

Cutaneous Manifestations in Chikungunya Disease

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The Chikungunya virus, an *Alphavirus* in the *Togaviridae* that originated in Tanzania, has been spread globally via mosquitoes. Thailand is one of the tropical endemic areas, especially the southern region. The first reported case of Thailand was in 1958.¹ Chikungunya, from the Bantu language, means the bending posture which is commonly caused by the *Aedes* species.² The clinical presentation is acute onset high-grade fever with severe joint pain and skin lesions, which differ individually.

Cutaneous lesions associated with Chikungunya disease vary. From literature reviews and the author's experience, skin lesions can be divided into 3 groups: common and non-specific, highly suggestive, and rare forms.^{2,3}

A generalized erythematous maculopapular rash or morbilliform rash (Figure 1A) is the most common finding among the patients diagnosed with Chikungunya fever, 50.0–60.0% on average. The rash can present during the acute phase of infection, and up to 7 days after the fever has subsided. The latter can also be called a convalescent rash (Figure 1B).³ The morbilliform rash is typically distributed on the trunk, face, and extremities with an island of normal skin accompanied by severe pruritus, which can resolve spontaneously without hypo-hyper pigmented lesions. Multiple painful aphthous-like lesions in the oral cavity have been reported in many studies, approximately 20.0% of cases, showing the erosions, ulcers, and cheilitis.³ They also appear in the intertriginous areas, including the axillae and scrotum, and are discrete, painful ulcerative lesions. Acute urticarial (Figure 1C) can be found in Chikungunya fever and is caused by type I hypersensitive reaction to a viral infection. Although the maculopapular rash and aphthous-like lesions are commonly found in Chikungunya disease, they are non-specific and must be differentiated from other viral exanthem.

Pigmentation at the nose, a symbolic site, is called the Chik sign (Figure 1D).^{2,3} This pigmentation is highly suggestive of Chikungunya disease. However, numerous pigmentary changes are commonly reported, including macular lesions, confetti-like macules, melasma-like over the face, lichen planus pigmentosus-like, and periorbital hypermelanosis.³ An increased melanin dispersion/retention triggered by the virus has been postulated as a cause of the pigmentation. Acrofacial erythema can be found in this disease and could be a sensitive diagnosis. The erythema

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of the ear (Figure 1E), resembling Milian’s ear sign, is an inflammation of the cartilage of the ear.³ Localized erythema of the nose (Figure 1F) and hand (Figure 1G) should be considered in Chikungunya viral infection.

The rare cutaneous forms are hemorrhagic manifestations, vesiculobullous rash, and panniculitis.^{2,3} Hemorrhagic lesions are infrequent in Chikungunya fever. There is a variation of hemorrhage from subungual hemorrhage, and multiple ecchymotic patches, to purpura fulminans with few severities. These may be caused by viral-induced thrombocytopenia along with the virally

damaged vascular endothelium, and the effect of immunological factors. Vesiculobullous and toxic epidermal necrolysis-like lesions have been reported from Chikungunya disease. Recently, panniculitis, the inflammation of subcutaneous fat, is the erythematous, painful nodule on the lower extremities (Figure 1H).²

The variation of cutaneous lesions in the Chikungunya disease makes it challenging to diagnose. Further studies, especially comparisons with other viral infections, should be conducted in order to develop more specific and sensitive skin criteria.



Figure 1 (A) Maculopapular rash, (B) Convalescence rash, (C) Acute urticaria, (D) Chik sign, (E) Millian’s ear sign, (F) Erythema of the nose, (G) Erythema of the hand, (H) Panniculitis.

(Figure 1 (H) Reprinted from Sangmala S, Eksomtramage T, Aiempanakit K, Chiratikarnwong K, Auepemkiate S. Lobular panniculitis associated with chikungunya fever: a case report. *IDCases* 2018;14:e00462., with permission from Elsevier.)

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