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A Case of Chikungunya with Multi-Organ Involvement - Could it be 'Expanded Chikungunya Syndrome?'

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ABSTRACT

Chikungunya fever is an arboviral disease that commonly presents with sudden fever, rash and arthralgia or arthritis. It is generally self-limiting, while the fever is gone chronic musculoskeletal symptoms may persist for a long time. However, multi-organ involvement remains uncommon and poorly described. We report the case of a 30-year-old man who developed high-grade fever, arthritis, skin rashes and marked weakness. Laboratory investigations revealed leukopenia, thrombocytopenia, markedly elevated hepatic transaminases, and renal impairment with proteinuria and hematuria. Serological tests for dengue were negative whereas chikungunya IgM was positive. This case demonstrates how chikungunya fever though usually known for fever and joint pain, may sometimes significantly involve organs like the liver, kidneys and skin. As with time disease evolves we may be witnessing multi-system chikungunya that can be potentially labeled as expanded chikungunya syndrome.

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Background

A major outbreak of Chikungunya fever has occurred in 2025 in the cities of Dhaka and Chittagong, Bangladesh. It is a viral fever transmitted to humans by the bite of infected mosquitoes. It is in the United Republic of Tanzania in 1953 when Chikungunya virus (CHIKV) first came into spotlight and subsequently in other countries of Africa and Asia [1]. The mosquitoes involved in transmission are Aedes aegypti and Aedes albopictus. Since its identification CHIKV has caused over 70 epidemics worldwide between 1959 and 2017. India, Bangladesh's neighboring country, has experienced multiple epidemics over few decades [2]. Bangladesh also experienced a massive Chikungunya outbreak in 2017, following its first emergence in 2008 and two subsequent small-scale outbreaks in 2011- 2012 [3].

Clinical features of Chikungunya range from mild infection to severe, debilitating illness. The illness usually begins with the abrupt onset of high-grade fever and severe joint pain, sometimes associated with macular or maculopapular rashes all over the body. Other common symptoms include headache, fatigue, muscle pain, joint swelling, nausea and vomiting [4]. Severe forms of infection are usually rare. However, with the recent rise in CHIKV outbreaks worldwide, atypical manifestations are drawing the special attention of clinicians and epidemiologists because of their significant and sometimes fatal complications. Different types of atypical features have been reported. Death can occur, even though it is very rare. Chikungunya-related deaths have been reported in young infants, the elderly, and people with pre-existing conditions such as cardiovascular disease, diabetes, kidney disease, and chronic liver disease [5]. Chikungunya has been reported to be associated with several complications like uveitis, acute disseminated encephalomyelitis (ADEM) and Guillain Barré Syndrome (GBS). Several cases have been reported skin hyperpigmentation mostly in individuals with darker skin [2]. Information on atypical manifestations of Chikungunya fever is scarce. As a major outbreak has occurred this year in Bangladesh, careful assessment of atypical clinical features is crucial to understand the characteristics of infection and monitor its impact on infected people.

Case Presentation

Our case is a 30-year-old previously healthy male from Hathazari, Chattogram, presented with a 4-day history of high-grade fever (maximum 105°F), peaking two to three times daily without chills or rigors. The fever subsided spontaneously after 4 days, but he developed severe joint pain and swelling affecting both small and large joints of the upper and lower limbs. The joint pain was associated with morning stiffness, worse at night and early morning, and was only partially relieved by oral paracetamol he used to take on & off.

On 3rd day of his illness, he noted a rash beginning on the face, later spreading to the trunk, followed by desquamation. There was no history of mucocutaneous or gastrointestinal bleeding, cough, coryza, abdominal pain or vomiting, though he reported persistent headache, nausea and poor appetite which persisted and became intense even when the fever had gone. He also described generalized weakness and dark-colored urine without dysuria or reduced urine output.

He was admitted on day 10 of illness. On examination, he was afebrile, alert and hemodynamically stable but mildly dehydrated. Facial rash was partly erythematous and partly hyperpigmented, predominantly in the centro-facial region (Figure 1).

