First Reported Case of Onychomadesis in Saudi Arabia

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Abstract

Onychomadesis is the complete removal of the nail's proximal portion. It affects both the fingernails and toenails and arises following nail matrix arrest. It is a rare childhood ailment, with only a few cases reported worldwide that are not associated with Hand-Foot-Mouth Disease. The first case of onychomadesis diagnosed in Saudi Arabia is presented. A four-year-old girl was clinically diagnosed with the disease. She had no recent history of medication use or trauma, nor a history of periungual dermatitis. Management was conservative. At the 4-month follow-up visit, the damaged nails had improved.

Keywords: *Onychomadesis, rare disease, dermatological disorder, Saudi Arabia.*

INTRODUCTION

Onychomadesis is somewhat uncommon. Most cases recorded so far are idiopathic. Additionally, there are several significant generalized diseases or inherited types to consider, such as Hand-Foot-and-Mouth Disease (HFMD), Kawasaki Disease, chemotherapy and radiation, nutritional deficiencies, ectodermal dysplasias, and epidermolysis bullosa [1-5]. Nail matrix arrest and shedding have been linked to a wide range of pharmacological exposures and diseases, including infections, and can cause various alterations. In 2008 182 cases were reported in Spain [6, 7], with all cases classified as onychomadesis if a child presented with nail loss without prior trauma or systemic illness, and some cases were associated with HFMD [8, 9]. Only four cases in children aged five and older were documented out of the total reported cases in Spain. Our case follows a similar pattern but does not have a history of HFMD.

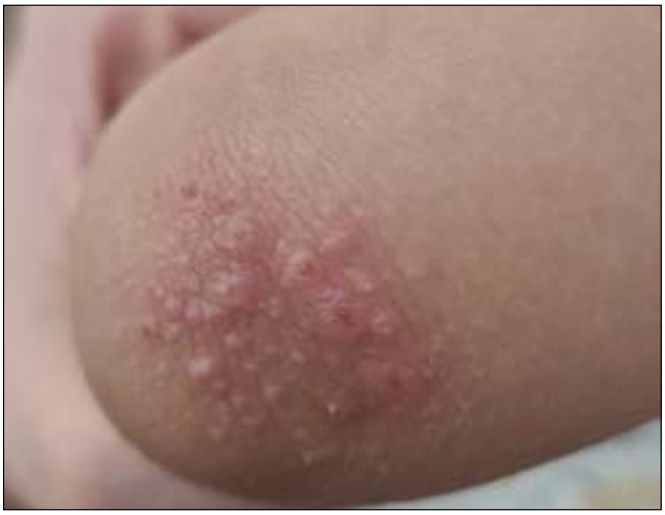

Fig. (1): Blisters on Left Elbow.

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CASE REPORT

A 4-year-old Saudi child visited the family medicine clinic with nail abnormalities affecting every finger. She was otherwise healthy, with no co-morbidities except mild eczema. She is in kindergarten and has no recent history of medication use, periungual dermatitis, or trauma exposure. The girl had an upper respiratory tract infection (URTI), and a week later, her mother noticed blisters and itching on her left elbow (**Fig. 1**). About three weeks later, her mother observed a change in the color of her fingernails, which had turned from yellowish to reddish (**Fig. 2a** and **2b**). Subsequently,

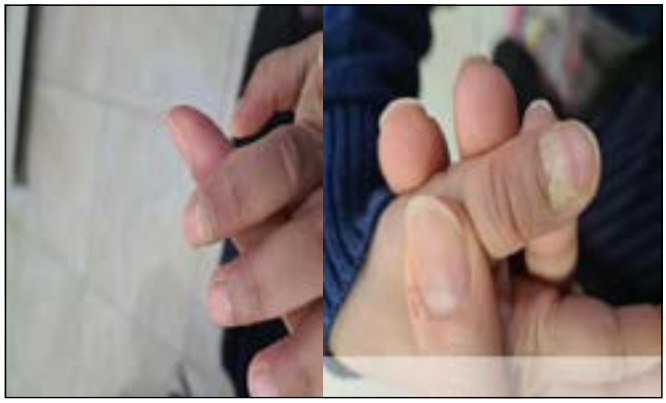

Fig. (2a & 2b): Discoloration of fingernails.

