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Chikungunya as a differential diagnosis of subacute and chronic polyarthritis on the pediatric population: case report

*Chikungunya como diagnóstico diferencial de poliartrite subaguda e crônica na população pediátrica: relato de caso**Chikungunya como diagnóstico diferencial de poliartritis subaguda y crónica en la población pediátrica: reporte de un caso*Sofia Leite Quintão¹Eduarda Raunheitti Giesteira²Giovanna Franca Santore³Julia Sales⁴Yanne Borges Araújo⁵Barbara Neffá Lapa-e-Silva⁶¹Universidade Federal Fluminense, Faculdade de Medicina – Niterói-RJ, Brazil. Orcid: <https://orcid.org/0000-0001-7517-6287>²Universidade Federal Fluminense, Faculdade de Medicina – Niterói-RJ, Brazil. Orcid: <https://orcid.org/0000-0001-9270-4512>³Universidade Federal Fluminense, Faculdade de Medicina – Niterói-RJ, Brazil. Orcid: <https://orcid.org/0000-0002-0167-9778>⁴Universidade Federal Fluminense, Faculdade de Medicina – Niterói-RJ, Brazil. Orcid: <https://orcid.org/0009-0007-3560-9704>⁵Hospital Universitário Antônio Pedro, Serviço de Pediatria – Niterói-RJ, Brazil. Orcid: <https://orcid.org/0009-0001-3040-6103>⁶Universidade Federal Fluminense, Faculdade de Medicina. Hospital Universitário Antônio Pedro, Serviço de Pediatria – Niterói-RJ, Brazil.Orcid: <https://orcid.org/0009-0006-0331-8147>

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ABSTRACT

Introduction: Chikungunya is an arboviral disease caused by the chikungunya virus (CHIKV), transmitted by *Aedes aegypti* and *Aedes albopictus*. Although usually benign, it may progress to subacute or chronic forms, posing diagnostic challenges in children. **Objectives:** To report an atypical case of subacute arthritis due to CHIKV in a preschool child, emphasizing its role as a differential diagnosis in pediatric arthralgia. **Case description:** A previously healthy 4-year-old male patient developed prolonged fever and polyarthritis after an initial febrile episode without a focal point, presenting with cumulative peripheral arthritis, dactylitis, hematological and inflammatory changes, which prompted investigation for juvenile idiopathic arthritis. Evaluation revealed tenosynovitis and synovitis in multiple joints, and serology showed positive IgM for chikungunya, confirming subacute infection by the virus. Treatment was initiated with nonsteroidal anti-inflammatory drugs (NSAIDs) and corticosteroids, and the patient was discharged with instructions to discontinue the NSAID and gradually taper off the corticosteroid. However, he experienced clinical worsening, requiring maintenance of an intermediate dose of corticosteroids and the addition of methotrexate. Fifteen months after the onset of the condition, he maintains chronic polyarthritis, raising the hypothesis of a chronic rheumatological condition post-CHIKV or JIA triggered by the viral infection. **Discussion:** Chikungunya can mimic other arboviral infections and pediatric rheumatologic conditions, complicating diagnosis. Although persistent arthralgia is less common in children, its impact on quality of life and development may be significant. This case underscores the need to include chikungunya in the differential diagnosis of febrile syndromes with arthritis in pediatric patients.

Keywords: Chikungunya Fever; Chikungunya virus; Arthritis; Pediatrics.

