

CASE REPORTS

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Medicolegal Opinion

The present case is a glaring example of increasing incidences of child abuse/neglect. The important information, which is missing in this case-report, is the birth order of the child. We are in the era of industrialization and globalization, where the value of money is increasing at the cost of humanity and human relations. The birth order of this child would have given the clue regarding the issues of unwanted child, gender inequality/discrimination and similar issues related with present social scenario, norms and structure.

The statement that family members were not suffering from any psychotic illness is difficult to accept and the authors should have clarified whether the evaluation was done by a qualified and competent psychiatrist.

The overall issue is that of the infringement of the 'Right to Life' guaranteed under article 21 of the

Constitution of India. It also involves the issues of living with dignity, gender inequality/discrimination and hence we may inform such incidents to Child Right Commission, women's right activists/organization, human right activists, Women and Child Development Department.

Finally, there is need to create awareness amongst Pediatricians, Obstetricians, General Physicians, Health workers (ICDS, School teachers etc.) so that early suspicion and diagnosis may help in saving the endangered life. Saving the girl child (more so when their sex ratio is rapidly declining) is important in our so-called cultured, highly educated and humanized society.

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Osteomyelitis due to BCG Vaccination

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ABSTRACT

A six month-old immunocompetent boy who received BCG at birth presented with multiple abscesses in left subaxillary region, and swelling and wound infection on the left arm. Radiographs revealed osteolytic lesion in the left humerus. A biopsy from the site revealed chronic

granulomatous lesion, positive for M. bovis on tissue culture. The lesion responded to antituberculous therapy and surgical treatment. There are no sequelae after 2 years of follow-up.

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The original BCG (Bacillus Callmette-Guerin) strain of *Mycobacterium bovis* was derived from multiple passages of wild-type *Mycobacterium bovis*(1). BCG vaccine is considered to be safe; however, some complications may occur, including abscess at the site of inoculation, ulceration at the vaccination site, and regional lymphadenitis(1,2). Some vaccine strains have caused osteomyelitis in 1 case per million doses administered(2,3). A meta-analysis of the published literature between 1950 to 1970(4) indicated the frequency of BCG osteitis as 1 in 80,000 in some European countries. This late complication may occur in children within a few months to few years after the vaccination. The lesions are localized in the metaphysis or epiphysis of long bones(5). Risk of osteomyelitis due to BCG in immunodeficient patients is much higher and is associated with fatal disseminated infection(4). We report a case of culture proven osteomyelitis in a 6-month old immunocompetent boy.

CASE REPORT

A six-month old boy was referred to our center with three abscesses in left subaxillary region, and swelling and wound infection on left arm. The complaints started four months ago and the child had received oral antibiotics at many occasions. There was no history of trauma. He was born by normal vaginal delivery to healthy parents. He received BCG vaccination at birth. Clinical examination revealed a febrile boy weighing 7.2 kg, with three mobile firm lymph nodes and three abscesses in the axillary region, swelling and wound infection on left arm. Tuberculin test resulted in induration of 7 mm. CRP and ESR were elevated. Leukocyte count was normal and blood culture was sterile.

Plain radiographs of the limb showed osteolytic lesion in the proximal of left humerus. Whole body scan revealed increased radiotracer activity in proximal of left humerus, suggestive of osteomyelitis. Antibiotic therapy was started with vancomycin and ceftriaxone.

Surgery was performed to treat the chronic osteomyelitis of humerus and revealed concentrated

purulent yellow to green material which was drained. Histopathological examination of the biopsy specimen revealed chronic granulomatous inflammatory reaction, but no acid fast bacilli were seen. Tissue culture from the biopsy specimen confirmed the diagnosis of osteomyelitis due to *M. bovis*. Based on these findings, the diagnosis of osteomyelitis due to BCG vaccination was confirmed. Immunological investigations for the evaluation of cellular and humoral immunity were performed and revealed normal findings. Treatment was initiated with antitubercular medications (isoniazid 10 mg/kg/day, ethambutol 15mg/kg/day, streptomycin 20mg/kg/day and rifampin 15mg/kg/day). Surgical curettage was carried out. Antitubercular therapy was continued for one year, the child is well after 2 years of follow-up and there are no sequelae.

DISCUSSION

Hematogenous spread of BCG vaccine may result in osteomyelitis, but this is a rare complication(6-8). Symptoms resulting in pediatric orthopedic referral may be vague and present up to 30 months following vaccination. They include osteitis, and septic fulminant osteomyelitis. The lesion may be distant to the site of injection(6), or on the same side of vaccination(7).



FIG.1 Post BCG vaccination osteomyelitis. Note the lucent area in the proximal left humerus.

As serious complications of BCG infection are thought to occur more frequently in patients with immunological deficiencies(4), we thoroughly investigated the immunological status of the patient. Tests for humoral or cell-mediated immunity yielded normal results. The diagnosis was made based on clinical history and the positive culture for *M. bovis*. There was no record of exposure to Koch bacillus, chest radiograph was normal and the patient recovered quickly after antitubercular therapy and surgical treatment.

Timely diagnosis of BCG osteomyelitis is important since therapy is effective when initiated early in the course of disease. But several factors may delay prompt diagnosis. The lesions may be overlooked due to their rarity. The symptoms tend to develop slowly, and the primary course is fairly benign. The chest radiological changes (when detectable) are not diagnostic, and blood tests in BCG related bone disease often show low grade inflammation, as seen in this case.

Treatment of BCG osteomyelitis usually consists of both surgical intervention and antitubercular medication. Operative treatment is recommended for two reasons; (i) specimens can be obtained for definitive diagnosis; and (ii) the healing process will be quicker. The course of disease seems to be fairly benign(9).

In conclusion osteomyelitis running a fairly benign course in children should arouse suspicion of a tuberculous origin, particularly if the disease does not respond favorably to treatment with recommended antibiotics.

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