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Case Report

Cefuroxime-induced congenital fixed drug eruption: A case report

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Abstract Fixed drug eruption was first described by Brocq in 1894 in association with antipyrine therapy. Since then numerous cases have been reported across the globe, some in association with drugs and others in association with food ingredients. We had a patient born with lesions having the characteristic of drug eruption clinically and interface dermatitis histologically. We considered it a case of 'congenital fixed drug eruption' as it was reproduced by cefuroxime.

Key words
Cefuroxime, congenital, fixed drug eruption.

Introduction

Fixed drug eruption (FDE) was first described by Brocq in 1894 in association with antipyrine therapy.[1] Since then numerous cases have been reported across the globe, some in association with drugs[2] and others in association with food ingredients.[3] FDE is characterized by erythematous patch with dark center which may progress to form blister. It is reproducible over the same sites each time the incriminated drug is taken by the patient. There is usually a single or a few lesions measuring from a few mm to several cm in diameter. It can appear anywhere on the body, though commonly seen on lips, tongue, nails, distal limbs, trunk and genital area particularly in glans and vulva. The eruption leaves behind residual pigmentation at resolution. Histopathologically there is variable keratinocyte necrosis, vacuolar degeneration of basal cell and pigment incontinence, dermal edema, and peri-vascular lymphocytic infiltration.[4]

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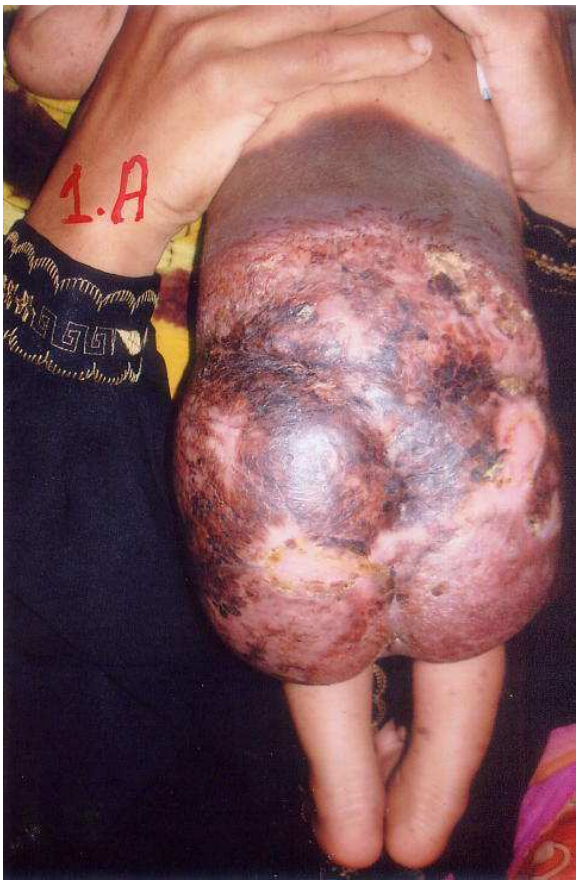
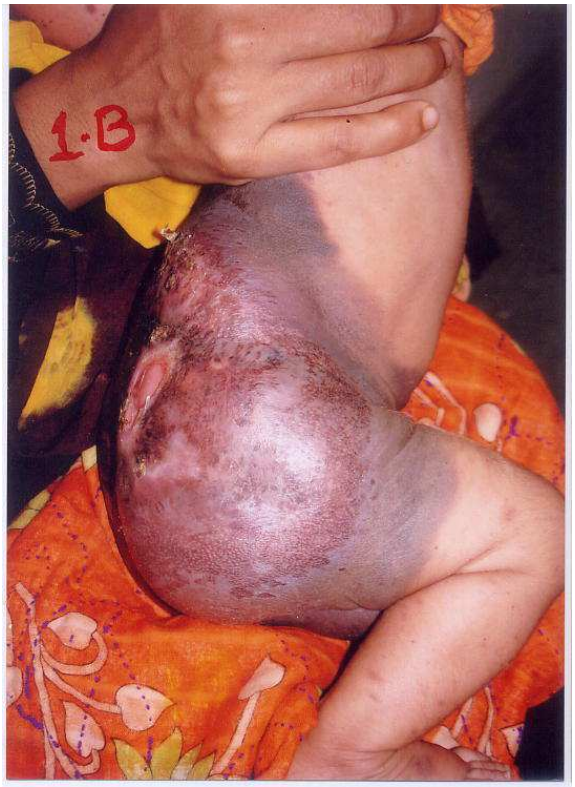
Case report

