

Onychomadesis secondary to hand-foot-mouth disease: a frequent manifestation and cause of concern for parents

Onicomadesis secundaria a enfermedad pie-mano-boca: una manifestación frecuente y motivo de preocupación de los padres

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Abstract

Introduction: Nail alterations in children are an important cause of parent anxiety and derive in multiple and unnecessary consultations. The onychomadesis corresponds to the complete and painless detachment of the nail plate from the proximal fold. This self-resolving nail finding has been described as a late complication of hand-foot-mouth disease, a frequent viral exanthema in the pediatric age. **Objective:** To describe a classic pediatric case of hand-foot-mouth disease with subsequent onychomadesis. **Clinical case:** A 3-years-old male patient with an acute presentation of acute erythematous perioral papulo-vesicles, which extend to upper extremities and hands, buttocks, thighs and feet, asymptomatic, and without compromising general condition. Skin lesions resolve completely, but after one month, he develops detachment of the nails, with subsequent complete recovery. **Conclusions:** The recognition of this association will allow primary care physicians to guide the parents about a benign and self-resolving process that may occur as part of the evolution of hand-foot-mouth disease, thus avoiding unnecessary anxiety, referral and treatments.

Keywords:

Hand-foot-mouth disease;
enterovirus;
exanthema;
nail diseases

Introduction

Onychomadesis is the spontaneous complete detachment of the nail from its proximal end, which can affect hands and feet. Although it is not a common finding in children, its presence causes great concern among family members and caregivers¹. Among the probable etiologies of the nail plate detachment are local causes, such as paronychia and trauma, in which one or two nails are usually affected; and systemic causes, in which several fingernails and toenails are affected². These latter include malnutrition, medication (antibiotics, retinoids, lithium, anticonvulsants, and cytotoxics), some infections (candidiasis, syphilis, scarlet fever, hand-foot-and-mouth disease), and other pathologies, such as Kawasaki syndrome, thrombocytopenia, systemic lupus erythematosus, acrodermatitis enteropathica, epidermolysis bullosa, hypoparathyroidism, and Stevens-Johnson syndrome. There are also familial forms with a dominant inheritance pattern and congenital forms, possibly related to the delivery stress^{2,3}.

The association between onychomadesis and hand-foot-and-mouth disease has been described in recent years and was first reported in 2000⁴. Since then, both sporadic and epidemic cases have continued to be reported as to show this relationship⁵.

The hand-foot-and-mouth disease is a common childhood infection caused by Enteroviruses of the Picornavirus family. It occurs mainly in summer and autumn and is transmitted between people via the fecal-oral route and to a lesser extent by respiratory secretions⁶.

The most frequent etiologic agents reported in the literature are Coxsackievirus A16 (most common) and Enterovirus 71 (most common morbidity and mortality), and other serotypes have also been isolated⁷.

Clinically it is characterized by a palmoplantar vesicular eruption and erosive stomatitis. It usually occurs in children under ten years of age, but may also affect adults, given its high degree of infectivity⁸. In addition to the typical clinical presentations in the mouth, hands, and feet, in recent years more generalized and severe cases have been described, where diverse skin lesions in the perioral area, neck, trunk and extremities, and skin detachment in palms and soles has been described. These more severe cases have been reported associated with Coxsackievirus A6⁹.

The objective is to present a characteristic clinical case of hand-foot-and-mouth disease with the consequent nail findings described.

Clinical case

A three-year-old male patient with unremarkable past medical history. The patient is taken by his pa-

rents to a health center due to a five-day history of microvesicular lesions with an erythematous rim, which initially appear in the perioral area, then extended to the hands, arms, buttocks, thighs, and feet; he is in good general condition, asymptomatic.

The diagnosis of hand-foot-and-mouth disease is made, with more extensive lesions than the usual clinical picture.

General moisturization and control measures are indicated according to evolution.

He evolved with complete resolution of the skin lesions and remission without any residual lesion.

After one month, the complete proximal detachment of nail plates was observed, which corresponds to the characteristic onychomadesis as a late complication of this viral disease (Figure 1). A few days after the initial consultation, the father presents a similar, milder eruptive skin condition, also with subsequent detachment of his nails (Figure 2).

Father and son have onychomadesis in some fingernails and toenails, with complete detachment of nail plates, which resolved spontaneously between six to eight weeks, with the growth of healthy new nails.



Figure 1. Onychomadesis of the toes in a child.



Figure 2. Onychomadesis in a child and his parent.

Discussion

Nail alterations that often occur as a late consequence of hand-foot-and-mouth disease are Beau's lines and onychomadesis. Stopping the proliferation of the nail matrix can lead to partial or total damage of the nail plate. Beau's lines are transverse grooves in the nail that run from one lateral fold to the other, resulting from the temporary interruption in the formation of the nail plate. Onychomadesis would represent the most severe form of this phenomenon, since the causative agent would act for a longer period of time, with the involvement of the entire thickness of the nail plate and its consequent detachment from the nail bed¹. This is a consequence of the complete and transitory inhibition of nail growth for one or two weeks. The nail continues to grow over the nail bed, remaining attached to the underlying tissues and detaching as it loses its connection with the new nail that is beginning to grow at that moment¹⁰.

The pathogenesis of onychomadesis in hand-foot-and-mouth disease has not been fully clarified. Besides arresting the function of the nail matrix, it has been proposed that maceration due to digital blisters, inflammation of the proximal nail bed and direct toxic effect of the virus can be involved¹¹.

The diagnosis of onychomadesis is clinical, so it is essential to make an accurate anamnesis aimed at finding the associations previously described. Further examination would only be necessary in cases where the history is unclear or unreliable if a systemic cause or the presence of a local infectious agent is suspected. It is worth mentioning the ultrasonography of the nail as a complementary resource in case of doubt in the diagnosis, providing also chronological data that allow establishing the date of the original injury¹². This type of study is only made in exceptional cases, as it is not always available, is operator-dependent and involves an additional cost that is unnecessary in a typical clinical situation.

Due to the affected nail plate has already been detached and the newly growing nail has appeared, no treatment is necessary. In most cases, complete recovery of the nail occurs between six and 12 weeks.

It is only recommended to cleanse the area and to avoid injuries¹.

Conclusion

Due to the frequency of hand-foot-and-mouth disease cases has been increasing¹⁰, we are likely to face this exanthem and its consequences more frequently. Therefore, we must know how to recognize not only the characteristics of the clinical picture in its acute phase but also later consequences such as onychomadesis.

In cases of children with onychomadesis, a history of the viral disease should be sought in the two months prior to the onset of this phenomenon. In this context, the most frequently reported etiology is hand-foot-and-mouth disease.

Likewise, when the diagnosis of this virus is made, parents and caregivers should be warned of the possibility of onychomadesis from four weeks after the viral infection¹³. This phenomenon occurs most often in fingernails, and may also occur in toenails¹⁴.

Since pediatricians receive the vast majority of cases, it is essential to be familiar with this association. This will reassure the family members of the affected child and avoid unnecessary referrals and treatment.

Ethical responsibilities

Human Beings and animals protection: Disclosure the authors state that the procedures were followed according to the Declaration of Helsinki and the World Medical Association regarding human experimentation developed for the medical community.

Data confidentiality: The authors state that they have followed the protocols of their Center and Local regulations on the publication of patient data.

Rights to privacy and informed consent: The authors have obtained the informed consent of the patients and/or subjects referred to in the article. This document is in the possession of the correspondence author.

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Conflicts of Interest

Authors declare no conflict of interest regarding the present study.

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