

Congenital Leukonychia Totalis in Two Brothers

Sir,

Leukonychia, or white nails, is a common finding in nails of fingers or toes (1). It is a very heterogeneous condition, with many different causes. In a recent review, Grossmann & Scher listed over 70 such causes (2). Acquired forms must be differentiated from hereditary forms. Depending on the involvement of the nail plate, leukonychia is morphologically classified into striata, partialis and finally leukonychia totalis, in which all nails are completely white (3). In most cases, leukonychia appears secondarily, with incomplete involvement of the nails. Among the hereditary forms, a simple autosomal dominant form in different variations is known. Here we describe the extremely rare case of two brothers with total leukonychia, without any other symptoms and without manifestation in any other family member.

CASE REPORT

A 28-year-old male patient was admitted to our hospital because of contact dermatitis due to nickel. On physical examination, all twenty nails were completely porcelain white (Figs. 1 and 2). The patient and especially the nails showed no other pathological symptoms. The parents of the patient had noticed the unusual colour of the nails immediately after birth. Broad laboratory tests as well as X-rays of chest and head were without any pathological findings. Because of the known common inheritance, we inquired about similar anomalies in other members of the family and learnt that the only brother, who was 32-year-old, had the same condition. The physical examination, together with laboratory findings and X-ray screenings in the brother, also revealed only a total leukonychia of all twenty nails. However, no other member of the extended family had features of any kind of leukonychia.

DISCUSSION

Total leukonychia is a rare condition of the nails, with an autosomal dominant inheritance. The nails may be milky, chalky, bluish or porcelain white (3). Earlier, Bauer reported on 16 family members in 3 generations who had leukonychia totalis (4). In our case, no other family member in the last 3 generations had had such a discoloration of the nails. There

was no known consanguinity in the reported family. For this reason, the occurrence of white nails in the two brothers seems to be an autosomal recessive segregation. There is only one case to our knowledge in the world literature, in which a similar constellation is reported (5). One can hypothesize about other reasons for the appearance of leukonychia totalis in the two brothers, for instance common genetic phenomena such as variable expressivity (6) and incomplete penetrance (7). This seems unlikely, however, in our patients, because of the complete involvement of the nails and the lack of any nail affections in related persons. Another possible explanation for the unusual segregation is a spontaneous somatic mutation in one of the parents, which may then have been autosomally transmitted with a gonadal mosaicism. Such mutations are well known in other autosomal dominant diseases (8). Finally, it is possible that the two brothers share a common, extramarital father and that leukonychia is the result of a simple autosomal dominant transmission. Having read the case report by Frydman & Cohen (5), we considered whether a somatic mutation may occur more frequently than supposed, or whether this unusual segregation is a further sign of an autosomal recessive inheritance. Since hereditary forms of leukonychia are not always associated with other symptoms, one can speculate that there are more cases than the occasional reports in the literature indicate. Unfortunately, there is not sufficient data about the frequency of leukonychia totalis. The histopathological findings in true leukonychia are not yet clear. Mostly it is believed that parakeratotic foci could be the reason for leukonychia.

It should be mentioned that except from masking the discoloration with nail varnish, there is no possibility of successful treatment of leukonychia totalis. In our case, both brothers were proud of their special condition; the nails were fluorescent in UV-light in discotheques, exerting a certain influence on interested women.

In conclusion, these two brothers with leukonychia totalis, without affection of members of the extended family, represent an extremely rare constellation, in which the underlying genetic mechanisms are not yet clear.



Fig. 1. Leukonychia totalis of the finger nails.



Fig. 2. Leukonychia totalis of the toe nails. Note also complete regrowth of a white nail in the injured second toe nail.

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Eosinophilic Cellulitis (Wells' Syndrome): Treatment with Minocycline

Sir,

Tetracyclines have been widely used in dermatology as antibiotics in acne. More recently, they have also been used as immunomodulators in non-infectious skin disorders (1). Especially those dermatoses that are mediated by eosinophilic granulocytes (2), like bullous pemphigoid, appear to respond favourably to tetracyclines. Here, we report a case of eosinophilic cellulitis (Wells' syndrome) that responded well to oral minocycline.