Initial complete blood count (day 3) was normal; however, a repeat (day 7) revealed leukopenia and thrombocytopenia (nadir platelet count 40,000/cmm) (Table 1). Liver function tests showed markedly raised alanine transaminase (1278 U/L) with serum bilirubin 1.02 mg/dL and preserved synthetic function. Renal parameters were deranged with serum creatinine 3.04 mg/dL on admission, improving gradually to 1.78 mg/dL during hospitalization. Urinalysis revealed proteinuria (++), RBCs 4-6/HPF, and pus cells 5–7/HPF with negative culture. Abdominal ultrasound showed normal liver and kidneys without ascites or pericholecystic fluid accumulation. Serum creatine phosphokinase was normal.

He was tested for dengue which came negative (both NS1 and antibodies) though IgM antibody for chikungunya came positive on immunochromatography test. He was put on intravenous normal saline along with adequate oral hydration. For joint symptoms owing to renal impairment, we started oral paracetamol 3-4 gm/ day initially though later he needed prednisolone 0.5mg/kg body weight which was tapered on next four weeks. For hyperpigmentation dermatologist advised him a short course of topical hydrocortisone along with sunblock. Gradually his symptoms improved and on follow up along with clinical improvement, his renal, hepatic and blood picture became normal.

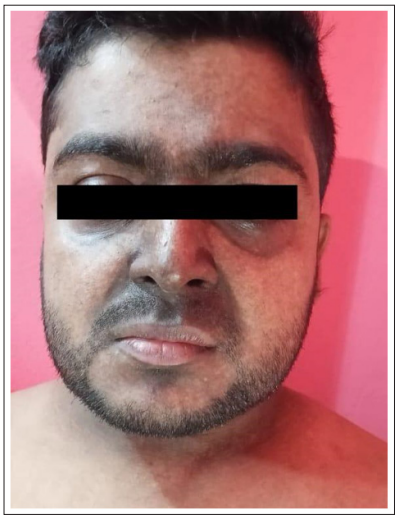

Figure 1: Skin Hyperpigmentation in Our Patient

Table 1: Comparative Blood Counts along with Day of Fever

	Day 3 of Fever	Day 7 of Fever	Day 9 of Fever
Hemoglobin (gm/dl)	14.5	15.7	14.1
HCT%	44.7	47.2	43.7
Total WBC count	10500	3200	3810
Platelets(/cmm)	220000	40000	137000

Discussion

Chikungunya virus infection classically manifests with acute fever, severe polyarthralgia, and a maculopapular rash. However, atypical and severe systemic complications are increasingly recognized. We report the case of a previously healthy 30-year-old male from Hathazari, Chattogram, who presented with the typical febrile illness accompanied by arthralgia and rash, but with additional hepatic and renal dysfunction and prominent post-infectious hyperpigmentation and arthritis. While multi-organ involvement in chikungunya is uncommon, the simultaneous occurrence of hepatic and renal impairment besides joint and skin involvement in a young adult without clear alternative etiologies highlights the virus's potential to cause significant systemic disease.

Hepatic involvement in chikungunya virus (CHIKV) infection most commonly presents with elevated transaminases and less frequently, with acute hepatitis or hepatic insufficiency. Cohort studies and case series have documented a measurable prevalence of liver abnormalities during chikungunya outbreaks, with hepatic involvement identified as a marker of more severe disease. In our case, alanine transaminase was 1278 U/L and serum bilirubin 1.02 mg/dL, with preserved hepatic synthetic function. The laboratory pattern and clinical course were consistent with viral-associated hepatocellular injury rather than drug-induced or ischemic hepatopathy [6]. Renal involvement, although less frequent than hepatic injury, has been reported in chikungunya, ranging from acute kidney injury (AKI) to interstitial nephritis and other pathologies. Rhabdomyolysis, direct viral invasion, immune-mediated injury could be responsible for renal involvement. Our patient developed renal dysfunction temporally associated with systemic illness, with serum creatinine peaking at 3.04 mg/dL and subsequently improving to 1.78 mg/dL during hospitalization. Urinalysis revealed proteinuria (++), RBCs 4–6/HPF, and pus cells 5–7/HPF with negative culture. The absence of nephrotoxin exposure, combined with gradual recovery on supportive care, supports the diagnosis of CHIKV-associated AKI [7]. Cutaneous hyperpigmentation is a recognized but under-reported sequela of chikungunya. Pigmentation may be centro-facial & diffuse or localized to flexural or extensor areas which can persist for weeks to months. Proposed mechanisms include inflammation-induced melanogenesis and photosensitivity following viral infection [8]. Our patient developed prominent facial hyperpigmentation that improved with sun protection (broad-spectrum sunscreen) and topical corticosteroids, consistent with previously described cases. This highlights the importance of counseling patients regarding photo protection and cosmetic management.

