# Post-BCG Axillary Necrotizing Fasciitis

J Okeniyi, O Adegbehingbe, I Dedeke, O Olorunnisola, T Ogunlesi, L Oginni

**Citation**

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**Abstract**

Neonatal necrotizing fasciitis, a rapidly progressive superficial infection is uncommon. An extensive axillary necrosis following BCG vaccination in a 15-day-old term Nigerian girl is reported. The probable precipitating factor and the management which resulted in a favorable outcome are discussed.

## INTRODUCTION

Neonatal necrotizing fasciitis, an uncommon fulminant and fatal disease, [1] is characterized by vascular thrombosis and necrosis following rapidly spreading bacterial infection of the skin, subcutaneous fat and fasciae. Sometimes systemic dissemination and toxicity also occur. [2] It commonly follows superficial Staphylococcal infections of the umbilical, pectoral and perineal areas and may follow procedures like circumcision.[3,4,5,6] However, reports of necrotizing fasciitis occurring in the axilla or following BCG vaccination are not known.

## CASE DESCRIPTION

A 15-day-old girl presented at the Wesley Guild Hospital, Ilesa, Nigeria in August 2005, with a wound over the left upper arm and axilla. Three days earlier, a blister was noticed on the left axilla; this enlarged rapidly and became purulent the day preceding presentation. She had BCG vaccination over the same arm at the age of 9-days but fomentation and other home treatments were denied. Her 22-year-old booked Para 1 mother had a normal pregnancy and delivery.

She was a well-sized term baby (weight 3.6 kg, full length 51.0 cm and head circumference 34.5 cm) with pallor, irritability and rectal temperature of 36.5°C. Systemic examination was essentially normal excepting the extensive skin necrosis over the anterio-medial and proximal aspects of the left arm and the adjacent lateral axillary wall with two satellite pustules. The entire left upper limb was hyperemic and edematous (Figure 1).

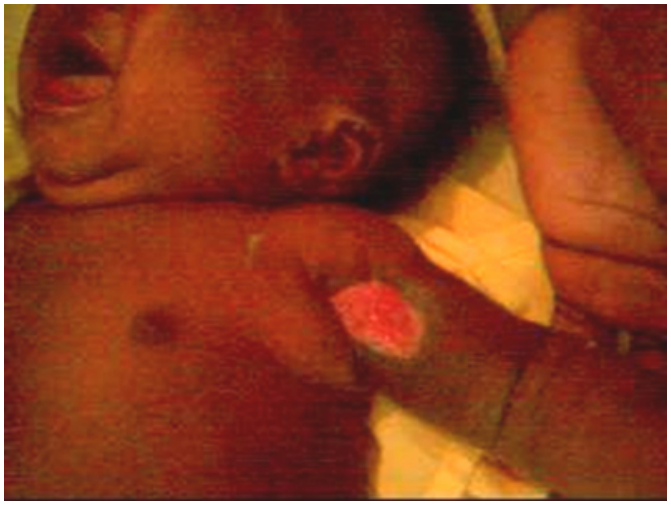
**Figure 1**

Figure 1: The necrotic lesion on the Left Upper Arm at presentation.

Necrotizing fasciitis was diagnosed. Blood culture yielded no growth, the HIV screening was negative and cell counts were all normal. Wound swab culture yielded a mixed growth of Pseudomonas aeroginosa and Staphylococcus aureus. Histology and X-Ray added no further information. Radical excision of the necrotic tissues followed with twice-daily honey dressing, back slab immobilization and limb elevation were done. She was managed with a 21-day course of parenteral Ciprofloxacin course based on the culture antibiogram. Anti-tetanus prophylaxis was also given. Figures 2 shows the lesion after 2 weeks of honey dressing. The wound healed satisfactorily by secondary intention without a skin graft. She was discharged home at the age of 40 days weighing 5.0 kg.

**Figure 2**

Figure 2: The same lesion after two weeks of honey dressing.



## DISCUSSION

Necrotizing fasciitis (NF) or "flesh eating disease" is an uncommon neonatal problem even in the tropics where the climatic conditions favor bacterial skin colonization and infections. [7] As with our patient, NF is a rapidly progressive condition of obscure etiology. This progression of the lesion was typically rapid but the site was unusual; the trunk, scalp and perineum were known to be commonly affected by NF. No other risk factor was obvious apart from the BCG vaccination taken on the same arm. Although, BCG may be complicated by local edema and axillary adenitis, [8] NF has not been reported to complicate BCG. Possible links include the initiation of the inflammatory cascade by either the trauma of inoculation or hypersensitivity reaction to the inoculum. The absence of histological evidences of tuberculosis also casts doubt on the possibility of disseminated BCGitis. The lack of clinical and laboratory evidences suggestive of tuberculosis and HIV in addition to the satisfactory outcome of the infant makes immunosuppression unlikely.

More plausibly, the inoculation provided a nidus for bacterial infection as the association of bacteria with NF is known. [1,2,3,4,5] The most frequent causal agent is Staphylococcus aureus which had been observed in cases of NF associated with omphalitis, [3] mastitis, [4] scalp infection and circumcision. [6] In our patient, S. aureus and Pseudomonas aeroginosa were isolated.

Although, we did not manage this patient with steroids in view of the harmful side-effects of steroids in neonates, we had a favorable outcome with the combination of radical excision, systemic antibiotic and topical honey therapy. Honey was particularly useful because of its proven de-sloughing and deodorizing properties [9] in addition to its efficacy on both S. aureus and Pseudomonas, which we isolated from our patient. [9, 10]

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## CORRESPONDENCE TO

Dr. JAO Okeniyi. Department of Paediatrics and Child Health, Obafemi Awolowo University, Ile-Ife, Nigeria. E-mail: akinyemiokes2@yahoo.com

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## Author Information

**John A.O. Okeniyi, BSc; MBChB; FWACP**
Department of Pediatrics and Child Health, (Department of Pediatrics and Child Health), Obafemi Awolowo University, (Wesley Guild Hospital)

**Olayinka O. Adegbehingbe, MBChB; FWACS**
Department of Orthopedic Surgery and Traumatology, (Department of Orthopedic Surgery and Traumatology), Wesley Guild Hospital, (Obafemi Awolowo University)

**Iyabode M.F. Dedeke, MBChB**
Department of Pediatrics and Child Health, Wesley Guild Hospital

**Olumide A. Olorunnisola, MBChB**
Department of Orthopedic Surgery and Traumatology, Wesley Guild Hospital

**Tinuade A. Ogunlesi, MBChB; FWACP**
Department of Pediatrics and Child Health, Wesley Guild Hospital

**Lawrence M. Oginni, MBBS; FWACS**
Department of Orthopedic Surgery and Traumatology, (Department of Orthopedic Surgery and Traumatology), Wesley Guild Hospital, (Obafemi Awolowo University)