IMAGES IN CLINICAL PRACTICE

IT LOOKS LIKE A SCRATCH ON THE TOENAIL

Jacinta Mendes, Nuno Vilas Boas, Sara Diogo Santos.
Department of Pediatrics, Centro Hospitalar do Oeste - Caldas da Rainha, Caldas da Rainha, Portugal.

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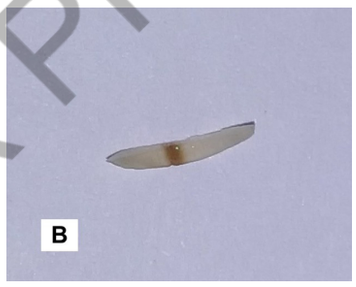
A 6-year-old caucasian boy presented to a Pediatric appointment with a longitudinal and linear brown pigmentation in his right hallux fingernail (figure 1A). The nail alteration extends from eponiquium to the free edge of the nail plate (figure 1B). This asymptomatic alteration appeared about ten months before and had not changed in thickness, texture, or pigment intensity. There were no other alterations on physical examination including in the remaining nails. The boy had a history of short stature due to growth hormone deficiency and was under growth hormone therapy since the age of four years. No prior nevus at the affected nail was observed. The child had no history of trauma, irradiation, drugs, or other causes of melanocytic activation. There was no personal or family history of melanoma.

Figure 1: (A) Rigth hallux fingernail of a 6-year-old boy with longitudinal nail pigmentation.

Figure 1: (B) Fragment of the free edge of the nail plate with a linear pigment deposition.



What is the most likely diagnosis?

Longitudinal melanonychia also designated melanonychia striata is a melanin-derived brown or black pigmentation along the nail.[1,3] The pigmented streak is caused by a melanin deposition that runs from the proximal nail fold to the distal part of the nail plate.[2,7,9]

It looks like a dark band within the nail plate from the proximal boarder up to the distal margin.

Longitudinal melanonychia can affect a single nail, as in the clinical case presented, or multiple nails which is less frequent.[2] This alteration is often located on a fingernail, and the thumb is the most common site of occurrence.[3,6-8,10] On feet generally, as it is more prone to trauma, the hallux is more frequently affected than the other toes.[7] But it can occur regardless of the existence of trauma, as seen in the clinical case presented.

In general, longitudinal melanonychia result from an increased activity of melanocytes in the nail matrix, with subsequent increased synthesis of melanin in the nail matrix, and deposition in the nail plate.[2,7] Causes of longitudinal melanonychia are related to melanocytic activation and include ethnic melanonychia in dark-skinned individuals, pregnancy, chronic local trauma, infections, graft-vs-host disease, hemochromatosis, porphyria, alkaptonuria, Peutz-Jeghers and Laugier-Hunziker syndromes, dermatological disorders, endocrine disorders and certain medications.[6,7]

Longitudinal melanonychia can also result from melanocytic hyperplasia, which seems to be more frequent in children due to a melanocytic nevus or lentigo affecting the nail matrix.[4,7,10] In the pediatric population a study of 40 cases showed that benign melanocytic hyperplasia (lentigo or nevus) was the cause of 77.5% of cases of longitudinal melanonychia and of 85% of cases in the subset of white patients.[4]

The differential diagnosis includes exogenous discoloration, splinter hemorrhages, longitudinal erythronychia, subungual hematoma, fungal

Address for Correspondance: Jacinta Mendes Serviço de Pediatria, Centro Hospitalar do Oeste, Rua Diário de Notícias, 2500-176 Caldas da Rainha, Portugal

Email: jacintamendes@gmail.com

melanonychia, onychomatricoma, transverse orange-brown chromonychia, atypical melanocytic hyperplasia, and melanoma of the nail matrix.[3,6,7]

The prevalence of longitudinal melanonychia varies significantly, ranging from 1.4% in fair-skinned populations, where it is rare, to 77% in dark-skinned populations.[1] No differences in sex incidence had been reported.[10] This case is atypical because this condition is rare in caucasian individuals and even more in children.[6,7] So in children diagnosis and management criteria of longitudinal melanonychia are even more poorly defined.[10]

The diagnosis is mainly clinical and usually done by a dermatologist.[7] In the absence of concerning clinical features such as a pigment band wider than 3 mm, rapid growth, increasing darkening of the lesion, pigment variegation, periungual pigmentation (Hutchinson sign), nail plate dystrophy, or a family history of melanoma or dysplastic nevus—biopsy and histopathologic examination should be avoided to prevent the risk of permanent nail dystrophy. [1,3,5,7] For this reason, pediatricians should be familiar with this diagnosis and aware of the importance of referring for evaluation by a dermatologist.

In most cases, longitudinal melanonychia is a benign condition, particularly in children, and subungual melanoma is exceptionally rare in this age group. [1,2,4] In a study involving 40 children with melanonychia, no malignant lesions were detected upon histologic examination.[4] Because of its typically indolent and non-aggressive clinical course, nearly all cases can be managed conservatively. Most researchers recommend a watchful waiting approach, as was the case in our situation, which continues to be monitored clinically.[1,3,4,7,8]

Spontaneous regression of longitudinal melanonychia, despite having been described, is rare and unique to children.[2,8,10]

Extended follow-up is recommended once melanoma of the nail apparatus, in adults with a previous history of longitudinal melanonychia beginning in childhood, has been reported.[1,3,4,7,10]

Compliance with ethical standards

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