A full term boy was born in April 2008 with a large patch (29 cm) involving trunk, buttocks, genitalia and thighs. The central part of the patch was pinkish and swollen, and the peripheral part was dusky-red. The lesion was sharply circumscribed and slightly firm and had multiple large blisters over sacral area. In addition to it he had many dusky-red macules and tiny papules over remaining part of the body. Immediately after birth, the lager lesion rapidly evolved into a swollen woody hard plaque and some of the blisters ruptured to form erosions imparting a grotesque appearance (**Figure 1A-C**) for which he was immediately rushed to hospital, where he received preliminary management.

We further evaluated the baby even though it was otherwise healthy with normal vital signs and physiological activities. His routine blood, urine, stool, liver and kidney function tests were normal. His serum electrolytes and thyroid





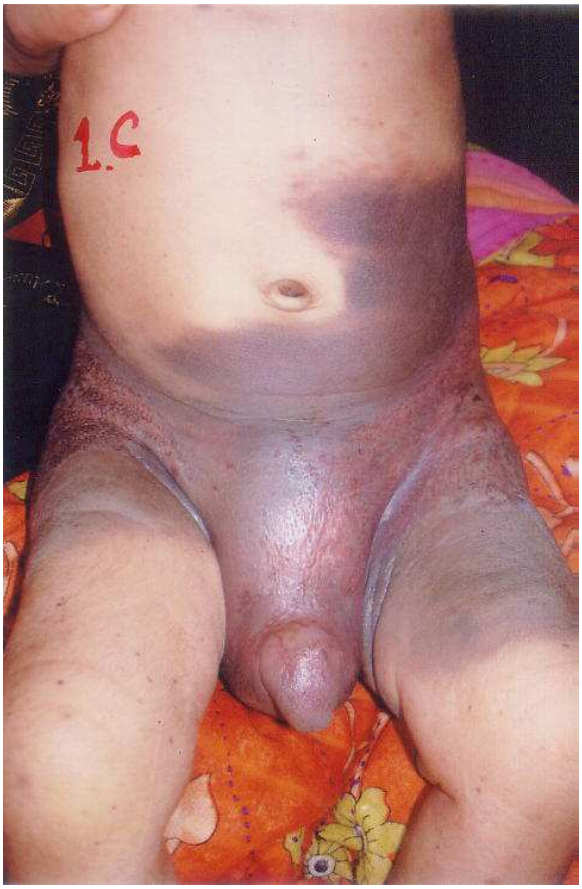


Figure 1A Posterior view. Sharply circumscribed woody hard big plaque over trunk and buttocks. Central part is pink, eroded and swollen and peripheral part is dusky-red. **Figure 1B**: right lateral view and **Figure 1C**: anterior view.