RESUMO

Introdução: A chikungunya é uma arbovirose causada pelo vírus chikungunya (CHIKV), transmitida pelos mosquitos *Aedes aegypti* e *Aedes albopictus*. Embora geralmente apresente curso benigno, pode evoluir para formas subagudas ou crônicas, representando desafio diagnóstico na pediatria. **Objetivos:** Relatar um caso atípico de artrite subaguda por CHIKV em paciente pré-escolar, ressaltando sua relevância como diagnóstico diferencial em quadros de artrite infantil. **Descrição do caso:** Paciente masculino de 4 anos, previamente hígido, evoluiu com febre prolongada e poliartrite após quadro febril inicial sem foco, apresentando artrite periférica cumulativa, dactilite, alterações hematológicas e inflamatórias, o que motivou investigação para artrite idiopática juvenil. A avaliação revelou tenossinovite e sinovite em múltiplas articulações e a sorologia demonstrou IgM positiva para chikungunya, confirmando infecção subaguda pelo vírus. O tratamento foi iniciado com anti-inflamatórios não esteroidais (AINEs) e corticosteroides, e o paciente recebeu alta hospitalar com orientação de suspensão do AINE e desmame gradual do corticoide. No entanto, apresentou piora clínica, sendo necessário manter uma dose intermediária de corticoide e associar metotrexato. Quinze meses após a abertura do quadro, mantém poliartrite crônica, levantando a hipótese de quadro reumatológico crônico pós-CHIKV ou de AIJ desencadeada pela infecção viral. **Discussão:** As manifestações clínicas da chikungunya podem mimetizar outras arboviroses e doenças reumatológicas, dificultando o diagnóstico. Apesar de menos prevalente em crianças, a artralgia persistente pode comprometer qualidade de vida e desenvolvimento. O caso reforça a necessidade de considerar a chikungunya no diagnóstico diferencial de síndromes febris com artrite em pediatria.

Palavras-Chave: Febre de Chikungunya; Vírus Chikungunya; Artrite; Pediatria.

RESUMEN

Introducción: El chikungunya es una enfermedad arboviral causada por el virus chikungunya (CHIKV), transmitido por los mosquitos *Aedes aegypti* y *Aedes albopictus*. Aunque generalmente presenta un curso benigno, puede evolucionar a formas subagudas o crónicas, lo que representa un desafío diagnóstico en pediatria. **Objetivos:** Informar un caso atípico de artritis subaguda debida a CHIKV en un paciente preescolar, destacando su relevancia como diagnóstico diferencial en casos de artritis infantil. **Descripción del caso:** Un paciente varón de 4 años, previamente sano, desarrolló fiebre prolongada y poliartritis después de un episodio febril inicial sin foco aparente, presentando artritis periférica acumulativa, dactilitis, cambios hematológicos e inflamatorios, lo que motivó la investigación de artritis idiopática juvenil. La evaluación reveló tenosinovitis y sinovitis en múltiples articulaciones, y la serología mostró IgM positiva para chikungunya, confirmando la infección subaguda por el virus. Se inició el tratamiento con antiinflamatorios no esteroideos (AINE) y corticosteroides, y el paciente fue dado de alta con instrucciones de suspender los AINE y reducir gradualmente la dosis de corticosteroides. Sin embargo, el paciente experimentó un empeoramiento clínico, que requirió una dosis intermedia de corticosteroides y la adición de metotrexato. Quince meses después del inicio de los síntomas, persiste una poliartritis crónica, lo que plantea la hipótesis de una afección reumatológica crónica post-CHIKV o una artritis idiopática juvenil (AIJ) desencadenada por la infección viral. **Discusión:** Las manifestaciones clínicas de la chikungunya pueden simular otras arbovirosis y enfermedades reumatológicas, lo que dificulta el diagnóstico. Aunque menos frecuente en niños, la artralgia persistente puede comprometer la calidad de vida y el desarrollo. Este caso refuerza la necesidad de considerar la chikungunya en el diagnóstico diferencial de síndromes febriles con artritis en pediatria.

Palabras Clave: Fiebre por chikungunya; Virus de la chikungunya; Artritis; Pediatria.

