

Case Report

Varied cutaneous manifestation of chikungunya fever: a case series

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ABSTRACT

Chikungunya fever (CF) has recently re-emerged as a major public health problem of global scale. It is characterized by an acute onset of high fever associated with severe disabling arthritis, vomiting, sore throat and often with prominent cutaneous manifestations. The disease is usually self-limiting, but the joint symptoms and some cutaneous features may persist after defervescence. Various cutaneous changes have been described in association with CF. We report a case series of ten patients presenting with pigmentation (over face, palm, sole, knuckles, fingers) and vesiculobullous lesions which were diagnosed as chikungunya rash based on of clinical and serological investigation.

Keywords: Chikungunya viral fever, Hyperpigmentation, Serology

INTRODUCTION

Chikungunya fever (CF) is an acute viral infection caused by Arbovirus, transmitted by bite of infected aedes mosquitoes. The first reported outbreak of CF in India was from Calcutta in 1963.¹ After an interval of 32 years, India has witnessed a massive epidemic in 2005, which is still ongoing in different parts of the country.² The disease is usually self-limiting, but the joint symptoms and some cutaneous features may persist after defervescence. Various cutaneous changes have been described in association with CF. Besides a morbilliform erythema, hyperpigmentation, xerosis, excoriated papules, aphthous-like ulcers, vesiculobullous and lichenoid eruptions, and exacerbation of pre-existing or quiescent dermatoses have been observed frequently. Here, we report a case series, including ten patients of chikungunya fever, with varied type of cutaneous manifestation, presenting during a period of six month.

CASE REPORT

The case series of ten patients comprised 6 females and 4 female respectively, aged between 14 days to 45 years (including one neonate and three infants). Cases presented to us with chief complaint of asymptomatic brown colored skin lesions over body. All patients had history of fever, joint pain, headache and backache, before appearance of skin lesion with duration varying from seven days to fifteen days.

On examination, out of ten cases, pigmentation over nose was noted in four, pigmentation over palm was seen in two and pigmentation over sole, eyelid and dorsum of finger each was noted in one case. Vesicular rash was noted in one infant (case10).

In adults, different patterns of hypermelanosis observed were, hypermelanosis of centofacial area, macular

confetti like and flagellate pigmentation over dorsum of fingers and palm.



Figure 1: Macular hyperpigmentation over nose (Case 1).



Figure 2: Hyperpigmentation over palm (Case 2).



Figure 3: Reticulate hyperpigmentation over toes (Case 2).



Figure 4: Reticulate hyperpigmentation over knuckle (Case 4).



Figure 5: Vesicular rash over lower limb with erosions (Case 10).

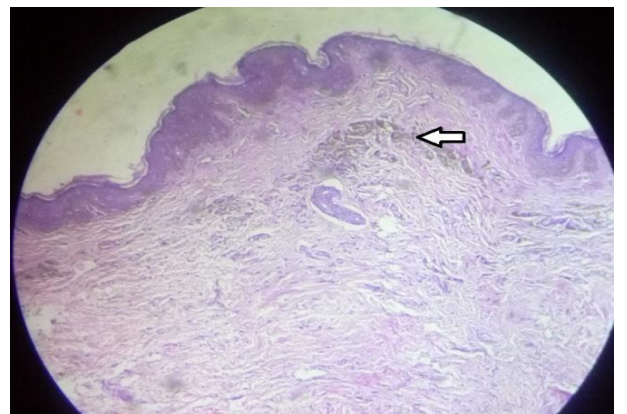


Figure 6: Histopathology showing dermal pigmentation.

Among the infantile cases, flagellate hyperpigmentation over abdomen, face and extremities was the common presentation. Along with one of the infant (Case 10) presented with multiple flaccid vesicles, bullae and erosion, along with pigmentation. History of chikungunya fever (clinical and serology) was positive in mother in all three infantile cases.

Table 1: Description of cases.

