation usually associated with bacterial infections [1]. In developing world, TB still remains the most common cause for cold abscess. Isolated cold abscess of the thigh without active tuberculosis elsewhere in the body is a rare entity and only a few cases have been reported in the literature [2-6].

As per World Health Organisation (WHO) guidelines, BCG vaccine is given to newborns at the time of birth through intradermal route [7]. Cold abscess in the thigh following BCG vaccination is a known complication reported in the literature [8]. In our case BCG vaccine was given to the child in the upper arm, as the scar was clearly visible. But it is difficult to explain the origin of infection of TB cold abscess in the thigh following DPT injection.

Two possible explanations could be possible here. One is tubercular infection at the site of injection following intramuscular BCG vaccination is given mistakenly in place of DPT vaccination. Other explanation is syringe contaminated with BCG strain is used for giving DPT vaccine. Because of the availability of disposable syringes in the present era for every vaccination, possibility of contamination seems less likely.

Conclusion

Cold abscess at intramuscular injection sites following vaccination could be due to inadvertent administration of intramuscular BCG vaccine. Correct vaccination techniques remain the most important factor in the prevention of vaccine-related complications.

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