INTRODUCTION

Chikungunya is an arboviral disease caused by the chikungunya virus (CHIKV), from the *Togaviridae* family and the *Alphavirus* genus, which is transmitted through the bite of female *Aedes aegypti* and *Aedes albopictus* mosquitoes infected with CHIKV.¹ Furthermore, person-to-person transmission can occur via transfusion when the donor is in the viremia phase.²

Most CHIKV infections are symptomatic but generally have a benign and self-limiting course.³ The classic clinical presentation is characterized by musculoskeletal involvement associated with an inflammatory component, such as fever, predominantly in the acute phase.¹ In some cases, these symptoms can become chronic, making chikungunya an important public health concern in tropical and subtropical areas.⁴

Given the importance of this arboviral disease in the national context, this work aims to report an atypical case of subacute arthritis due to CHIKV in a preschool-aged patient, highlighting the importance of differential diagnosis in cases of arthralgia in pediatrics.

REPORT

A previously healthy 4-year-old male patient presented with fever (max. 38.5 °C) associated with acute polyarthritis in the ankles, hips, right knee, and dactylitis on the 3rd finger of the left hand. During several visits to the emergency room, he received antibiotic therapy without improvement. He progressed with pain and edema in the ankles and left knee, while maintaining fever. After 30 days, he was hospitalized with persistent symptoms, difficulty walking and increased inflammatory markers. Echocardiogram and abdominal ultrasound showed no abnormalities. He was referred to Pediatric Rheumatology with an initial suspicion of juvenile idiopathic arthritis.

On admission, he presented with good general condition, painless cervical lymphadenopathy, pain and limitation of hip rotation, edema (+/4+), warmth and limitation in both ankles, dactylitis on the 3rd finger of the left hand, and pain on extension of the right knee.

Serological tests, autoantibody tests, and an ophthalmological examination were requested to screen for uveitis, as well as a chest X-ray to screen for latent tuberculosis. Treatment with anti-inflammatory medication was also initiated. Of the requested tests, the only reactive result was IgM for the chikungunya virus. Ultrasound of the hands and wrists, knees, and ankles showed articular inflammatory activity. After confirmation of the diagnosis of subacute chikungunya, the patient was discharged with oral prednisone and outpatient follow-up with the pediatric rheumatology team.

DISCUSSION

In the acute phase of chikungunya, the signs and symptoms resemble those of other febrile illnesses.¹ The main distinguishing characteristic is the intensity of joint pain, frequently accompanied by edema.¹ In regions with circulation of other arboviruses, such as dengue, differential diagnosis becomes even more important.⁴ In children, chikungunya can present with asymptomatic, dermatological, and neurological manifestations more frequently than in adults⁵ and arthralgia can persist beyond the acute phase.⁶ The persistence of joint pain requires consideration of the disease in the diagnosis of childhood rheumatological conditions.¹ There are few pediatric studies on chikungunya, which limits the definition of the disease phases in this population. Although the prevalence of chronic arthralgia is lower in children (around 20%) than in adults (29.1%), the persistence of pain in these phases can have a significant impact on quality of life and child development, with 18.6% to 32.5% of children presenting symptoms in two or more follow-up visits.⁶ The literature reports the possibility of post-chikungunya chronic rheumatism, with persistent arthralgia lasting for months or years,^{7,8} requiring diagnostic exclusion through clinical history and specific tests.¹ Factors such as female sex, advanced age, hypertension, type 2 diabetes, and osteoarthritis increase the risk of chronicity,⁹ but cases in pediatric patients without comorbidities can also evolve into prolonged forms of the disease.

Regarding clinical management, it requires pain assessment with age-appropriate tools, with restrictions on the use of NSAIDs and corticosteroids in the acute phase, due to the risk of hemorrhagic and renal complications in scenarios of cocirculation with dengue.¹ In the subacute and chronic phases, the judicious use of NSAIDs, corticosteroids, and immunomodulators (hydroxychloroquine, sulfasalazine, and methotrexate) is permitted, the latter in refractory cases, associated with multidisciplinary support to mitigate the repercussions of chronic pain on child development.¹

This case highlights the importance of considering chikungunya as a differential diagnosis in cases of acute febrile syndromes associated with osteoarticular involvement in the pediatric population.

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