Pediatric Nail Diseases: Clinical Pearls

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This article highlights pearls shared during a unique and enlightening lecture by Antonella Tosti, MD, a professor at the University of Miami Health System, Florida, on the presentation and management of common pediatric nail diseases. These clinical pearls are shared to help deliver utmost care to our pediatric patients presenting with nail pathology and may help shed light on the management of pediatric nail diseases.

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Our dermatology department recently sponsored a pediatric dermatology lecture series for the pediatric residency program. Within this series, Antonella Tosti, MD, a professor at the University of Miami Health System, Florida, and a renowned expert in nail disorders and allergic contact dermatitis, presented her clinical expertise on the presentation and management of common pediatric nail diseases. This article highlights pearls from her unique and enlightening lecture.

Pearl: Hand-foot-and-mouth disease is a recognized trigger for onychomadesis

An arrest in nail matrix activity is responsible for onychomadesis, or shedding of the nail. Its presentation in children can be further divided based upon the degree of involvement. If a few nails are affected, trauma should be implicated. In contrast, if all nails are involved, a systemic etiology should be suspected. Hand-foot-and-mouth disease (HFMD) has been recognized as a trigger for onychomadesis in school-aged children. Onychomadesis presents with characteristic proximal nail detachment (Figure 1). The association of HFMD with onychomadesis and Beau lines was first reported in 2000. Five patients who resided within close proximity and shared a physician-diagnosed case of HFMD presented with representative nail findings 4 weeks after illness.[1] Hypotheses for these changes include viral-induced nail pathology, inflammation from cutaneous lesions of HFMD, and systemic effects from the disease.[2] Given the prevalence of HFMD and benign outcome, clinicians should be cognizant of this unique cutaneous manifestation.

Pearl: Management of pediatric melanonychia can take a wait-and-see approach

Melanonychia is the presence of a longitudinal brown-black band extending from the proximal nail fold. The cause of melanonychia can be due to either activation or hyperplasia. Activation is the less common etiology in children; however, if present,

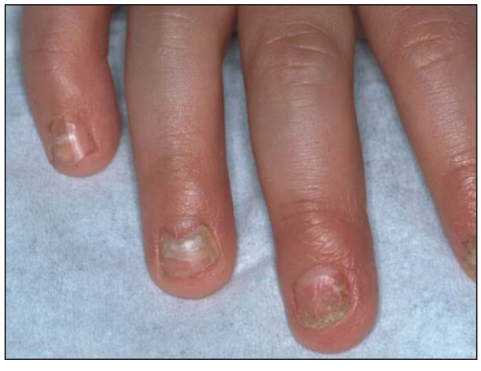

Figure 1. Proximal nail detachment of onychomadesis.

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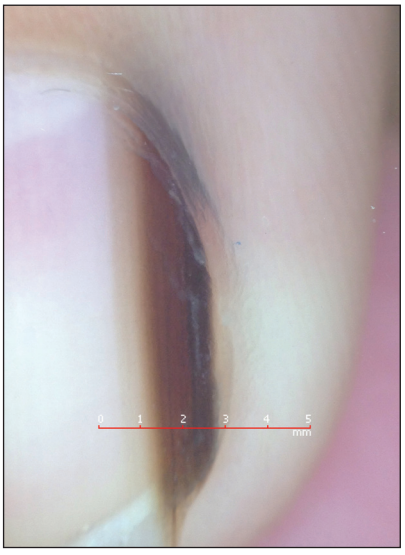

Figure 2. Melanonychia due to a junctional nevus on the thumb.

activation can be due to Laugier-Hunziker syndrome or trauma such as onychotillomania. Melanonychia in children usually is the result of hyperplasia of melanocytes and can manifest as a lentigo, nevus, or more rarely melanoma. Nail matrix nevi are typically exhibited on the fingernails, particularly the thumb, and frequently are junctional nevi (Figure 2). Spontaneous fading of nevi is expected with time due to decreased melanin production. Therapeutic options for melanonychia include regular clinical monitoring, biopsy, or excision. Dr. Tosti explained that one must be wary when pursuing a biopsy, as it can result in a false-negative finding due to missed pathology. If clinically indicated, a shave biopsy of the nail matrix can be performed to best analyze the lesion. She noted that if more than 3 mm of the matrix is removed, a resultant scar will ensue. Conservative management is recommended given the indolent clinical behavior of the majority of cases of melanonychia in children.[3]

Pearl: Congenital hypertrophy of the lateral nail folds can be treated with tape

Congenital hypertrophy of the lateral nail folds is relatively common in children and normally improves with age. Koilonychia may also occur simultaneously and can be viewed as a physiologic process in this age group. The etiology of the underlying disorder is due to anomalous periungual soft-tissue changes of the bilateral halluces; the resulting overgrowth can partially cover the nail plate. Although usually a self-limiting condition, the changes can cause inflammation and discomfort due to an ingrown nail.[4] Dr. Tosti advised that by simply taping and retracting the bilateral overgrowth, the condition can be more readily resolved. This simple treatment can be demonstrated in the office and subsequently performed at home.

Pearl: Onychomycosis is uncommon in children

Onychomycosis occurs in less than 1% of children.[5] Several factors are responsible for this decreased prevalence. More rapid nail growth and smaller nail surface area decreases the ability of the fungi to penetrate the nail plate.[6] Furthermore, children have a diminished rate of tinea pedis, leading to less neighboring infection. When onychomycosis does affect this patient population, it commonly presents as distal subungual onychomycosis and favors the fingernails over the toenails. Treatment options usually parallel those of the adult population; however, all medications for children are considered off-label use by the US Food and Drug Administration. Dr. Tosti explained that oral granules of terbinafine can be sprinkled on food to help with pediatric ingestion. Topical therapies should also be considered; children usually respond better than their adult counterparts due to their thinner nails, which grant enhanced drug delivery and penetration.[6]

Pearl: Acute paronychia can be due to nail-biting and sucking

Acute paronychia is inflammation of the proximal nail fold. In children, it frequently is a result of mixed flora induced by nail-biting and sucking. Management involves culturing the affected lesions and is effectively treated with warm soaks alone. Dr. Tosti highlighted that *Candida* in the subungual space is a common colonizer and is typically self-limiting in nature if isolated. *Candida* can be cultured more readily in premature infants, immunosuppressed patients, and those with chronic mucocutaneous candidiasis. Patients with chronic mucocutaneous candidiasis can exhibit periungual inflammation involving several digits. The differential can include nail psoriasis, as both can demonstrate dystrophic changes. The differential for localized paronychia includes herpetic whitlow and can manifest as vesicles under the proximal nail fold.

Final Thoughts

These clinical pearls are shared to help deliver utmost care to our pediatric patients presenting with nail pathology. For example, a child exhibiting melanonychia can cause alarm due to the possibility of underlying melanoma; given the rarity of neoplasia in these patients, a conservative approach is favored to help avoid unnecessary biopsies and

subsequent scarring. Similarly, it is important to be aware of the common colonizers of the subungual area, particularly *Candida*, to avoid unessential medications with potential side effects. The examples demonstrated help shed light on the management of pediatric nail diseases.

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