

Nail Involvement in Pediatric Alopecia Areata: Clinical and Onychoscopic Features: A Serie of 42 Cases

B. Amine^{1*}, Fz. El Fetoiki¹, F. Hali¹, S. Chiheb¹

¹Department of Dermatology and Veneorology, CHU Ibn Rochd, Casablanca, Morocco

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*Corresponding author: B. Amine

Department of Dermatology and Veneorology, CHU Ibn Rochd, Casablanca, Morocco

Abstract

Case Report

Background: Nail involvement in alopecia areata [AA] is not uncommon and may present with various clinical and dermoscopic patterns. In children, nail changes are frequently underrecognized and may have prognostic implications. **Objective:** To evaluate the clinical and dermoscopic characteristics of nail involvement in pediatric alopecia areata. **Methods:** A retrospective descriptive study was conducted including 42 children diagnosed with alopecia areata in a pediatric dermatology department. Diagnosis was based on clinical examination, medical history, and negative mycological testing. All patients underwent dermoscopic evaluation. Demographic data, clinical type of AA, presence of nail involvement, and specific clinical and dermoscopic nail findings were recorded. **Results:** Nail involvement was observed in 18 out of 42 patients [42.8%], with a mean age of 11 years and a female predominance. Family history of AA was present in three patients. Nail abnormalities were previously unrecognized in 16 patients. Nail involvement was concomitant with scalp lesions in five cases. Twelve patients had moderate AA, while six presented severe forms. Fingernails were predominantly affected [n=16]. Clinically, findings included onychorrhexis [n=6], pitting [n=6], leukonychia [n=4], trachyonychia [n=3], onycholysis [n=2], melanonychia [n=2], koilonychia [n=1], onychomadesis [n=1], and Beau's lines [n=1]. Dermoscopic examination revealed fine pitting [n=14], longitudinal ridging [n=6], nail plate thinning [n=5], distal onycholysis [n=6], dilation of distal nail bed capillaries [n=6], cuticle thickening [n=4], periungual keratosis [n=3], and melanonychia [n=2]. **Conclusion:** Nail involvement in pediatric alopecia areata is common and often underdiagnosed. Dermoscopy enhances detection of subtle nail changes and may provide prognostic information. Combined clinical and dermoscopic evaluation should be systematically performed in children with AA.

Keywords: Alopecia areata; pediatric dermatology; nail involvement; dermoscopy; trachyonychia; nail pitting.

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INTRODUCTION

Alopecia areata [AA] is a chronic immune-mediated disorder characterized by non-scarring hair loss. Although the scalp is most commonly affected, nail involvement is reported in 10–50% of cases and is more frequent in severe forms of the disease. In children, nail changes are often subtle and underrecognized, yet they may indicate more extensive disease and poorer prognosis. Dermoscopy [onychoscopy] enhances the detection of subtle nail abnormalities and allows early assessment of nail matrix involvement. This study aims to describe the clinical and dermoscopic characteristics of nail involvement in a pediatric cohort with alopecia areata and explore its relationship with disease severity.

MATERIALS AND METHODS

A retrospective descriptive study was conducted including 42 children diagnosed with alopecia

areata and followed in the pediatric dermatology department. The diagnosis of alopecia areata was established based on clinical examination, medical history, and negative mycological testing to exclude fungal infection.

All patients underwent dermoscopic examination of the scalp and nails using a handheld dermoscope. The examination allowed assessment of both hair and nail structures in order to detect subtle abnormalities.

For each patient, the following data were collected: age, sex, family history of alopecia areata, clinical form and severity of alopecia areata, presence or absence of nail involvement, clinical nail findings, and dermoscopic nail findings.

Disease severity was classified as moderate or severe according to the extent of scalp involvement.

RESULTS

Among the 42 children included in the study, 18 patients [42.8%] presented nail involvement. The mean age of these patients was 11 years, with a predominance of female patients. A positive family history of alopecia areata was reported in three cases.

Nail abnormalities had not been previously recognized in 16 patients and were identified during dermatological examination. Nail involvement occurred concomitantly with scalp alopecia in five cases. Regarding disease severity, twelve patients with nail abnormalities had moderate alopecia areata, whereas six presented severe forms.

Fingernails were predominantly affected, with involvement observed in 16 patients

Clinically, the most frequently observed nail abnormalities were onychorrhexis [n=6] and nail pitting [n=6], followed by leukonychia [n=4], trachyonychia [n=3], and onycholysis [n=2]. Less frequent findings included melanonychia [n=2], koilonychia [n=1], onychomadesis [n=1], and Beau's lines [n=1].

Dermoscopic examination revealed several characteristic abnormalities. Fine nail pitting was the most frequent dermoscopic finding [n=14]. Other observations included longitudinal ridging [n=6], distal onycholysis [n=6], dilation of distal nail bed capillaries [n=6], nail plate thinning [n=5], cuticle thickening [n=4], periungual keratosis [n=3], and melanonychia [n=2]. Dermoscopy allowed the identification of subtle nail abnormalities that were not visible on naked-eye examination in several cases.

DISCUSSION

Nail involvement in pediatric alopecia areata is relatively frequent but remains underrecognized in routine clinical practice. In the present series, nail abnormalities were observed in nearly half of the patients, and most of these changes had not been previously detected, highlighting the importance of systematic nail examination in children with alopecia areata [1,2].

Nail pitting is considered the most characteristic feature of alopecia areata and reflects inflammatory involvement of the nail matrix [3,4]. Other abnormalities such as trachyonychia and onychorrhexis may indicate chronic matrix damage. These alterations result from disrupted keratinization of the nail plate secondary to inflammatory processes affecting the proximal nail matrix [3,5].

In our study, distal onycholysis, nail plate thinning, and dilation of distal nail bed capillaries were

prominent dermoscopic findings. These features are less frequently emphasized in the literature but may reflect underlying inflammatory changes in the nail unit [5,6].

The detection of nail abnormalities is clinically relevant because nail involvement has been associated with more extensive scalp disease and a poorer prognosis [2,7]. Although the number of patients in our study was limited, severe forms of alopecia areata appeared to be more frequently associated with nail changes.

Dermoscopy plays an important role in identifying subtle nail abnormalities that may not be visible on routine clinical examination. In particular, fine pitting and early matrix alterations can be detected more easily using dermoscopy [5,6]. Systematic dermoscopic evaluation of the nails should therefore be considered an integral part of the clinical assessment of children with alopecia areata.

CONCLUSION

Nail involvement in pediatric alopecia areata is common and frequently underestimated. Combined clinical and dermoscopic examination improves detection of nail abnormalities and may provide valuable prognostic information. Further large-scale studies are needed to clarify the correlation between nail involvement and severity of scalp disease.

Conflict of Interest

The authors declare no conflicts of interest.

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