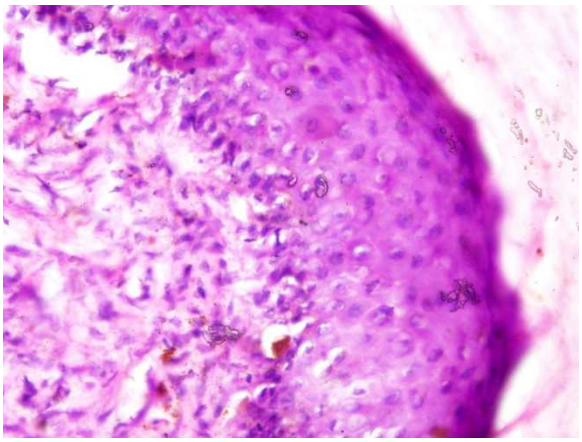
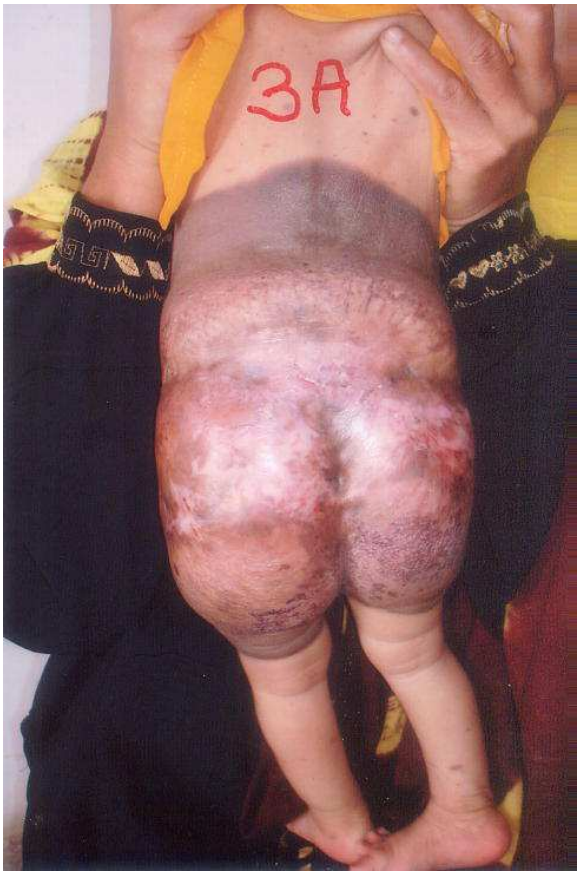
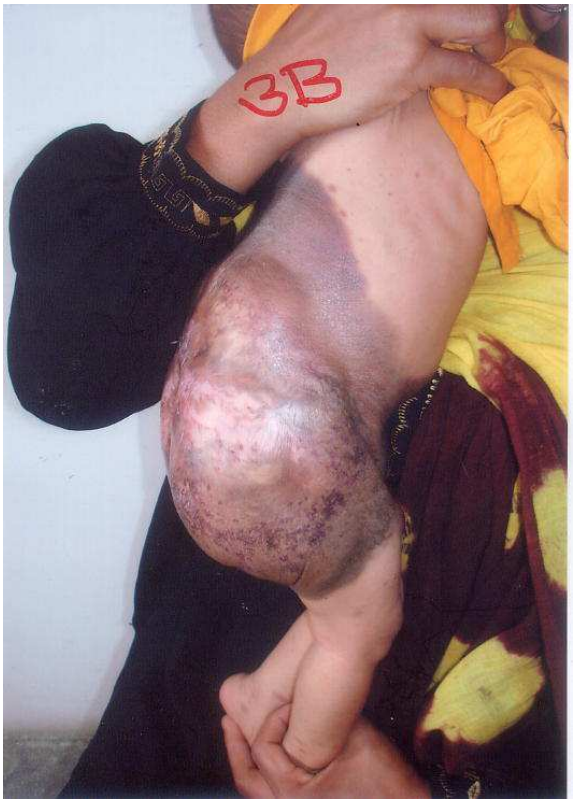


Figure 2 Scattered dyskeratotic keratinocytes in the lower epidermis, vacuolar degeneration of basal layer, pigment incontinence and melanophages in superficial dermis, edema and sparse peri-vascular mononuclear infiltrate with occasional eosinophils in upper dermis (Hematoxylin-eosin stained, 40X).





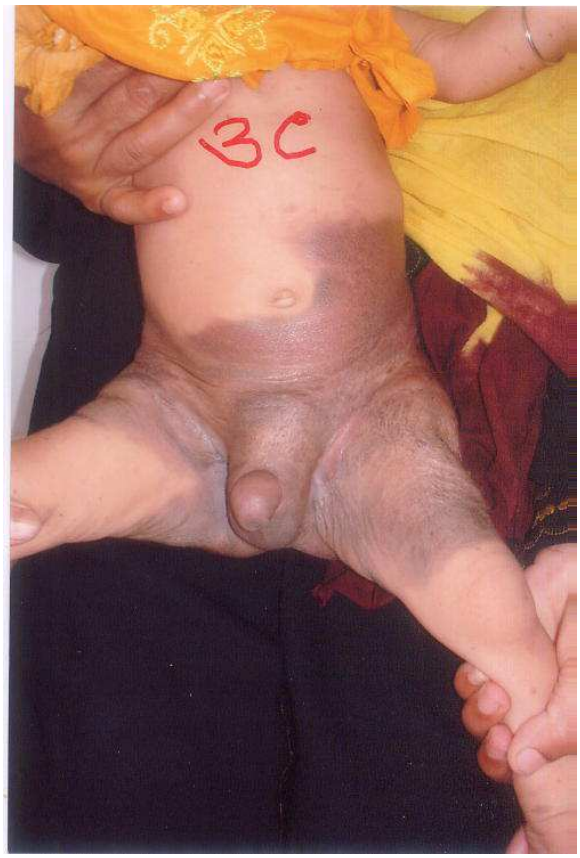


Figure 3A Posterior view. One month after our treatment. Erosions healed, thickness reduced, firmness almost gone with residual de-pigmented and pink scars and slightly improved appearance. **Figure 3B**: Right lateral view. **Figure 3C**: Anterior view.

