Atypical skin manifestations of dengue fever

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ABSTRACT

Dengue fever is a severe flu-like illness that affects infants, children, adolescents, and adults and can have a wide variety of manifestations. Dengue fever can have varied skin manifestations including petechiae, purpura, and bleeding. We report the case of a child who presented with atypical skin manifestations to us and which was confused to be staphylococcal scalded skin syndrome initially. The manifestations later turned out to be the skin manifestations of dengue fever, and the child got better with fluid resuscitation, skin care, and supportive management. This case report draws light toward the various other dermatological manifestations of dengue fever.

Key words: *Atypical skin manifestations, Blisters, Dengue fever*

Although it has been said that the eyes are the window to the soul, it may also be said that skin is the window to within; skin can present important clues to systemic diseases. Dengue fever is a severe flu-like illness that affects infants, children, adolescents, and adults. The clinical features vary according to the age of the patient. Infants and young children usually have a non-specific febrile illness with a rash which is difficult to distinguish from other viral illnesses [1]. During the febrile period, the patient may experience severe headache, retro-orbital pain, myalgia, arthralgia, nausea, or vomiting. More than half of the infected patients have a rash during this period that is macular or maculopapular and becomes erythematous [2]. Minor hemorrhagic manifestations such as petechiae, epistaxis, and gingival bleeding occur in some patients.

CASE REPORT

An 18-month-old male child presented to our tertiary care center with the complaints of fever for 6 days, loose stools for 3 days, multiple skin lesions all over the body for 2 days, and skin eruptions for 1 day. The patient was apparently healthy 6 days ago when he started having sudden onset, high-grade fever intermittent, progressive, and relieved on medications, associated with loose stools 18–20 times a day in frequency, watery, brownish in color, associated with various fluid-filled skin lesions, and eruptions for 2 days. Parents also complained of patient having generalized joint pain. The patient had received treatment from a local practitioner and then referred to our tertiary care center. The patient was not having associated complaints of vomiting, ear discharge, altered sensorium, traumatic injury, bleeding from any site, drug ingestion, or blood transfusion. The patient had a history of admission once at the age of 2 months for 4 days and was diagnosed as pneumonia. The mother also had fever and arthralgia for 4 days. The patient was fully immunized up to age. There was no other significant family history. No significant birth history and sibling history.

On examination, the patient was conscious and irritable at the time of admission and was having fever of 100°F, pulse rate of 138/min, low volume pulse, RR=32/min, blood pressure=98/64 mmHg, RBS=55 mg/dl, and spo^2=98% at room air. The patient was having mild pallor, and facial edema, and various skin eruptions all over the body, petechiae over both lower limbs, and peeling of skin over face and lower limbs (Fig. 1 and 2). On systemic examination, there were no significant findings. The patient was admitted and started with oxygen, intravenous fluids, and inotropes as patient was in shock. Broad-spectrum antibiotic coverage was given. Investigations showed hemoglobin (Hb)=10 g/dl, total leukocyte count (TLC)=28,300/mm^3, differential leukocyte counts (DLC)=P35/L63/E01/M01, platelet count=83000/mm^3, a normal coagulation profile, positive C-reactive protein, serum albumin=3.6 mg/dl, and total protein=7.3 mg/dl. The urine microscopy and RFTs were within normal limits.

On the 2nd day of admission, the skin lesions transformed into fluid-filled lesion all over the body (Fig. 3 to 5). There were no lesions involving oral cavity. Dermatology reference was done. They initially suspected staphylococcal scalded skin syndrome (SSSS) as there was no mucocutaneous involvement and advised to continue systemic antibiotics and one topical antibiotic. On repeat complete blood count, Hb fell down to 8.7 g/dl, TLC also decreased to 12,000/mm^3, and further decrease in platelet counts to 69,000/mm^3. As the skin lesions were not improving at all in spite of ongoing treatment, again expert dermatology reference was done and this

