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Interest of Dermoscopy for the Diagnosis of Onychopathy in an Infant

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Authors' contributions

This work was carried out in collaboration among all authors. Author CAK designed the case report and wrote the first draft of the manuscript. Author MA managed the analyses of the study. Authors NI and KS managed the literature searches. All authors read and approved the final manuscript.

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Case Report

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ABSTRACT

Aim: Onychomycosis is a rare pathology in infants which constitutes 15.5% of onychodystrophies in children, especially those with Down syndrome and the immunocompromised. Dermosocpy is an innocuous examination allowing to guide the clinical diagnosis and to avoid invasive examinations.
Presentation of Case: 5-month-old infant presents with thickening of the thumbnail of the left hand with xanthonychia evolving for 20 days without notion of trauma. On clinical examination, xantho-pachyonychia of the thumbnail of the left hand was noted reaching the latero-distal part with subungual hyperkeratosis and peronyxis. Dermoscopy showed yellowish chromonychia, longitudinal striae, subungual hyperkeratosis with jagged edges. The mycological direct examination and culture was in favor of a *Candida albicans* infection The patient was put on an antifungal cream with improvement after 3 months.
Discussion: The rarity of onychomycosis in infants can be attributed to several factors such as the difference in the structure of the nail plate, less exposure to trauma and rapidity of nail regrowth. The average age is 8 months, the sex ratio at 0.98 and the preferential location is the fingernails.

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Clinically the nail involvement is of the disto-lateral type with subungual hyperkeratosis and peronyxis. Dermatoscopy is a quick tool showing chromonychia, longitudinal streaks, subungual hyperkeratosis producing a “ruined appearance”, distal onycholysis with jagged edges and linear hemorrhages. Infant onychomycosis is most often of candidal origin (*C. albicans*). Topical antifungals (ciclopirox) are preferred.

Conclusion: This case is being reported to highlight the important role of dermoscopy in the diagnosis of onychomycosis and thus prevent unnecessary biopsies.

Keywords: Infant; onychomycosis; dermoscopy; albicans; peronyxis; pachyonychia; chromonychia.

1. INTRODUCTION

Onychomycosis occurred as age-related infections. It is a rare pathology in infants (incidence less than 0.3%) and which constitutes 15.5% of onychodystrophies in children [1], especially those with Down syndrome and the immunocompromised [2]. The differential diagnosis arises with psoriasis, atopic dermatitis, lichen planus, ichthyosis. Dermoscopy is cost-effective and non-invasive, allowing clinicians to discern microscopic features of onychomycosis and fungal melanonychia.

We are going to study the epidemio-clinical characteristics of infant onychomycosis as well as the help of dermoscopy for the diagnosis through a clinical case.

2. CASE REPORT

A 5-month-old infant, with no previous medical history, consulted for thickening of the thumbnail of the left hand with xanthonychia evolving for 20 days. There is notion of trauma during nail trimming, or thumb sucking.Clinical examination showed xantho-pachyonychia of the thumbnail of the left hand reaching the latero-distal part with subungual hyperkeratosis and peronyxis (Fig. 1). There was no involvement of the other nails of the hands and feet, no mucosal lesions and the rest of the general examination was unremarkable. Dermoscopy showed yellowish chromonychia, longitudinal striae, subungual hyperkeratosis with jagged edges (Figs. 2 and 3). This dermoscopic aspect was in favor of a mycotic infection but the parents were worried and wanted to do a mycological examination.

The direct mycological examination with culture showed more than 50 colonies of *Candida albicans*. The patient was put on an antifungal cream (ciclopirox olamine) with improvement after 3 months of treatment (Fig. 4).

