Case Reports

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Transient neonatal hyperpigmentation of the proximal nail fold in a Chinese infant: a case report

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Abstract

Cutaneous alterations are common in neonates and usually occur in the first few days of life. Most of these are transient and benign, appearing as physiological responses to birth. Skin pigmentation disorders are considered transitory dermatoses of newborn infants. Nail pigmentation manifests as asymptomatic brown to bluish-black skin pigmentation over the fingers and toes in newborns. Hyperpigmentation of the distal phalanx of both hands and feet is commonly found in dark-skinned newborns, but it is rare in fair-skinned newborns and East Asian populations. We herein describe a Chinese infant with transient neonatal hyperpigmentation of the proximal nail fold.

Keywords

Hyperpigmentation, neonatal, nail disorder, case report, East Asia, nonintervention

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Introduction

Because of differences in structure and composition, newborn skin is more sensitive, permeable, and vulnerable than adult skin.[1] Cutaneous alterations are relatively common in the neonatal period. Newborn skin displays a variety of physiological and benign skin abnormalities in the first few months after birth, such as miliaria, sebaceous hyperplasia, and sebaceous gland hyperplasia.[1,2] In newborns, transient hyperpigmentation can be found on the

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distal phalanx of both hands and feet during the early months of life and is a common feature of dark-skinned newborns. However, such hyperpigmentation is rare in fair-skinned newborns and East Asian populations.[3,4] We herein describe a Chinese infant with transient neonatal hyperpigmentation of the proximal nail fold.

Case report

A 28-day-old male Chinese infant was presented to our hospital for evaluation of periungual hyperpigmentation. His parents reported that his fingers and toes had dark brown pigmentation around the nails with no obvious changes. The infant had been born full-term with a normal birth weight. A dermatologic examination showed clearly demarcated brownish pigmentation of the fingernails and toenails (Figure 1). No hyperpigmentation of the armpits or genitals was observed. The infant slept well and received an adequate milk supply. With the exception of the nail fold hyperpigmentation, the infant was asymptomatic. He had no family history of hereditary skin disorders and no special medical history before or during the perinatal period. Based on the typical presentation of the well-circumscribed lesions, we did not perform a skin biopsy of the hyperpigmented regions and clinically diagnosed the infant with transient neonatal hyperpigmentation of the proximal nail fold. The hyperpigmentation gradually disappeared during the following 6 months and finally disappeared. The reporting of this study conforms to the CARE guidelines.[5]

Discussion

Transient hyperpigmentation of the proximal nail fold in newborns is also known as

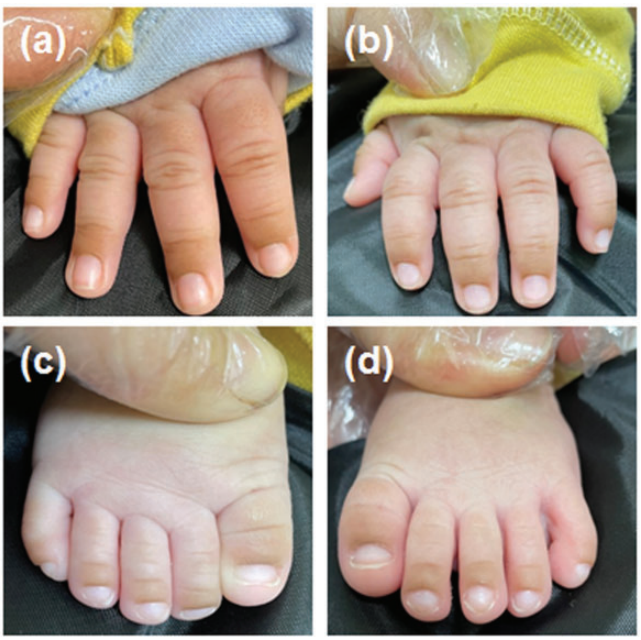

Figure 1. Clinical manifestations of the infant's fingers and toes. Symmetrical light brown hyperpigmentation was present on all fingers of the (a) left and (b) right hand. Symmetrical light brown hyperpigmentation was also present on all toes of the (c) left and (d) right foot.

hyperpigmentation of the proximal nail fold, isolated melanocytic hyperpigmentation of the distal digits, and periungual hyperpigmentation. The diagnosis may be confused with several hereditary skin disorders such as neurofibromatosis, Noonan syndrome with multiple lentigines, and hereditary symmetrical dyschromatosis.[6] In this case, the pigmentation was limited to the back of the fingers. No linear or patchy lesions are seen on the trunk or limbs of affected infants. Importantly, the pigmentation gradually fades and disappears with age.

Hyperpigmentation of the proximal nail fold is considered a prominent feature of dark-skinned newborns between 1 and 6 months of age. However, this condition is uncommon in patients of East Asian populations.[4] It was previously considered that hyperpigmentation of the proximal fold did not occur in the East Asian population. The only such case was reported by Kawai et al.,[7] who described a 1-month-old female Japanese infant with hyperpigmentation of the proximal nail fold.

The nail plate is usually semitransparent because of a lack of melanin, the substance responsible for skin pigmentation. Melanonychia is usually a benign condition characterized by melanin deposition in the nail plate.[8] Melanocytes are melanin-producing cells that typically lie dormant in the proximal nail matrix.[9] Upon activation, melanocytes do not increase in number but instead increase the production and distribution of melanin in the nail. Indeed, histological analysis of pigmented lesions of the nail unit shows an increased amount of melanin but no increase in the number of melanocytes.[10]

The cause of hyperpigmentation of the proximal nail fold is not quite clear. Interestingly, Uyangoda et al.[11] described an infant with familial glucocorticoid deficiency who presented with hyperpigmentation. Dysregulation of endocrine hormones often leads to clinically significant dermatologic disease.[12] Indeed, adrenocorticotrophic hormone excess appears in adrenal insufficiency, which occurs in newborns with congenital adrenal hyperplasia.[13] Adrenocorticotrophic hormone can reportedly cause hyperpigmentation of the skin and oral mucosa.[14] In our case, the infant had no adrenal or thyroid disorders. However, it could also be speculated that an endocrine imbalance after birth may play a role in hyperpigmentation of infancy. Because such imbalances gradually improve over several months, the hyperpigmentation disappears without medical intervention.

Ethics and consent statements

Ethical approval was obtained from the Research Ethics Committee of the Fifth Affiliated Hospital of Southern Medical University. The infant's parents provided written informed consent and agreed to the use of his medical records and images for publication of this case report.

Declaration of conflicting interest

The authors declare that there is no conflict of interest.

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