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CASE REPORT

Hand, foot, and mouth disease with exuberant presentation in an adult: case report

Doença mão-pé-boca com manifestação exuberante no adulto: relato de caso

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Abstract

The following report describes a case of hand, foot, and mouth disease (HFMD) in an adult patient, presenting atypical manifestations due to its clinical exuberance. The patient, a 26-year-old physician, reported the onset of fever and odynophagia followed on the 2nd day by vesicles and enanthema on the soft palate, associated with erythematous papules in the perioral and nasal dorsum regions, extending to the hands and feet. The lesions progressed in severity and number over the days, exhibiting unusual characteristics. Onychomadesis also manifested in the nails after the 6th week. The diagnostic investigation included a series of serologies, highlighting reactivity to Coxsackievirus. A biopsy of a papulovesicular lesion revealed the presence of keratinocyte necrosis and inflammatory reaction in the dermis. The discussion encompasses the pathogenesis of HFMD, its atypical manifestations in adults, and the importance of diagnostic elucidation. This case report contributes to understanding the clinical variations of HFMD in adults, emphasizing the need to consider this entity even outside the predominant age group.

Keywords: Hand, foot, and mouth disease. Coxsackievirus. Adult.

Resumo

O relato a seguir descreve um caso singular de Doença Mão-Pé-Boca (DMPB) em um paciente adulto, apresentando manifestações atípicas por sua exuberância clínica. O paciente, um médico de 26 anos, relatou o surgimento de manchas pelo corpo acompanhadas de febre e odinofagia. No segundo dia, observou-se o surgimento de vesículas e enantema no palato mole, associados a pápulas eritematosas na região perioral e dorso nasal, estendendo-se para mãos e pés. As lesões evoluíram em gravidade e quantidade ao longo dos dias, apresentando características incomuns. Onicomadese também se apresentou nas unhas após a sexta semana. A investigação diagnóstica incluiu uma série de sorologias, destacando a reatividade para o Coxsackievirus. A biópsia de uma lesão pápulo-vesiculosa evidenciou a presença de necrose de queratinócitos e reação inflamatória na derme. A discussão abrange a patogenia da DMPB, suas manifestações atípicas em adultos e a importância da elucidação diagnóstica. Este relato de caso contribui para a compreensão das variações clínicas da DMPB em adultos, destacando a necessidade de considerar esta entidade mesmo fora da faixa etária predominante.

Palavras-chave: Doença mão-pé-boca. Coxsackvirus. Adulto.

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Introduction

This case describes the clinical presentation and diagnostic approach of a 26-year-old male patient residing in Rio de Janeiro, Brazil, who presented with complaints related to cutaneous lesions. The complexity of the case involves the identification of systemic symptoms and atypical dermatological manifestations, which, on evaluation, were associated with hand, foot, and mouth disease (HFMD). HFMD is a predominantly pediatric viral infection, primarily caused by enteroviruses, such as Coxsackie A16 and Enterovirus 71, but, in this case, manifested atypically in an adult[1].

Clinical case

The patient presented, on the 1st day of symptoms, with fever (38.3°C) and odynophagia, followed on the 2nd day by vesicles and enanthema on the soft palate. The condition progressed to erythematous papules capped with honey-colored crusts in the perioral and nasal dorsum regions, along with lesions on the palms and dorsum of the hands and dorsum and plantar region of the feet (Figs. 1 and 2). On the 3rd and 4th days, there was accentuation of the papulovesicles on the extremities, some ulcerating and forming erythematous papules with honey-colored crusts (Figs. 3 and 4). On the 5th day, dissemination occurred to the elbows, cubital fossae, and knees. The patient received only symptomatic treatment for symptom control, such as headache and myalgia and despite being a physician, denied known contact with others presenting similar symptoms.

Facial lesions resolved on the 13th day, followed by palmoplantar desquamation. Significant clinical improvement of the other lesions was observed on the 21st day, followed by onychomadesis in all twenty nails by the 6th week, with residual erythema and persistent post-inflammatory hyperpigmentation in the affected areas.

The results of serological tests revealed non-reactivity for rubella, measles, herpes virus, HIV1/2, HTLV1/2, and syphilis. However, Epstein–Barr immunoglobulin M (IgM) and IgG serology were reactive, despite a reported episode of odynophagia 30 days earlier. The chemiluminescent microparticle immunoassay technique assessed that the detectability of the IgM marker exhibited prolonged duration, thus constraining its clinical utility in characterizing acute infection. The assessment of neutralizing antibodies against Coxsackie B virus through serum examination using human epithelial cells revealed positive outcomes for infection. The test indicated that titers > 1/32 would suggest a recent infection. Given the common occurrence of cross-reactivity in enterovirus titration, higher titers typically correlate with the infecting serotype. Emphasis was given to serologies for Coxsackie virus B3 (B2: 1/64; B3: 1/512; B4: 1/16; and B5: 1/64), with elevated titers, confirming the infection.