Sr. no.	Age	Sex	Site affected	Type of rash	Chikungunya IgM antibody	Skin biopsy
1	37 year	F	Nose, palm, fingers, upper eyelid, dorsum of hand	Hyperpigmentation	Positive	post-inflammatory hyperpigmentation
2	28 year	M	Fingers and palm, toes, dorsum of hand	Hyperpigmentation	Positive	post-inflammatory hyperpigmentation
3	45 year	F	Nose	Hyperpigmentation	Positive	post-inflammatory hyperpigmentation
4	24 year	F	Dorsum of finger	Hyperpigmentation	Positive	post-inflammatory hyperpigmentation
5	14 year	M	Nose	Hyperpigmentation	Positive	post-inflammatory hyperpigmentation
6	40 year	F	Nose, cheeks	Hyperpigmentation	Positive	post-inflammatory hyperpigmentation
7	3 month	M	Abdomen, legs	Hyperpigmentation	Positive	post-inflammatory hyperpigmentation
8	2 month	M	Face, abdomen, back, extremities	Hyperpigmentation	Positive	post-inflammatory hyperpigmentation
9	10 days	F	Face, abdomen, back	Hyperpigmentation	Positive	post-inflammatory hyperpigmentation
10	4 month	F	Abdomen trunk, back, lower leg	Vesicular	Positive	post-inflammatory hyperpigmentation

All routine laboratory investigations were within normal limits with positive chikungunya IgM antibody, negative dengue IgM antibody and malaria antigen in all cases.

Histopathology of pigmented macule showed increased basal pigmentation with melanophages in upper dermis.

As patient with facial pigmentation sought medical advice for cosmetic purpose, topical depigmentary agents in the form of kojic acid, hydroquinone along with sunscreen was advised.

DISCUSSION

Chikungunya fever is a re-emerging, self-limiting, arboviral infection. The reason for re-emergence of CF in Indian subcontinent is unclear, globalization of trades, increased international travel, abundance of potential vectors like aedes mosquitoes, poor vector control activities, absence of herd immunity, viral mutations and emergence of another vector, *A. albopictus*, in addition to *A. aegyptii*, as an efficient transmitter of chikungunya virus may be the contributing factors.³ The virus has been isolated at the National institute of virology, Pune, India, and was found to be of the African genotype.⁴

CF may affect people of all age groups with equal gender distribution after an incubation period of 3- 12 days. It is characterized by sudden onset of high fever with swollen, tender joint involvement (mostly small joints) and can affect large joints, headache, vomiting, sore throat, conjunctivitis and cutaneous lesions.

In our case series, youngest case reported was 14 days neonate, contributed to vertical transmission based on positive IgM in mother and neonate.

In literature, a case series of eight neonatal chikungunya cases of vertical transmission, presented at 5th day of life has been reported by Mangalgi et al.⁵

Most of the adult patients had complaints of fever, joint pain, headache and backache 7 days to 15 days before appearance of pigmentation.

Different types of skin lesions have been reported in chikungunya fever. Usually skin lesions appear 4-5days after recovering from illness, but may appear simultaneously with fever or after defervescence.

The most common cutaneous lesion described in CK is erythematous maculopapular rash affecting the trunk, limb and face. Although we did not encounter such presentation.

Different types of pigmentation have been reported in CK. It was most common presentation reported in study by Inamdar et al and second most common presentation in study by Riaz et al.^{6,7}

Similarly in our case series chief complaint was pigmentation over nose, cheek, trunk, extremities, for which patient was evaluated and turned out to be CK based on serology.

The hyperpigmentation may be of different types including centrofacial and freckle-like, diffuse pigmentation of face, pinna, and extremities, flagellate pigmentation, and pigmentation of existing acne lesions. Predominant affection of the exposed skin raises the possibility of the role of ultraviolet exposure in the distribution pattern of the pigmentary anomaly. Similar findings were noted in our case series.

Histopathology of the pigmented lesion may show increased basal pigmentation, pigmentary incontinence and melanophages. The pathogenesis for pigmentation is not clear, and it could be post inflammatory pigmentation or an increased intra epidermal melanin dispersions/retention triggered by the virus. Similar histopathological finding was found in our cases.

Treatment of cutaneous manifestation required only symptomatic measures. Pigmentation of the face was treated with sunscreens and low potent corticosteroids creams for duration of 2 weeks only. Kojic acid cream was also added in a few patients with persistent pigmentation. Desquamation was treated with topical emollients.

CONCLUSION

Chikungunya fever can present with variety of cutaneous manifestations. The presence of pigmentation over nose, cheeks, palm, sole, eyelid, knuckles after fever and joint pain helps to make a retrospective diagnosis of chikungunya fever. Hence this may be considered as a marker of chikungunya fever in recent past. Pigmentary rash over unusual site like palm and soles along with vesicular rash in neonate make it worth reporting.

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