

NAIL CHANGES IN MINIMAL ALOPECIA AREATA

Somaia F. Mahmoud, MD

Adel M. Kamal, MD

From the Department of Dermatology, Benha Faculty of Medicine, Zagazig University, Egypt.

ABSTRACT

Background

Nail involvement in alopecia areata is relatively common. The reported incidence ranged from 10 to 66%, and in another it was as low as 3.65%. Onychodystrophy generally is most common and severe in patients with extensive alopecia, but it has been reported with minimal hair loss. This work aimed at evaluating the types and the prevalence of nail changes occurring in the patchy type of alopecia areata with minimal hair loss.

Methods :

Eighty four patients with patchy type of alopecia areata of minimal hair loss were included in this study. Full clinical examination and pertinent laboratory investigations were done for them.

Results :

44.1% of patients presented with nail changes ; 36.84% had maturity onset and 59.25% had juvenile onset alopecia areata. 48.27% gave history of recurrence of alopecia areata. Fine pitting occurred in 32.43%, fine pitting with longitudinal ridging in 24.32%, longitudinal ridging alone in 8.11%, punctuate Leukonychia in 16.22%, Beau's lines in 10.81%, onycholysis and nail shedding in 5.41%, and reddening of the nail in 2.70% of patients.

Conclusion :

Nail changes are common in alopecia areata, occurring even in mild cases with minimal hair loss, being more with longer duration and recurrence. Children and adolescents are more prone to nail changes than adults. Diffuse fine pitting and longitudinal ridging are the commonest nail affection.

Introduction :

Alopecia areata (AA) is a tricopathy with an uncertain prognosis⁽¹⁾, which can occur at any age and

shows no sex predominance. It can affect all keratinizing skin adnexa, and the dystrophic changes of the nails are quite frequent. The most characteristic abnormality is uniform pitting of one or more nail plates⁽²⁾.

Onychodystrophy generally is most common and severe in patients with extensive alopecia^(3, 4), but it has been reported also with minimal hair loss⁽⁵⁾.

The aim of the present work is to evaluate the types and the prevalence of nail changes occurring in the patchy type of AA with minimal hair loss, with special reference to the age of onset (Juvenile and maturity), other clinical parameters, and possible associations.

Patients and Methods :

A prospective study of 84 patients with patchy type of AA of < 25% affection was carried during a nine months period (June 96 - February 97). Patients with other variants of AA and those on previous medications were excluded from the study. A complete personal and family history was noted for each patient with special reference to atopic manifestations (asthma, atopic dermatitis, hay fever), hypertension, and autoimmune diseases. The patients were examined thoroughly for their nail changes and for any other associated dermatoses or autoimmune disorders.

Pertinent laboratory investigations included : KOH preparation and fungal culture, complete blood count, Rh factor, anti DNA antibodies, antinuclear antibodies (ANA), blood chemistry for liver function tests, blood sugar, and thyroid function tests.

Results :

Of the 84 patients (57 males, 27 females), nail changes were found in 37 patients (44.1%), 22 males and 15 females.

Age : It ranged from 4 weeks - 58 years (mean, 26.7 y). The age of onset of AA was above 16 years in 57 patients (67.86%), 21 of them (36.84%) had nail changes ; and up to the age of 16 in 27 patients (32.14%), 16 of them (59.25%) had nail involvement.

Duration : The duration of AA ranged from 2 weeks - 6 years (mean, 8.9 m), and in patients with nail changes from 3 months - 6 years (mean, 16.2 m).

Recurrence : 29(34.52%) AA patients gave a history of recurrence of 1 - 10 times, 14(48.27%) of

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Reprint requests : Somaia F. Mahmoud, MD. 4 Nasser Khesro St. Madinat Nasr (7th) zone, Cairo, A. R. of Egypt

them were with nail changes.

Number of patches : 1 - 10 small patches (mean, 2.6) affected the scalp in 59 patients (70.24%), scalp and face (25,29.76%). In patients with nail changes, 26(70.27%) had scalp AA, and 11(29.73%) had scalp and face AA.

Clinical associations : 26(30.95%) had other diseases (14 atopic manifestations, 6 psoriasis, 2 vitiligo, 3 diabetes mellitus and hypertension, and one with thyrotoxicosis). Of the 26 patients, 12(46.15%) had nail changes associated with atopic manifestations in 9, and psoriasis in 3.

Family history : Of first grade relatives was positive for 49(58.33%) patients, 7 autoimmune diseases (psoriasis, AA, vitiligo), 13 atopic manifestations, 15 hypertension, 11 hypertension and diabetes mellitus, and 3 with diabetes mellitus. Of the 49 patients 23(46.94%) had nail changes, 6 with a family history of atopic manifestations, 5 autoimmune diseases (4 AA, 1 psoriasis), 6 hypertension, 4 hypertension with diabetes mellitus, and 2 diabetes mellitus.

Ikeda's classification : Table (1) shows the distribution of AA patients and those with nail changes.

affected most of the finger and toe nails.

Twelve (32.43%) showed isolated nail changes, and 25(67.57%) had the majority of their nails involved.

One patient had longitudinal ridging and severe shortening of nail plates of the fingers, and 2 young adults had longitudinal ridging alone in their nails.