Figure 1. Presence of erythematous papules and macules with honey-colored crusts in the perioral region and on the nasal dorsum (day 2).

The patient was referred to the cardiology service for assessment of potential cardiac complications but failed to attend the subsequent appointment, claiming no symptoms in that regard.

Histopathology of a papulovesicular lesion on the right forearm revealed necrosis of keratinocytes in the upper portion of the epidermis, spongiosis, and exocytosis of lymphocytes. The upper dermis showed intense edema with an inflammatory reaction composed of lymphocytes, neutrophils, and erythrocytes (Figs. 5 and 6).

Discussion

HFMD, typically associated with pediatric cases, manifests clinically with fever, odynophagia, mucosal vesicles, and a papulovesicular rash on the extremities[1]. The atypical presentation in an adult, as observed in this case, poses a more challenging diagnostic scenario[1,2].

The viral classification of HFMD primarily involves the enterovirus genus, with a focus on Coxsackie A16 and

Figure 2. Vesicles, erythematous macules, erythematous papules, and crusts on the dorsum of the feet (day 2).

Figure 3. Erythematous papules and papulovesicles, some exulcerated, on the dorsum of the hands (day 3).

Figure 4. Erythematous papules and plaques, with honey-colored crusts, on the dorsum of the hands and wrists (day 4).

Figure 5. Necrosis of keratinocytes in the upper portion of the epidermis also shows spongiosis and lymphocytic exocytosis (H&E – ×100).

Enterovirus 71[3-5]. Transmission occurs through direct contact, commonly through oral and nasal secretions, feces, and contaminated objects, exhibiting a seasonal pattern with predominant outbreaks in spring and summer[6-8].

The patient's clinical presentation, with extensive involvement of the extremities progressing to onychomadesis, aligns with recent reports of HFMD in adults[9]. While most cases in the adult population are asymptomatic, more severe outbreaks have been documented, notably associated with serotype CA A6[9-11].

Diagnostic confirmation in this case relied on specific serologies, excluding other viral etiologies. Skin biopsy played a significant role, revealing histopathological features consistent with HFMD[6,8,11].

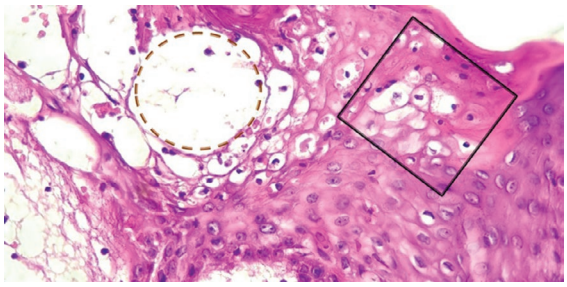

Figure 6. Presence of spongiosis (circle) and necrosis of keratinocytes (square) (H&E - ×400).

Treatment for HFMD is primarily symptomatic, emphasizing the need for infection control measures, as the patient is highly contagious during the presence of cutaneous lesions and fever. Recommendations include distancing from group and school activities, meticulous handwashing, and refraining from sharing personal items[12].

Understanding the clinical variability of HFMD across different age groups is crucial for accurate diagnosis and appropriate clinical intervention. This case underscores the importance of an integrated approach, combining clinical assessment and comprehensive laboratory examinations, such as serologies and histopathology, for diagnostic elucidation.

Although more prevalent in children, HFMD can manifest more severely in adults, as observed in this case. This report contributes to expanding knowledge about HFMD, particularly in the context of atypical clinical presentations, highlighting the significance of clinical and laboratory surveillance to address diagnostic challenges in adult patients.

Conclusion

This case report highlights the possibility of an atypical presentation of Hand, Foot, and Mouth Disease (HFMD) in adults, a condition typically associated with the pediatric age group. The exuberant clinical presentation, with extensive involvement of the extremities and subsequent onychomadesis, underscores the need to consider HFMD, even with atypical presentation, when suggestive areas are affected.

The diagnosis was confirmed through specific serologies and skin biopsy, which revealed histopathological features consistent with HFMD. Treatment was symptomatic, with ongoing monitoring of the condition.

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Conflicts of interest

The authors have no conflicts of interest in the subject matter or materials discussed in this manuscript.

Ethical disclosures

Protection of human and animal subjects. The authors declare that the procedures followed were in accordance with the regulations of the relevant clinical research ethics committee and with those of the Code of Ethics of the World Medical Association (Declaration of Helsinki).

Confidentiality of data. The authors declare that they have followed the protocols of their work center on the publication of patient data.

Right to privacy and informed consent. The authors have obtained the written informed consent of the patients or subjects mentioned in the article. The corresponding author is in possession of this document.

Use of artificial intelligence for generating text. The authors declare that they have not used any type of generative artificial intelligence for the writing of this manuscript, nor for the creation of images, graphics, tables, or their corresponding captions.

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