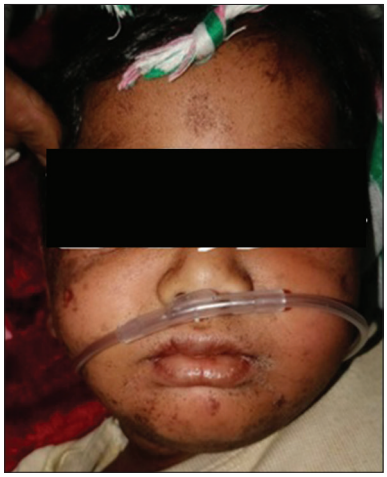

Figure 1: Initial stage of skin lesions in the child

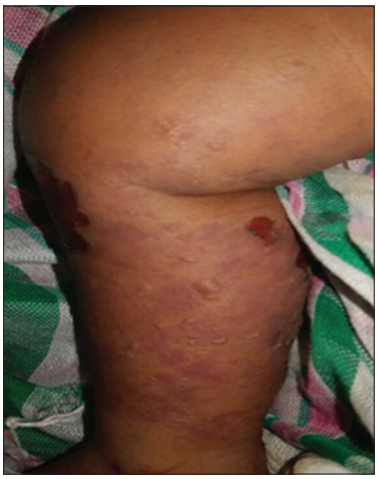

Figure 2: The initial stage of skin lesions in the child

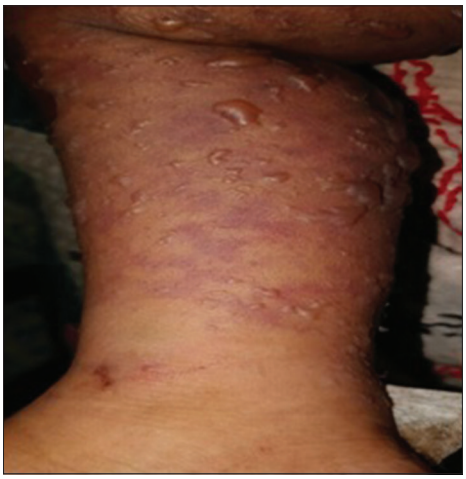

Figure 3: The progression of the skin lesions and the formation of fluid-filled blisters

time they observed multiple bilateral symmetrical vesicles and bullae on erythematous base with erosions over trunk, back, face, upper and lower limbs, and exfoliations of skin. They suspected viral exanthema with Chikungunya as the most probable differential. Investigation for dengue and Chikungunya was sent. Meanwhile, the patient gradually recovered from shock and oxygen support and

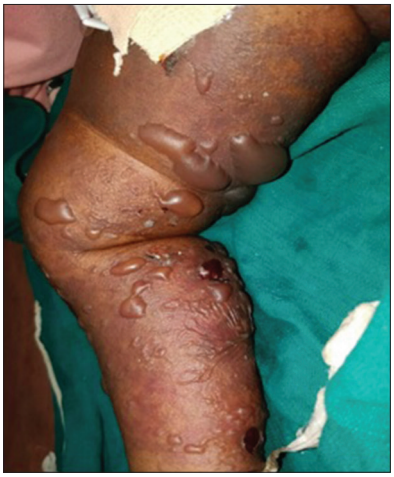

Figure 4: The worsening of the skin lesions

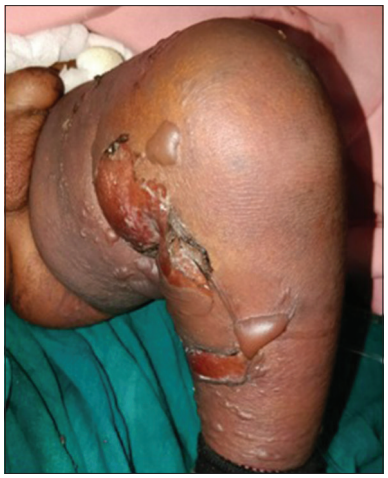

Figure 5: The breaking of the blisters

inotropes were tapered and withdrawn on the 4th day of admission.

Blood was sent for culture and sensitivity and the fluid from the blisters was also sent for culture and sensitivity which were later reported as negative. Furthermore, a skin sample which was observed under the microscope showed no features of SSSS. The ELISA test done was IgM positive for dengue and Chikungunya was negative. The patient's platelet count fell down to a nadir of 33,000/mm^3 and hemoglobin of 6.5 g/dl on the 5th day of admission. Intravenous fluids were continued and the patient was started on Ryle's tube feeding which was gradually increased. The patient was gradually shifted to oral feeds, the skin lesions improved once the vesicles crusted and completely recovered on the 11th day of admission, the platelet count and hemoglobin improved to 2.5 lakh and 8.5 g/dl, respectively, on discharge. This was the 1st time that we encountered such a case at our tertiary care center.

DISCUSSION

The characteristic exanthem of dengue fever is estimated to occur in 50–80% of the patients [3]. The initial rash is a transient flushing erythema of the face that typically occurs shortly before or within the 1st 24–48 h of onset of symptom and is thought

to be because of capillary dilatation. The second rash usually occurs 3–6 days after the onset of illness and is asymptomatic maculopapular or morbilliform eruption and is thought to be due to immune response to the virus. The generalized rash characteristically starts from the dorsum of the hands and feet and spreads to arms, legs, and torso. The morbilliform, maculopapular rash usually spares palms and soles. Less frequently rashes of two other types may occur, an eruption of fine macule overpressure area or purpuric eruptions on hands, forearm, feet and leg, and the mouth [4].

Mucosal involvement is estimated to occur in 15–30% of the patients [5]. The differential diagnosis of the skin manifestations of dengue is broad, but it is imperative to rule out Chikungunya fever as its clinical presentation is almost indistinguishable from dengue fever. The cutaneous manifestations are more extensive and predictable in SSSS and hence can be ruled out easily [6] though, in this case, we were confused initially. Hence, it is important that we do not neglect the skin manifestations as they might be a marker of a systemic illness.

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