

## Red Lunulae in Severe Alopecia Areata

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**The development of red nail lunulae has been extremely rarely described in alopecia areata. We observed 2 patients, a 30-year-old woman and a 61-year-old man, both suffering from severe alopecia areata, and having red lunulae. The colour changes, which developed a few weeks after the acute onset of hair loss, disappeared slowly, leaving horizontal fissures (Beau's lines). Key words: Nail changes, alopecia areata.**

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Nail changes in alopecia areata are common, reportedly ranging in frequency from 7% to 66% (1, 2, 3, 4). Most authors believe that the severity of the onychopathy is proportional to the severity of hair loss (2). The most marked nail changes seem to occur in alopecia areata totalis and alopecia areata of sudden onset (1). Common findings are pitting and brittleness (1,5); shedding of nails is less frequent. We observed 2 patients with red lunulae in severe alopecia areata – an association which has only very rarely been described to date.

### CASE REPORTS

#### Case 1

A 30-year-old white woman reported a history of diffuse hair loss starting acutely 11 weeks earlier. During a few days, most of her hair fell out and about 7 weeks later, she noticed that the colour of her fingernail lunulae had changed to red. She had no history of other diseases, particularly autoimmune or endocrine disorders, nor of atopic diathesis. She had not received any internal or topical medication before the onset of alopecia. However, she had been under emotional stress before start of her illness. When first seen by us, alopecia areata had affected most of the hair follicles on her scalp, eyebrows (Fig. 1), eyelids, and the body hair.

Physical examination was otherwise normal, except for the finding of sharply circumscribed erythema of the lunulae of all fingernails (Fig. 2), and – less marked – of both big toenails. The erythema disappeared under pressure to the nail plate. Other nail changes found were: small pits, streaks of leukonychia, longitudinal lines, and marked horizontal fissures (Fig. 2).

The following laboratory evaluations were either within normal limits, or negative: complete blood cell count with differential, ESR, serum electrolytes, other routine laboratory values, antinuclear antibodies, thyroid antibodies, serum-IgE. The trichogram showed a dystrophic pattern in both the frontal and occipital region. A course of internal glucocorticosteroid therapy did not restore hair growth, but the erythema of the fingernail lunulae migrated distally (Fig. 3).

#### Case 2

A 61-year-old white man had noticed loss of hair 13 weeks before visiting our Department. The alopecia began 4 weeks after he had suffered from zoster thoracicus. The patient was not aware of any colour changes to his fingernail lunulae. Nevertheless, physical examination revealed similar changes to those found in case 1: almost all of

his scalp and body hair had fallen out (Fig. 4). The lunula of each fingernail showed a sharply circumscribed area of red discoloration, whereas the toenails were normal in appearance. Pitting and leukonychia punctata were also present. (Fig. 5). His personal history was unremarkable, the history of atopic diathesis and drug intake, in particular, being negative. Laboratory findings were normal (red and white blood cell count, ESR, thyroid antibodies, antinuclear antibodies). The serum-IgE level was slightly elevated (135 kU/l, normal range  $\leq$  100 kU/l).

The lunular erythema faded slowly without any therapy and Beau's lines appeared (Fig. 6) during 6 weeks. Topical treatment with glucocorticosteroids was initiated, but failed to promote hair growth.

### DISCUSSION

Various changes in the nail plate are known to develop in patients affected by alopecia areata. Usually, they occur subsequent to the hair loss. The most common one is pitting of the nail surface. In general, small pits, shallower than those of psoriasis, have been described (3). Colour changes in the nail plate, e.g. opaque, yellow, grey, or brown, have frequently been reported, too (3). Koilonychia, severe shortening of the nail, longitudinal lines, onychorrhexis, horizontal fissures (Beau's lines), and spotted lunulae, may also develop (6, 7).

We observed 2 patients with severe alopecia areata (alopecia areata fere totalis) who developed red lunulae a few weeks after the acute onset of hair loss. In both cases, the colour changes were confined to the lunulae themselves, with a sharp margin; other parts of the nail plate were not involved. Naturally, the red lunulae are most obvious on thumb and great toenails (8, 9, our cases). Interestingly, after the red lunulae had disappeared, Beau's lines developed in one patient.

Only very few cases of red lunulae in association with alopecia areata have hitherto been described in the literature (8, 9, 10). Red lunulae probably occur in severe alopecia areata. Red lunulae have been said (8, 10–13) to result from a variety of severe diseases (Table I), especially concomitantly with cardiac failure (11).