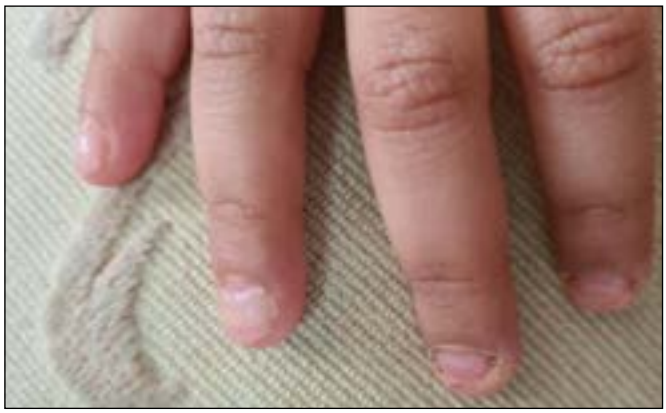

Fig. (3): Fingernails shedding.

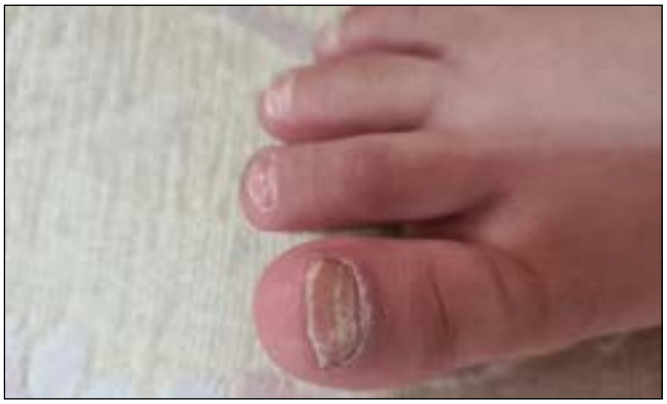

Fig. (4): Discoloration & shedding of toenails.

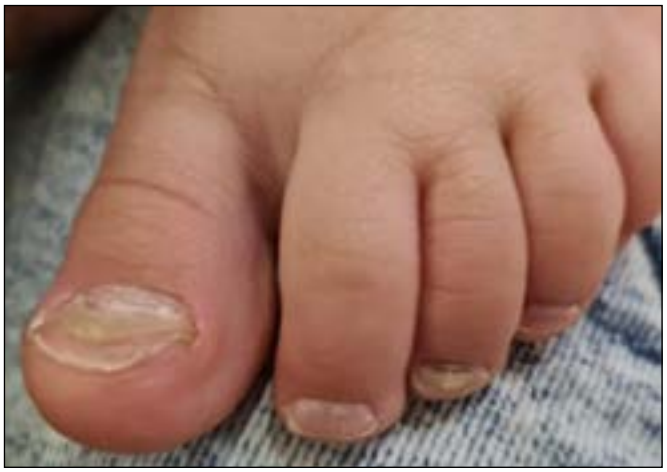

Fig. (5): Discoloration of first & third toenails.

her fingernails began shedding from the proximal to the distal end, accompanied by pain (**Fig. 3**). Two weeks later, her toenails started following the same pattern as her fingernails (**Fig. 4**). Healthy nails began to emerge without deformation after a month of follow-up. Her identical twin sister had the same problem, but only on the first and third toes (**Fig. 5**). No other family members had the same problem.