Fig. 1. Xantho-pachyonychia of the thumbnail of the left hand reaching the latero-distal part with subungual hyperkeratosis and peronyxis

Fig. 2. Dermoscopy showed yellowish chromonychia with longitudinal striae

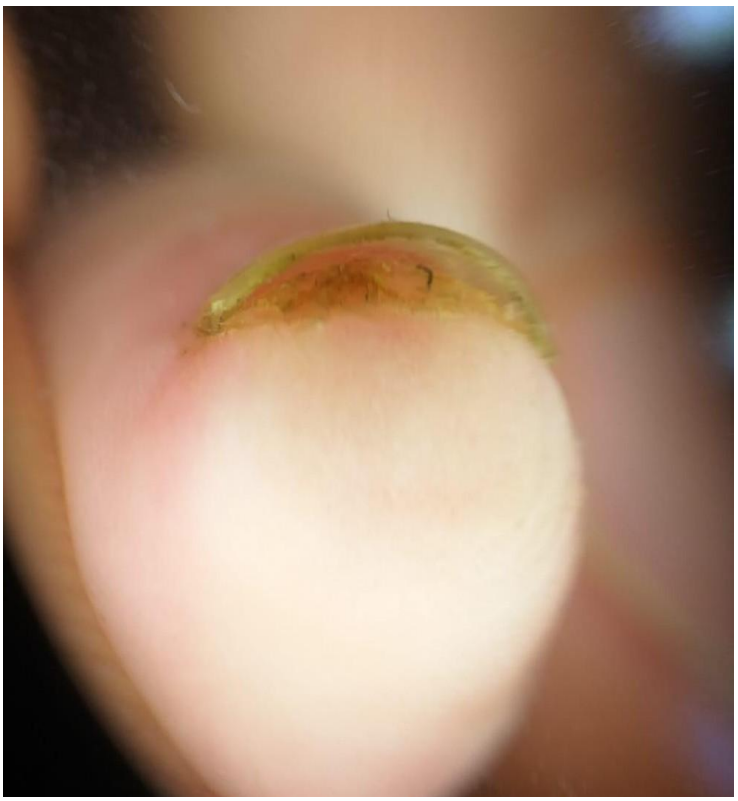

Fig. 3. Dermoscopy showed subungual hyperkeratosis with jagged edges

Fig. 4. Improvement after 3 months of treatment

3. DISCUSSION

Onychomycosis in infants is considered rare until now. This rarity can be attributed to several factors such as the difference in the structure of the nail plate, less exposure to trauma, the rapidity of nail regrowth and the absence of circulatory disorders [3].

The contributing factors are difficult to determine: finger sucking, exogenous contamination from parents, endogenous contamination from another infected site such as the skin, etc [4]. The average age is 8 months (1 month—1 year), the sex ratio at 0.98, the preferential location is the fingernails with possible simultaneous involvement of several fingers or toes [5]. Clinically the nail involvement is of the disto-lateral type with subungual hyperkeratosis and peronyxis [6].

Dermatoscopy is a quick and easy tool showing chromonychia in all patients (100% yellowish), longitudinal streaks, subungual hyperkeratosis producing a "ruined appearance", distal onycholysis with jagged edges and linear hemorrhages [7].

Infant onychomycosis is most often of candidal origin (*C. albicans*) while dermatophyte onychomycosis (*T. rubrum* +++, *T. violaceum*++) predominates in children aged 11-14 years [8]. It is advisable to systematically search for a source of infection, in particular ringworm, interdigito-plantar involvement, familial dermatomycosis, etc.

Systemic antifungals only have Marketing Authorization from the age of 16, topical antifungals (ciclopirox) are preferred [9]. A therapeutic abstention is possible given the faster growth of the nail [10].

4. CONCLUSION

Infant onychomycosis is rare but with a markedly increasing prevalence. It is imperative to search for the source of infection and mycological confirmation allows early and adequate treatment.

CONSENT

The parents gave informed consent prior to their son's inclusion in the case report.

ETHICAL APPROVAL

The authors have obtained all necessary ethical approval from suitable Institutional or State or National or International Committee

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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