Chikungunya (CHK) is an acute onset, mosquito-borne viral disease characterized by high fever, predominant musculo-skeletal symptoms, and skin rash. It is a re-emerging viral infection transmitted to humans by infected mosquitoes. The etiological agent is a RNA virus that belongs to the alphavirus genus of the family Togaviridae. The disease is transmitted to humans by the bite of infected Aedes mosquito; two species namely Aedes aegypti and Aedes albopictus being the responsible vectors in Asia. Both of these can also transmit other mosquito-borne viruses, including dengue. These mosquitoes generally bite throughout daylight hours with peaks of activity in the early morning and late afternoon.

The first outbreak of CHK fever was documented from Tanzania in 1952. Since then, CHK has been identified in over 60 countries in Asia, Africa, Europe, and America. However, the disease has been most prevalent in Africa, Asia, and the Indian subcontinent. India recorded the first outbreak of CHK in Calcutta in 1963 followed by epidemics in Tamil Nadu, Andhra Pradesh, and Maharashtra till 1973. After a quiescent period of almost 3 decades, India saw re-emergence of CHK virus infection in 2006. Since then, regular cyclical and seasonal outbreaks have been recorded in as many as 17 states of North and South India.

Approximately 4–7 days after the mosquito bite, patients display acute symptoms of painful polyarthralgia, high fever, myalgia, and headache. Mucocutaneous involvement tends to be a prominent and significant finding in the acute phase of infection. The febrile episodes and maculopapular rash may be recurrent coinciding with recurrent bouts of viremia. Incapacitating and debilitating arthralgia tend to persists for months in chronic phase. Systemic involvements in the form of neurological syndrome, renal, hepatic, respiratory, cardiac, and hematological manifestations have been described.

A host of mucocutaneous manifestations, occurring in 30–50% of all cases of CHK infection, have been described in different studies from India. Few of these are very characteristic and specific, and thus help in distinguishing the infection from its close differential of dengue fever and other viral febrile illnesses. Generalized morbilliform maculopapular rash with normal islands of intervening skin and characteristically sparing the face has been the most commonly (30–55%) reported manifestation. The rash develops within 3–4 days of the onset of fever and tends to subside in about a week without any sequel. Skin hyperpigmentation is the next most commonly encountered finding. It occurs in the form of centrofacial pigmentation predominantly involving the nose (Chick sign). It is the most commonly described pigmentation developing during the acute phase of the disease and helps in the retrospective diagnosis of CHK infection. Vascular response in the form of facial flushing, erythema, and edema of ear lobules resembling Milian’s ear sign, erythema of striae in females have been described. Vertical transmission of CHK virus from mother to child has been documented. A neonate born to a mother who had CHK infection in the last trimester may present with classic centrofacial pigmentation. Infants younger than 12 months tend to have different spectrum of skin lesions that include acrocyanosis and symmetrical superficial vesicobullous lesions. In recent times, purpuric and ecchymotic lesions in adults over the trunk and flexors of limbs often surmounted by subepidermal bullae and lesions resembling toxic epidermal necrolysis (TEN) have been reported. Nonhealing ulcers and genital ulcers on the srotum, vulva, and groins may occur. The ulcers are shallow resembling aphthous ulcers; may involve other flexures such as axillae, tongue, and oral mucosa.

Coexistent nail involvement in the form of black lunulae, diffuse and longitudinal melanonychia, transverse pigmented bands, leukonychia, onychomadesis, and subungual hemorrhage have been observed in few case series. Isolated nail pigmentation sans skin lesions has been observed in two cases of serologically proven cases of CHK.
CHK by the author. Nail examination is often overlooked in busy outpatient department, which may probably contribute to the underreporting of nail lesions.

Diagnosis of CHK infection is mainly clinical as there are no pathognomonic hematological findings. However, a definitive diagnosis can be established by the detection of IgM antibodies in the sera using immunofluorescent assay (IFA) or ELISA in the first 2 weeks of infection. The diagnosis can be established early in the acute phase of infection by reverse transcription polymerase chain reaction (RT PCR).

CHK infection has to be differentiated from dengue and rickettsial fever that are also known to cause acute-onset febrile illnesses associated with severe arthritis and skin rash. Distinguishing features of chikungunya include potentially debilitating bilateral polyarthritis and in some cases arthritis. The erythematous discrete macular-papular rash of rickettsial infection is initially localized to lower leg and ankle, and thereafter spreads centripetally to involve whole body including palms and soles. A necrotic eschar at the inoculating site is characteristic. However, the final diagnosis is established on serology.

There is no vaccine to prevent and treatment to cure the disease. Because it is a self limiting disease, the treatment focuses on relieving the symptoms with acetaminophen and nonsteroidal anti-inflammatory drugs. Skin rash is generally managed with saline compresses and emollients. Persistent non-healing ulcers on the genitalia and intertriginous areas and skin erosions resulting from ruptured bullous lesions can be managed by topical or systemic antibiotics. Most of the skin lesions resolve within 2 weeks with reversible post-inflammatory hypopigmentation.

Prevention of CHK outbreaks rests on minimizing vector population and the vector–patient contact. The former is achieved by enhancing community education and participation in preventing stagnation of water that are breeding grounds for mosquitoes. To minimize vector patient contact, regular use of insecticide sprays, full-sleeved bright-colored clothing, and use of wiremesh/net on the doors and windows may be helpful.

With regular outbreaks of CHK infection, it is mandatory for dermatologists to be familiar with the myriad of cutaneous presentation to suspect CHK infection early before the laboratory investigations are available. As the disease itself, including majority of the lesions, is self limiting, correct diagnosis will obviate the need of invasive diagnostic tests and aggressive therapeutic intervention.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have
given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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