

Case Series:

"Dermoscopic Perspective of Chik Sign: A Case Series of Post-Dengue Hyperpigmentation"

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Abstract

'Chik sign' is a pattern of facial hyperpigmentation often found in chikungunya and dengue fever. It is an underreported cutaneous manifestation. Here we have highlighted documents of ten patients who were NS1 positive and developed hyperpigmented facial lesions after recovering from dengue fever. This case series has emphasized on clinical presentation, dermoscopic findings and therapeutic outcomes of Chik sign. Dermoscopy revealed a pseudo-reticular pigment network, perifollicular pigment accentuation and brownish globules aiding differentiation from melasma and other pigmentary disorders. All patients responded favorably within 4 to 6 weeks following application of hydroquinone cream and strict sun protection. Awareness and early intervention can ensure favorable outcomes in these cases.

Keywords: Dengue fever, post-dengue hyperpigmentation, dermoscopy, post-inflammatory hyperpigmentation.

Introduction

The "Chik sign," also known as "brownie nose sign" first described in a post-chikungunya fever patient. It is a distinct form of post-inflammatory hyperpigmentation (PIH) characterized by macular pigmentation. Recently, similar findings have been observed in many patients who recovered from dengue fever. Dengue fever is an arboviral disease and endemic in many tropical and subtropical regions. It has documented dermatological (cutaneous) manifestations like maculopapular rashes, petechies during the febrile phase. Post dengue hyperpigmentation, including the "Chik sign" is an underreported phenomenon.^{1,2} This pigmentation commonly involves the face, particularly the periorbital, perioral, nasal, malar and forehead regions, presenting as brown-black macules or patches.^{1,2,3} Dermoscopy serve as a vital diagnostic tool to identify distinguishing pattern in pigmentation, allowing differentiation from melasma, post-inflammatory hyperpigmentation and others melanosis.^{3,6}

This case series aims to document and analyze the clinical and dermoscopic findings of post dengue hyperpigmentation emphasizing the "Chik sign" and its management outcomes.



fig 1. Chik sign in different patients of post dengue fever

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Case Presentation

Case 1

A 23-year-old lady presented with brown-black macular pigmentation on the periorbital, perioral and nasal areas 10 days after recovering from dengue fever. She denied itching, burning or prior pigmentary disorders.

Case 2

A 39-year-old woman with a 10 years history of melasma noticed few diffuse brown pigmentation over the ala of the nose, malar area, and forehead distinct from melasma, appeared two week after dengue fever. She experienced burning and erythema upon sun exposure.

Case 3

A 58-year-old man, presented with brownish macular hyperpigmentation on the tip & ala of his nose and cheeks seven days after subsiding of NS1 positive dengue fever. He has no other past illness.

Case 4

A 27-year-old man, reported brown hyperpigmented patches on cheeks and nose five to seven days after recovery from fever. He denied prior pigmentary disorders or chronic illness.

Case 5

A 38-year-old man, exhibited brown-black hyperpigmented patches around the perioral areas, nose, chin & cheeks one week post-dengue fever. The pigmentation increased after sun exposure. He denied prior pigmentary disorders.

Case 6

An 18-year-old man experienced mild itchy brownish hyperpigmented patches on the nose, cheeks, and chin 12 days after recovering from NS-1 positive dengue fever.

Case 7

A 22-year-old woman developed erythematous brown patches on her cheeks, nasal and perioral areas for few days after recovery from dengue fever. She denied any pigmentary disorders or systemic illness.

Case 8

A 30-year-old lady presented with mottled pigmentation on face 2 weeks after recovering from dengue fever. She had no other symptoms.

Case 9

A 28-year-old man developed brownish-black macules on the nasal bridge, tip of the nose, cheeks, and perioral area 8-10 days after recovering from dengue fever. He had no associated symptoms, history of melasma, or use of cosmetic products.

Case 10

A 24-year-old man presented with mild itchy brownish hyperpigmented patches over his nose, perinasal area, perioral area and chin for few days. This hyperpigmentation appears 1 week after his recovering

from dengue fever. He complained that pigmentation aggravated on sun exposure. He has no other pigmentary disorders.

