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Case Report

Surge of onychomadesis

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ABSTRACT

Onychomadesis is a rare condition characterized by the spontaneous separation of the nail plate from the nail bed. This case series aims to provide a comprehensive overview of onychomadesis cases observed in pediatric age group . We present a retrospective analysis of clinical and demographic data from a series of pediatric patients diagnosed with onychomadesis, outlining the clinical features, potential etiological factors, management strategies, and outcomes. Further research and collaboration are essential to elucidate the underlying mechanisms and optimize therapeutic approaches for onychomadesis in children.

1. Introduction

Onychomadesis, a condition characterized by the spontaneous separation of the nail plate from the nail bed, has been increasingly recognized following viral illnesses in both adults and children. Viral-induced onychomadesis typically manifests as the shedding of nails several weeks after a viral infection, with studies linking it to various viral agents.

Hand-foot-and-mouth disease (HFMD) is a prevalent viral illness that primarily affects infants and young children, commonly caused by enteroviruses and coxsackievirus. Clinically, HFMD is characterized by malaise, fever, and a distinctive rash featuring vesicles in the oral cavity, as well as on the hands and feet.[1] Notably, late post-infectious complications of HFMD may encompass onychomadesis, Beau's lines, and nail matrix arrest. Recently, there has been an observed increase in the incidence of HFMD-associated nail changes, particularly onychomadesis.

2. Case Series

This study presents a comprehensive analysis of a cohort comprising 40 pediatric patients aged between 2 and 13 years, who sought medical attention at a tertiary referral hospital in Northern India between October and December. The primary complaint among these patients was the shedding and breaking of nails. The mean age of the patients was 5.8 years, with 45% (n=18) being boys and 55% (n=22) being girls.

Approximately 80% of the cases had confirmed diagnoses of Hand-Foot-and-Mouth Disease (HFMD), while the remaining patients reported other illnesses such as fever and sore throat. The onset of nail signs following confirmed HFMD varied from 4 to 12 weeks on average. Notably, 30% of the patients (n=12) had a history of atopy. Out of the confirmed cases, five required hospitalization, while the rest were managed conservatively.

On average, 2-5 nails were affected in each patient, with no significant difference observed between fingernails and

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toenails. Interestingly, there was no apparent correlation between the severity of HFMD and the occurrence of onychomadesis. Common additional findings included Beau's lines, characterized by transverse grooves on the nail plate, and partial leuconychia.

Parents were generally reassured about the regrowth of their child's nails, and biotin supplements were prescribed in most cases. For some children who self-picked their nails, partial removal of nail plates and application of emollients were necessary as part of the treatment regimen. This study aims to provide a detailed account of the clinical characteristics and management approaches for onychomadesis cases following viral illnesses, particularly focusing on HFMD, in the pediatric population.

3. Discussion

Onychomadesis is characterized by separation of the nail plate from the matrix with eventual shedding. It has been seen as a common association with pemphigus vulgaris and hand-foot-mouth disease, and following chemotherapy or antiepileptic medications. Other associations are in alopecia areata, stevens Johnson syndrome, varicella and idiopathic cases have also been seen.[2,3]

The latency period for onychomadesis following HFMD was one to two months (mean: 40 days). Not all nails are affected. On average, each patient sheds only four nails. In addition, there is no relationship linking onychomadesis with the severity of HFMD.[3]

The mechanism of onychomadesis in HFMD is still unknown. However, onychomadesis means that nail matrix proliferation was temporarily inhibited. It is still debated whether the inhibition results from direct inflammation spreading from skin lesions of HFMD around nails or coxsackievirus-specific nail matrix involvement, or HFMD's severe systemic impact on the general condition of the small children.[4]

Another hypothesis is that the matrix activity and growth rate of the nails remains intact, but the quality of the manufactured nail plate differs, becoming thinner and dystrophic.[5]

The third hypothesis is that specific novel variants of HEV are virulent and new kinds of virus–host interactions may lead to nail matrix dysfunction. It has been postulated that CVA6 may be the major subtype associated with onychomadesis following HFMD.[4,6]

In less severe cases of nail matrix arrest, one may present with Beau's lines, white, transverse ridges across the nail plate.

3.1. Diagnosis

Beau's lines and onychomadesis are clinical diagnoses. Distinct nail changes can be noted by inspecting the nail plate. The presence of transverse depressions or nail plate shedding can help differentiate between Beau's line and onychomadesis.

3.2. Prognosis & treatment

It is a self-limiting condition with eventual regrowth of the nails. Supportive care is crucial, including the protection of the nail bed by maintaining short nails and using adhesive bandages over the affected nails to avoid snagging or ripping off the partially attached nails.[7]

Topical treatments using 40% urea or halcinonide 0.1% have shown success in a few reported cases. However, it's important to acknowledge that these treatments may not yield universal effectiveness. In instances of advanced onychomadesis causing significant pain and hindrance to daily activities, nail plate removal becomes a necessary intervention.[8]

4. Conclusion

In summary, onychomadesis is a dramatic symptom that can be seen from a variety of external factors or systemic illness. Given this year's notable increase in HFMD cases in India, it is important to remember this as a late presentation of HFMD and feel comfortable reassuring the patient and their parents that this will heal with normal nails once the new nail has grown out.

5. Conflicts of Interest

None of the authors has any conflicts of interest to declare

6. Source of Funding

None.

References

1. Guerra AM, Orille E, Waseem M. Hand Foot And Mouth Disease. [Updated 2022 Oct 9]. StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022.
2. Acharya S, Balachandran C. Onychomadesis in stevens Johnson syndrome. *Indian J Dermatol*. 1996;62(4):264–5.
3. Chiu HH, Lan CC, Wu CS, Kuo KC, Chen GS, Wei KC, et al. Onychomadesis following hand-foot-and-mouth disease. *Cutis*. 2016;97(5):20–1.
4. Hardin J, Haber RM. Onychomadesis: literature review. *Br J Dermatol*. 2015;172(3):592–6.
5. Weismann KJ. Beau and his descriptions of transverse depressions on nails. *Br J Dermatol*. 1977;97(5):571–2.
6. Chiu HH, Liu MT, Chung WH, Ko YS, Lu CF, Lan CE, et al. The Mechanism of Onychomadesis (Nail Shedding) and Beau's Lines Following Hand-Foot-Mouth Disease. *Viruses*. 2019;11(6):522. doi:10.3390/v11060522.
7. Salgado F, Handler MZ, Schwartz RA. Shedding light on onychomadesis. *Cutis*. 2017;99(1):33–6.

8. Mishra D, Singh G, Pandey SS. Possible carbamazepine-induced reversible onychomadesis. *Int J Dermatol*. 1989;28(7):460–1.

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