In this situation, a dermatologist was consulted to confirm the diagnosis. During a physical examination at the dermatological clinic, proximal separation of all fingernails and shallow transverse grooves on the right 2nd and 3rd toenails were found. Periungual lesions and subungual hyperkeratosis were not present. The cuticle appeared to be in decent shape. The toenails on the other toes were normal. No other dermatological issues or skin abnormalities were discovered. A biopsy of the nail matrix was not conducted. Based on the clinical findings, a diagnosis of sporadic onychomadesis of the toenails was made. Complete blood count, transaminases, blood urea nitrogen, creatinine, thyroid function tests, antinuclear antibody tests, and urinalysis were normal. The mother was reassured, advised on gentle nail care, and asked to observe any events that might suggest a precipitating cause. The affected toenail started to heal after 4 months.

DISCUSSION

Onychomadesis is a rare disorder in the pediatric age group, and cases can be either idiopathic or acquired [10]. HFMD viruses are considered risk factors for onychomadesis in children [8, 9]. Many cases of onychomadesis after HFMD have been reported worldwide, with the first case reported in Chicago, USA, in 2000 among five children [8]. Four children with onychomadesis were also reported in Liège, Belgium, in 2001 [8]. Outbreaks of onychomadesis caused by or associated with HFMD have been reported in countries like Spain [6, 7], Finland [11, 12] Taiwan [13], Greece [14], and Japan [15]. After the onset of an HFMD outbreak in Beijing in 2015 [16], an onychomadesis outbreak occurred in mainland China, Hangzhou in 2016 [15], with 43.1% of HFMD cases suffering from onychomadesis between the 3rd and 8th week after the outbreak.

Various medical conditions can cause onychomadesis, such as severe systemic diseases, nutritional deficiencies, trauma, periungual dermatitis, chemotherapy, fever, drug ingestion, and infection [7]. Fever, infection, systemic disease, or drug exposure can lead to nail matrix arrest, explained by inflammation in the periungual and matrix regions, inhibition of cellular proliferation, alteration in the quality of the nail plate, and nerve injury or dysfunction [8]. The differential diagnosis includes Beau's lines, which are transverse depressions in the nail plate considered a milder type of onychomadesis, and retronychia, which is the proximal ingrowth of the nail plate into the central surface of the proximal nail fold.

Onychomadesis is usually minor and self-limiting, without any specific treatment, but a cautious approach to management is advised, with any underlying causes treated and supportive care provided. In our case, the patient had a URTI one week before she started to experience changes in the color of her fingernails (from yellowish to brown).

To our knowledge, no case of onychomadesis with or without HFMD has been previously reported in Saudi Arabia. This first case of onychomadesis occurred in a 4-year-old female who presented to the family medicine clinic. Onychomadesis is typically mild and self-limited and does not require any specific treatment other than treating the underlying causes if present and providing supportive care. Spontaneous nail regrowth usually occurs in children within 12 weeks or even less, while in adults, it takes about 12 weeks but can happen faster in children.

CONCLUSION

Onychomadesis is a rare nail disorder in children, often either idiopathic or linked to Hand-foot-and-mouth disease (HFMD) viruses. Cases have been reported globally, with notable outbreaks in various countries. Besides HFMD, other factors like severe systemic diseases, nutritional deficiencies, trauma, periungual

dermatitis, chemotherapy, fever, drug ingestion, and infection can also cause onychomadesis. Mechanisms include inflammation, inhibition of cellular growth, nail plate quality alteration, and nerve injury. It's important to differentiate from similar conditions like Beau's lines and retronychia. Typically, onychomadesis resolves on its own within 12 weeks, with no specific treatment required beyond managing underlying causes and providing supportive care. A recent case in Saudi Arabia, involving a 4-year-old girl who developed onychomadesis after a respiratory infection, is the first reported instance in the country.

CONSENT FOR PUBLICATION

Written informed consent was taken from the parents of the patient.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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AUTHORS' CONTRIBUTION

All the authors contributed equally to the publication of this article.

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