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Onychomadesis: nail shedding as a delayed manifestation of hand, foot, and mouth disease

Onicomadese: desprendimento ungueal como manifestação tardia da doença mão-pé-boca

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Key points

What is known

- Onychomadesis involves the complete shedding of a nail from the proximal nail bed due to the cessation of nail plate production.
- *Coxsackievirus* A6 and A10 have emerged as major agents of atypical hand, foot, and mouth disease (HFMD) and post-infection onychomadesis.
- The nail matrix recovers spontaneously within three to six months. Reassuring parents avoids unnecessary interventions during the recovery period.

What is added

- Nail diseases are rare in children but should alert healthcare professionals for proper evaluation and management.
- Viral replication in the nail matrix can cause temporary nail growth arrest and nail shedding.
- Coxsackievirus A10 can interfere with the Wnt/β-catenin signaling involved in nail growth and disrupt cell proliferation and nail stem cell differentiation.

A previously healthy two-year-old girl presented with fever, painful mouth ulcers, and a pruritic vesicular rash on the hands and feet following contact with her twin sister who had recently been diagnosed with hand, foot, and mouth disease (HFMD). She was diagnosed with HFMD and treated symptomatically with analgesics, skin hydration, and dietary adjustments.

Four weeks later, she returned with nail abnormalities, including partial nail plate detachment (onychomadesis), white transverse ridges across the nail plate (Beau's lines), nail discoloration, scaling of the nails, and peeling skin on her fingers (Fig. 1).

A clinical diagnosis of onychomadesis secondary to HFMD was established. The condition and its benign course were explained to her mother. The child lost several nails, which regrew completely within three months without the need for intervention.

HFMD is a common viral infection in children, typically caused by Coxsackievirus A16 or Enterovirus 71[1]. Although self-limiting, delayed complications such as onychomadesis can occur four to six weeks after the onset of the disease[1,2]. Coxsackievirus A6 and A10 are major agents of atypical HFMD presentations, including a higher incidence of nail changes[2].

The pathogenesis of post-HFMD onychomadesis is not fully understood, but it is thought to involve virus-induced damage or the temporary inhibition of nail growth during the viremic phase[1,4].

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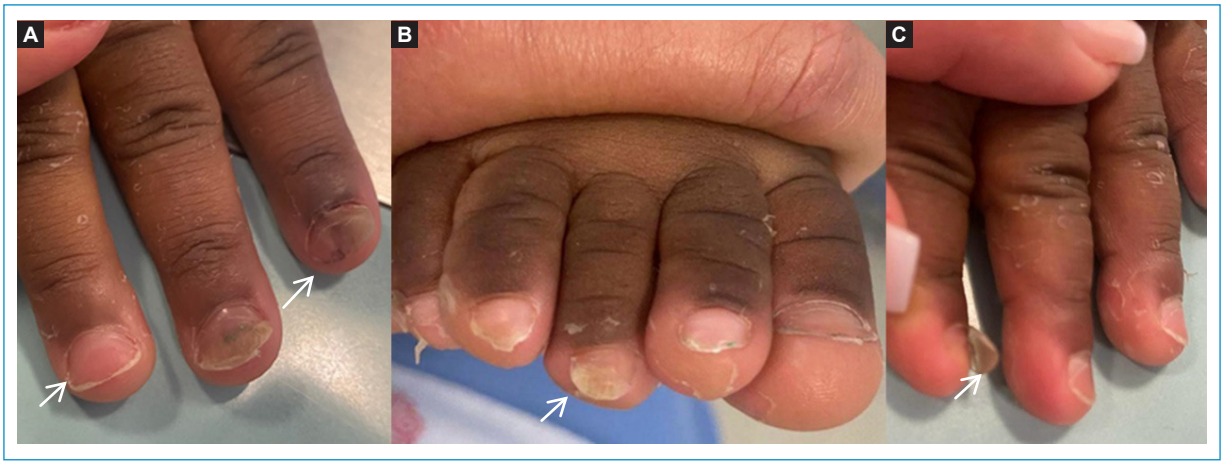

Figure 1. A: transverse white ridges consistent with Beau's lines (white arrows) and darkening of the fingernails. **B:** scaling and discoloration of the fingernails (white arrow) along with skin peeling on the toes. **C:** partial nail plate detachment (onychomadesis).

A recent study demonstrated that Coxsackievirus A10 impairs nail regeneration by mimicking the activity of DKK1, an antagonist of the Wnt/β-catenin signaling pathway, which is essential to nail matrix renewal, disrupting stem cell proliferation and differentiation and leading to nail shedding[5].

Recovery is usually complete and occurs within three to six months with no sequelae. Nail trimming is recommended to avoid trauma[3].

Clinicians should be aware of this manifestation to avoid misdiagnosis and to reassure parents, as the condition is benign and self-limiting[3].

Authors contributions

All authors: the idea behind, and design of, the study, report, review, or other type of paper; data acquisition from patients, research studies, or literature; analysis or interpretation of data from patients, research studies, or literature; drafting the article; critical review of the article for important intellectual content; final approval of the version to be published; agreement to be held accountable for the accuracy or integrity of the paper.

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Conflicts of interest

None.

Ethical considerations

Protection of humans and animals. The authors declare that no experiments involving humans or animals were conducted for this research.

Confidentiality, informed consent, and ethical approval. The authors have followed their institution's confidentiality protocols, obtained informed consent from patients, and received approval from the Ethics Committee. The SAGER guidelines were followed according to the nature of the study.

Declaration on the use of artificial intelligence. The authors declare that no generative artificial intelligence was used in the writing of this manuscript.

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