stimulating hormone levels were within normal limits. X-ray chest and lumbosacral areas were normal with soft tissue swelling over patch. USG whole abdomen was normal. Serological test for syphilis and hepatitis B were negative. Skin biopsy from right thigh revealed scattered dyskeratotic keratinocytes in the lower epidermis, vacuolar degeneration of basal layer, pigment incontinence and melanophages in superficial dermis, edema and sparse peri-vascular mononuclear infiltrate with occasional eosinophils in upper dermis and unremarkable subcutis **(Figure 2).**

His mother was healthy all through the pregnancy. She had neither any infections (e.g. herpes simplex, rubella, cytomegalovirus,

syphilis etc.) capable of producing congenital anomaly nor any disease (e.g. lupus erythematosus) to be transmitted congenitally. She had negative serological test for above mentioned infections with negative ANA and ds-DNA. However, she had an attack of urinary tract infection during last trimester. She took cefuroxime, 500 mg twice daily for 14 days, four weeks before the birth of baby and apparently she did not develop any side effects/toxicities from it.

We treated the baby with injection triamcinolone acetonide, 1 mg/kg, intra-muscularly stat and clobetasol propionate cream (0.05%, w/w), twice daily for four weeks. At the end of one month, we observed no blisters, healed erosions, reduced thickness and firmness, and color of patch resolving from dusky red to brown (**Figure 3A-C**).

Discussion:

Clinically it mimicked closely with birth trauma, giant congenital melanocytic nevus, congenital developmental anomaly, incontinentia pigmenti and sclerema neonatorum.

It was a normal vaginal delivery with no history of perinatal trauma. Moreover, absence of hemorrhage and thrombosis in dermis and sub-cutis excludes our suspicion of birth trauma.

We evaluated the baby for any abnormality involving the different organs particularly heart, lungs, liver, spleen, kidneys and bones. However, no structural or functional abnormalities were seen apart from his skin lesion. His mother had no such disease suggestive of causing any developmental anomaly. Moreover, interface dermatitis in baby's histology arguably helped us to exclude the congenital developmental anomaly.

Big patch involving trunk, buttocks and thighs and many small lesions elsewhere in the body closely mimicked giant congenital melanocytic nevus. However absence of nevocellular melanocytes in histopathology excluded our suspicion of the disease.[5]

Involvement of trunk, buttocks and thighs together with rapid evolution after birth is typical of incontinentia pigmenti[6] and sclerema neonatorum.[7] However, interface dermatitis in histology is inconsistent with both the diseases. At the same time absence of typical butterfly rash and maternal negative ANA and anti-ds-DNA antibodies helped us to exclude congenital lupus erythematosus.

He had bilateral symmetrical lesions but none of them were target lesions. Moreover, involvement of trunk, buttocks and thighs is not typical of erythema multiforme. On the other hand absence of lesions over palms and soles together with absence of peeling of epidermis from lesions together with healthy mucosae and uninvolved internal organs helped us to exclude toxic epidermal necrolysis though histology was supportive of both the diseases.

Absence of typical purple plain topped papules in clinical setting and absence of band like infiltration in histology helped us to exclude lichenoid drug reaction.

Our patient had a sharply defined variegate edematous lesion which evolved rapidly after birth. It also had feature of interface dermatitis with occasional eosinophils in superficial peri-vascular infiltrate. Both the above mentioned clinical and histological attributes had perfectly portrayed the features of 'drug eruption'. His mother had Cefuroxime Axetil four weeks before his delivery. It is a second generation cephalosporin and commonly used antibiotic in

Bangladesh. . It is a pregnancy category-B drug, capable of crossing the placental barrier and has the potential to cause hypersensitivity reaction.[8] Perhaps it had crossed the placental barrier, sensitized the baby and eventually caused development of lesions that we saw at delivery. Since the reaction had occurred while the baby was in the mother's womb we could label it as 'congenital drug eruption'.

Reproducibility[9] is one of the characteristic and diagnostic features of FDE. Our patient suffered from severe diarrhea and inadvertently he was given syrup cefuroxime. Within twenty four hours of taking the syrup he became restless, his diarrhea worsened and lesions became swollen and succulent confirming cefuroxime-induced 'congenital fixed drug eruption'.

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