Red lunulae arise mostly in primary systemic disorders (10). Their pathogenesis is a matter of discussion. It has been postulated that the erythema of the lunula in alopecia areata only develops in association with systemic corticosteroid therapy (8). However, our observation in both these cases argues against this assumption, as neither parenteral or nor topical therapy for alopecia areata had been given, when the red lunulae appeared. Unfortunately, no nail biopsies were performed, which might have had been helpful to analyse the histological changes underlying this unusual reaction.

We assume a primary relationship between the development of red lunulae and severe alopecia areata. Our observations may also lend support to the concept of a generalized 'ectodermal reactivity' in alopecia areata, as proposed by Muller & Winkelmann (1, 14).



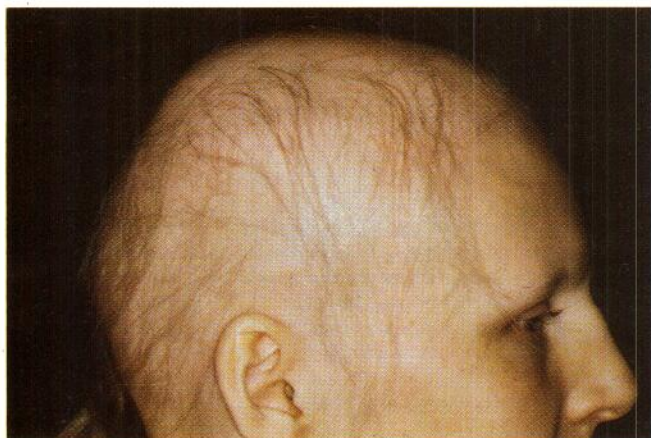


Fig. 1. A 30-year-old woman (case 1) with severe alopecia areata.

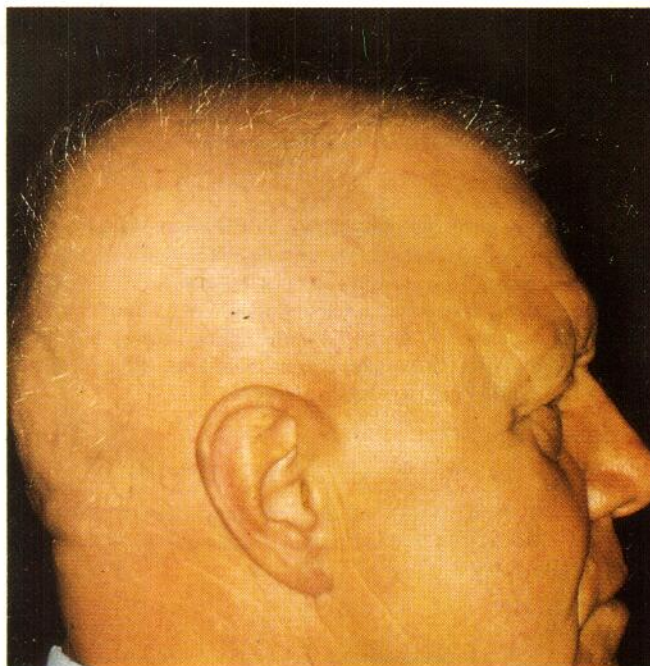


Fig. 4. A 61-year-old man (case 2) with severe alopecia areata.



Fig. 2. Red lunulae in case 1; 11 weeks after onset of hair loss and 5 weeks after colour changes had been noticed.



Fig. 5. Red lunulae in case 2; 13 weeks after alopecia areata had arisen.



Fig. 3. Red lunulae and horizontal fissures in the fingernails in case 1; 15 weeks after onset of alopecia areata.



Fig. 6. Beau's lines in case 2; 19 weeks after onset of hair loss.



Table I. Diseases associated with red lunulae.

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Rheumatoid arthritis (Ref. 13)
Systemic corticosteroid therapy (Ref. 9)
Systemic lupus erythematosus (Ref. 10)
Dermatomyositis (Ref. 10)
Cardiac failure (e.g. secondary to hypertension, arteriosclerosis) (Ref. 11)
Pulmonary diseases (e.g. emphysema, chronic bronchitis) (Ref. 11)
Polycythaemia vera (Ref. 11)
Malnutrition (Ref. 11)
Hepatic cirrhosis (Ref. 11)
Lymphoma (Ref. 11)
(Myeloid) leukaemia (Ref. 11)
Alopecia areata (Ref. 8, 9, 10, 12)

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