Management of chikungunya remains primarily supportive. For joint pain besides non-steroidal anti-inflammatory drugs (NSAIDs) patients may benefit from short, judicious courses of corticosteroids. However, some patients with chronic arthritis may need Disease-modifying anti-rheumatic drugs (DMARDs). Nonetheless, randomized controlled data are lacking, and decisions regarding corticosteroid use must be individualized after excluding coinfections and contraindications [9]. Our case contributes to the growing evidence that chikungunya infection can present with multi-organ involvement, including concurrent hepatic and renal dysfunction and persistent pigmentary changes. Clinicians should maintain a high index of suspicion for systemic complications in patients with atypical features such as worsening laboratory parameters, oliguria, coagulopathy, or encephalopathy. Early investigations, exclusion of alternative causes, timely multidisciplinary approach and individualized consideration of immunomodulatory therapy are essential. Future studies are needed to identify predictors of severe organ involvement and to clarify the safety and efficacy of corticosteroids and other immunomodulatory strategies in complicated chikungunya.

Conclusion

The ongoing chikungunya epidemic in Bangladesh has demonstrated atypical and uncommon clinical manifestations. We report such a case with multi-organ involvement. Inflammatory mediators release, direct viral invasion, immune dysregulation and low organ dysfunction are presumed mechanisms for organ involvement in chikungunya. Clinicians should remain vigilant, as early recognition and timely intervention may be life-saving.

Acknowledgments

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Conflict of interest

The authors declare that they have no competing interests.

Data Availability Statement

Data sharing does not apply to this article as no datasets were generated or analyzed during the current study.

Funding Statement

The study didn't receive any funding.

Ethical Approval

The study is exempt from ethical approval in our institution.

Consent

Written informed consent was obtained from the patient's legal guardian for the publication of this case report.

References

1. Bettis AA, L'Azou Jackson M, Yoon IK, Breugelmans JG, Goios A, et al. (2022) The global epidemiology of chikungunya from 1999 to 2020: a systematic literature review to inform the development and introduction of vaccines. PLoS Negl Trop Dis 16: 0010069.
2. Mascarenhas M, Garasia S, Berthiaume P, Corrin T, Greig J, et al. (2018) A scoping review of published literature on chikungunya virus. PLoS One 13: 0207554.
3. Hossain MS, Hasan MM, Islam MS, Islam S, Mozaffor M, et al. (2018) Chikungunya outbreak (2017) in Bangladesh: clinical profile, economic impact and quality of life during the acute phase of the disease. PLoS Negl Trop Dis 12: 0006561.
4. (2025) https://my.clevelandclinic.org/health/diseases/25083-chikungunya.
5. Lima Neto AS, Sousa GS, Nascimento OJ, Castro MC (2019) Chikungunyaattributable deaths: a neglected outcome of a neglected disease. PLoS Negl Trop Dis 13: 0007575.
6. Srikirin P, Siripoon T, Charoenpong L, Soonthornworasiri N, Matsee W, et al. (2022) Prevalence, risk factors and prognosis of liver involvement in chikungunya infection. Am J Trop Med Hyg 107: 1107-1115.
7. Aurore AC, Couderc T, Dueymes JM, Deligny M, Lecuit M, et al. (2021) The clinicopathological spectrum of kidney injury in chikungunya: a report of 5 cases with kidney biopsy. Am J Kidney Dis 78: 902-906.
8. Srivastava A (2016) Hyperpigmentation and chikungunya fever. Indian Dermatol Online J 7: 272-274.
9. Pathak H, Mohan MC, Ravindran V (2019) Chikungunya arthritis: clinical review and steroid use. Clinical Medicine 19: 381-385.