The 9 patients with mixed nail affection had history of recurrent AA ranging from 2 months - 6 years (mean, 24m). Most of the patients were not aware of their nail changes and they could not relate their onset with the onset of AA.

Laboratory results : KOH and mycological culture were + ve in two patients who presented also with onychomycosis of the big toe, and -ve for the two patients with repeated onycholysis and nail shedding. The latter condition started long time before the occurrence of AA. Thyroid function tests were elevated in one patient, 3 had high fasting blood sugar, 5 had eosinophilia and they presented with atopic manifestations. Results for Rh factor, ANA, and anti DNA antibodies were negative.

Discussion :

Nail involvement in AA is relatively common,

Table (1) :The distribution of AA patients and those with nail changes according to Ikeda's classification

Ikeda's classification	A.A. patients (84)	Patients with nail changes (37)
Common	46 (54.76%)	15 (40.54%)
Prehypertensive	16 (19.05%)	10 (27.03%)
Atopic	14 (16.67%)	09 (24.32%)
Combined	08 (09.52%)	03 (8.11%)

Nail changes : Table (II) summarizes the nail changes found in the 37 patients. All had their finger nails involved, while 17(45.94%) had also toe nail affection, mostly fine pitting with longitudinal ridging, and punctate leukonychia. The latter af-

but an exact frequency can not be ascertained from the literature. The reported incidence ranged from 10% to 60% (3), but in another it was as low as (3.65%) (6). It sometimes involves the majority of the nails but isolated nail alteration is probably more

Table (11) : Types of nail changes according to their distribution

Nail changes	Finger nails	Associated toe nails
Fine pitting (32.43)	12	2
Fine pitting & longitudinal ridging (24.32)	9	7
Longitudinal ridging (8.11)	3	2
Leukonychia punctata (16.22)	6	6
Beau's lines (10.81)	4	-
Onycholysis & nail shedding (5.41)	2	-
Red nails (2.70)	1	-

frequent than is generally believed⁽⁵⁾. They usually develop simultaneously. Occasionally they precede or follow the onset of AA by months or years⁽⁷⁾. The changes are most often associated with extensive alopecia, alopecia totalis and alopecia universalis. They usually develop simultaneously. Occasionally they precede or follow the onset of AA by months or years⁽⁷⁾. The changes are most often associated with extensive alopecia, alopecia totalis and alopecia universalis⁽³⁾.

From the present work, male patients with AA outnumbered females. Mild nail alterations were quite frequent in the mild form of AA with minimal hair loss, and accounted for more than one third of the studies group. Such patients had also longer duration of AA with a history of recurrence in an appreciable number of them. A higher percentage of nail changes occurred with juvenile onset AA. Nail

alterations were not noticed by the patients, hence the onset could not be ascertained.

From the literature, nail changes in AA included : diffuse fine pitting (the most common pattern)⁽⁸⁾, colour changes in the nail plate, e.g. opaque, yellow, gray, or brown, longitudinal or transverse ridging of the nail plate, thinning or thickening of the nail plate⁽³⁾, severe shortening of the nail⁽²⁾, Koilonychia⁽⁹⁾, red or moth eaten discoloration of the lunula⁽¹⁰⁾, and punctate leukonychia^(2,11).

From the present study, diffuse fine pitting, longitudinal ridging, and punctate leukonychia were the commonest findings, with the majority of nails being affected. The pitting was uniform and shallow with a tendency to grid like orientation. This is in contrast to psoriasis in which pits commonly vary in size, depth, and shape, and are randomly distributed on the nail plate. One third of patients had iso-

lated nail changes. Toe nail alterations were less common than finger nails, and the element of trauma for the longitudinal ridging could not be excluded.

In leukonychia punctata no aetiological cause can be found and trauma is often suspected. It is usually limited to finger nails⁽²⁾. In the present study, toe nails were also affected in addition to the finger nails which negates the possibility that these findings represent coincidental idiopathic leukonychia.

Red colour changes are rare and may be seen as dusky erythematous discoloration of the lunula or of the proximal third of the nails^(12, 13), and it probably occurs in severe alopecia areata⁽¹⁴⁾. In this study, only one patient presented with red discoloration of the proximal finger nails. Her alopecia was not severe but it was of long duration with frequent recurrences.

With regard to Ikeda's classification, the common and prehypertensive types of AA were the most prevalent respectively in the studied group.

One third of AA patients had other disorders mostly atopic manifestations and psoriasis; approximately half of them manifested with nail changes

and had a family history of different atopic manifestation, autoimmune, and endocrinal disorders.

The severe forms of nail dystrophy were not detected which could be related to the milder form of the disease.

Conclusion : Nail changes are common in alopecia areata, occurring even in milder cases with minimal hair loss, being more with longer duration of AA and among those with recurrence. Children and adolescents are more prone to nail changes than adults. Diffuse fine pitting and longitudinal ridging are the commonest findings. Toe nail involvement is less common than finger nails and an element of trauma could not be excluded. Isolated nail changes are not uncommon in the milder form of AA. Most of the patients were either of the common or the prehypertensive type of AA. Severe forms of nail dystrophy were not detected which could be related to the milder form of the disease. More and severe forms may develop in future as they may follow the onset of AA after many months or years, and AA itself may progress to more severe forms of the disease.

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