CASE REPORT

A 75-year-old woman presented with a history of recurrent itchy and painful swellings, which had started in the summer. The lesions occurred on the hands, wrists, face and lower legs and slowly resolved in 2–4 weeks, leaving slate grey pigmentation. She noticed a relation with stripping of plants (*Salvia*) in her garden. There was no history of insect bites. Her medical history included a low-grade non-Hodgkin's lymphoma, which had responded well to chemotherapy 7 years earlier and had been in stable partial remission since then. She had also had herpes zoster, thrombosis, recurrent urinary tract infection and adverse skin reactions to diclofenac and terbinafine.

Physical examination of the skin showed up to 6 cm large, dome-shaped, erythematous, firm oedematous swellings on the right jaw and the forehead, with vesicles discharging a clear exsudate. The eyelids were swollen. On her hands and lower legs erythematous-squamous lesions of previous nodi were present. In the neck and inguinal area reactive lymph nodes were palpable.

Histological examination of lesional skin showed perivascular and interstitial infiltrates, consisting of eosinophilic granulocytes and lymphocytes reaching the septa of subcutaneous adipose tissue. The dermis showed oedema and basophilic degeneration of collagen bundles, some covered by eosinophilic material ("flame figures").

Immunofluorescence microscopy of lesional skin showed intraepidermal vesicles filled with numerous eosinophils, and in the dermis discrete granular deposits of fibrin and IgM, with clusters of IgG and fibrin-coated collagen bundles. In the vessel walls granular deposits of complement C3c were found. In normal skin no immune deposits were present. There were no circulating auto-antibodies detectable with monkey oesophagus substrate.

Laboratory investigations of peripheral blood showed increased levels of eosinophilic granulocytes 1.57 10E9/l and 19.7%, ESR 79 mm/1h, IgE >2000 E/ml, IgG 17.5 g/l with an IgG lambda paraprotein and C-reactive protein 16 mg/l. The following laboratory studies were either negative or within normal limits: haemoglobin, platelet count, serum IgA and IgM, alpha-1-antitrypsin, liver- and kidney screening test, antinuclear antibody, antistreptolysin, serologic tests for *Borrelia burgdorferi*, cytomegalovirus, *Toxoplasma gondii*, *Echinococcus ascaris*, toxocara, *Entamoeba histolytica*, *Taenia solium*, *Treponema pallidum*, Epstein-Barr virus and human immunodeficiency virus. Urinalysis showed leukocytes. Parasitologic examination of faeces was negative. CT-scan revealed a diffuse lymphadenopathy in the neck.

Allergic patch tests with the European standard series were negative. Patch tests and UVA-photopatch tests with *Salvia* leaf, stem and root were negative.

Urologic consultation revealed that the recurrent urinary tract infection was caused by urine residue due to insufficient bladder turgor. The treatment with antibiotics had no time relation with the skin swellings.

A diagnosis was made of eosinophilic cellulitis (Wells' syndrome).

Treatment was started with minocycline 100 mg b.d. and niacinamide 500 mg t.d. for 2 weeks. All lesions cleared within 48 h after starting this therapy. One month later, a relapse occurred on the forehead with swelling of the eyelids, which again was treated with minocycline and niacinamide for 4 weeks. Again the swellings resolved quickly after initiation of the therapy. During this treatment period three minor episodes of swellings occurred, which had a duration of less than 4 days, without swelling of the eyelids.

The lymphadenopathy in the neck was interpreted as a relapse of the low-grade non-Hodgkin's lymphoma. Treatment with leukeran was successful but had no apparent effect on the skin lesions.

The next relapse occurred the following summer, 7 months after cessation of the minocycline therapy. Now, only minocycline 100 mg d.d. without niacinamide was prescribed for 1 week, after which the swellings also resolved quickly. The patient was free of lesions for 2 months without therapy. Relapses were treated with a short course of minocycline alone.

DISCUSSION

The therapy of choice in eosinophilic cellulitis is low-dose oral glucocorticosteroids, continuously or intermittently. Also dapsone or griseofulvin may be successful. We used minocycline in addition to niacinamide, as derived from protocol in bullous pemphigoid (2). In our patient, the frequency and severity of the eruptions subsided with minocycline 100 mg per day with or without the addition of niacinamide.

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