Bulletin of the *Transilvania* University of Braşov
Series VI: Medical Sciences • Vol. 8 (57) No. 2 - 2015

ONYCHOMADESIS FOLLOWING HAND-FOOT-MOUTH DISEASE – OBSERVATIONS ON FIVE CASES

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Abstract: *In 2015, an outbreak of hand, foot and mouth disease (HFMD) occurred in Romania and many patients presented with onychomadesis following HFMD. We report on five children (3 girls and 2 boys, aged between 3 and 12 years) who were consulted for onychomadesis involving the fingernails and toenails, all of them being diagnosed with HFMD 4-6 weeks ago. We observed no relationship between onychomadesis and the severity of the previous HFMD in our patients. In all of our cases, treatment for onychomadesis was not necessary; nail changes were temporary with spontaneous normal regrowth.*

Key words: *onychomadesis, hand, foot and mouth disease.*

1. Introduction

Nail matrix arrest has been associated with some systemic illnesses caused by infections or drug exposure, but many cases are idiopathic. [5] A wide range of nail dystrophies may result: a short-term slowing down of nail growth leads to Beau's lines, while a long-term stop of nail formation will cause onychomadesis. Both fingernails and toenails may be involved. In the last decades, sporadic reports of association between hand, foot and mouth disease (HFMD) and occurrence of onychomadesis have been reported [1], [3], [6], [7].

2. Clinical cases

We report on five children (3 girls and 2 boys, aged between 3 and 12 years) (table I) who were consulted for onychomadesis involving the fingernails and in one patient toenails, too (fig. 1, 2, 3). None had history of previous trauma and periungual dermatitis or systemic disease but they all had been diagnosed with HFMD about 4-6 weeks ago. Three of the patients had a mild form, one patient a moderate form and one patient a severe form of HFMD. We observed no relationship between onychomadesis and the severity of the previous HFMD in our patients. Not all fingers with onychomadesis were those with lesions of HFMD. In all of our cases, treatment for onychomadesis was not necessary; nail changes were temporary with spontaneous normal regrowth.

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3. Discussion

Hand-foot-mouth disease (HFMD) is a relatively common, self-limited childhood illness often seen as small epidemics in autumn or spring. Probably many adults are non-symptomatic carriers as the condition usually runs a very mild course [7]. HFMD is characterized by fever and maculopapular and vesicular lesions on the hands, feet, and mouth. Variable strains of viruses are known to be related, such as Coxsackie virus A5, A6, A7, A9, A10, A16 (the most common), B1, B2, B3, B5; echoviruses E3, E4, E9; and enterovirus 71 [4], [6].

Table 1

Characteristics of cases of onychomadesis after hand-foot-mouth disease

Cases	Sex	Age (years)	Site	Onset	Severity of hand-foot-mouth disease	Treatment for onychomadesis
1	F	3	Fingernails	September 2015	Severe (requiring hospitalization)	Observation
2	F	6	Fingernails	October 2015	Mild	Observation
3	M	4	Fingernails and toenails	October 2015	Moderate	Observation
4	F	12	Fingernails	October 2015	Mild	Observation
5	M	5	Fingernails	November 2015	Mild	Observation

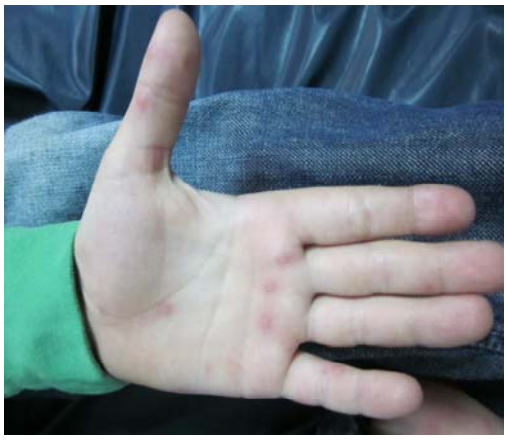

Fig. 1. *Vesicles on the palm in hand, foot and mouth disease in case 3*

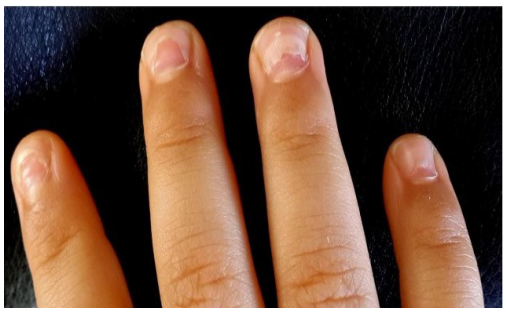

Fig. 2. *Onychomadesis of the fingernails in case 3*

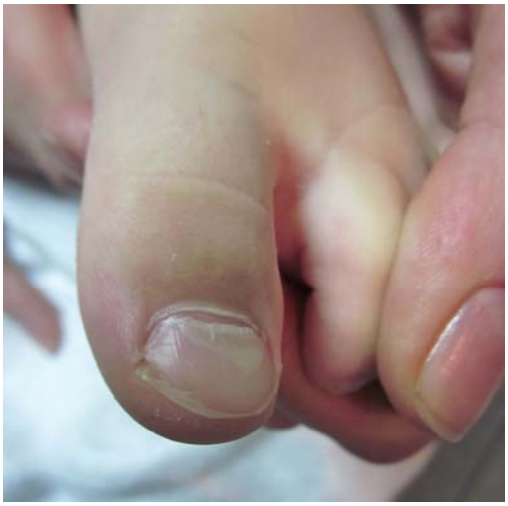

Fig. 3. *Onychomadesis of the toenails in case 3*

Conditions that can cause onychomadesis include severe systemic diseases, nutritional deficiencies, periungual dermatitis, trauma, chemotherapy, drug ingestion, fever, and infections [6]. Nail matrix arrest can be explained by inflammation in the matrix area, inhibition of cellular proliferation, alteration in the quality of manufactured nail plate, and nerve injury or dysfunction [4].

The mechanism of onychomadesis after HFMD remains unclear. Bettoli et al. [2] consider that periungual inflammation secondary to viral infection may be induced directly by viruses or indirectly by immunocomplexes and consequent distal embolism, while Cabrerizo et al. [3] suggested that virus replication directly damage the nail matrix, based on the presence of Coxsackie virus 6 in shed nails. Because nails with onychomadesis are not always of the fingers or toes affected by HFMD, as in our cases, an indirect effect of viral infection on the nail matrix is more plausible.

The frequency of onychomadesis after HFMD are probably underestimated because nails changes spontaneously regresses, and the interval between HFMD and onychomadesis is about four weeks. In all our cases, the onset of onychomadesis was about 4-6 weeks after the peak of epidemic of HFMD (August-September 2015).

4. Conclusion

By reporting these cases we emphasize the importance of recognizing the possible association between HFMD and onychomadesis especially when children with onychomadesis present a month after an HFMD outbreak, to avoid unnecessary investigations and overtreatment.

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