Dermoscopic Finding

We did dermoscopy in all these cases and found similar findings:

1. Pseudo-reticular pigment networks.
 2. Patulous follicular opening.
 3. Perifollicular pigment accentuation.
 4. Brownish globules on a diffuse brown background.
- [Figure-2] These findings were consistent with post-inflammatory hyperpigmentation.^{4,6}

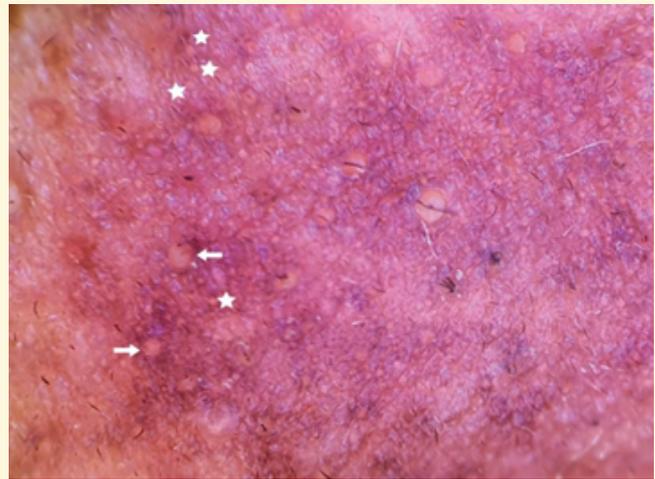


fig 2. **Dermoscopy finding:** Perifollicular pigment accentuation (arrows), patulous follicular opening with brownish background (stars), pseudo-reticular pigment networks

Discussion

The "Chik sign" or post-dengue hyperpigmentation is an underreported sequel of dengue fever. It represents a form of post-inflammatory hyperpigmentation (PIH) associated with viral infection, particularly Chikungunya and now dengue fever.^{3,4} The pigmentation results from melanocytic hyperactivity triggered by inflammatory cytokines, vascular damage and subsequent melanogenesis. UV exposures may exacerbate the condition.⁵

Dermoscopy, a noninvasive valuable tool helps to differentiate post-dengue hyperpigmentation, commonly referred to as "Chik Sign", from other pigmentary disorders such as melasma, lichen planus pigmentosus (LPP), and sebomelanosis. Post-dengue hyperpigmentation is characterized by a pseudo-reticular pigment network, patulous follicular openings, perifollicular pigment accentuation, and brownish globules on a diffuse brown background.⁶ These features are distinct from melasma, which typically shows a homogeneous light brown to gray-brown background with an accentuated pigment network but lacks perifollicular

accentuation and patulous follicular openings.³ In lichen planus pigmentosus, the dermoscopic findings include gray-blue dots or globules, a coarse pigment network, and perifollicular hypopigmentation, which differ significantly from the diffuse and uniform pigment distribution of post-dengue hyperpigmentation.⁷ Seborrheic keratosis, on the other hand, presents with diffuse brownish pigmentation often accompanied by yellowish scales or greasy texture, with sparing of hair follicles, which is not observed in post-dengue cases.⁸ These dermoscopic differences highlight the unique features of "Chik Sign" in post-dengue hyperpigmentation, underscoring its distinction from other pigmentary conditions, thereby aiding in accurate diagnosis and management.

Treatment & Outcome

All patients were treated with hydroquinone cream (a tyrosinase inhibitor) and advised strict sun protection. Results were satisfactory with significant improvement of pigmentation after 4-6 weeks of treatment.[Figure-3].



fig 3. Showing post treatment improvement of Chik sign

Conclusion

The "Chik sign" traditionally associated with chikungunya, is an emerging cutaneous sequel of post-dengue fever. Dermoscopy aids, its differentiation from other pigmentary disorders, enabling effective management with topical hydroquinone and photoprotection. Early intervention is crucial to prevent chronic pigmentation.

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