

Comel-Netherton Syndrome: Evolution of Manifestation in a 20-year Follow-up and Phenotypic Overlap with Peeling Skin Syndrome Type B

Sir,

Comel-Netherton syndrome (CNs) can be characterized by a triad of symptoms: ichthyosiform erythroderma, multiple defect of the hairs and atopic diathesis. CNs is a relatively rare disorder. While there had been as few as 43 reports published up to 1985 (1), at the moment about 80–85 publications are available.

We report here on a 31-year-old male patient with congenital CNs, whose symptoms since the age of 19–20 years were localized on the flexor surfaces of the thighs and mimicked peeling skin syndrome (PSS). We note that the clinical follow-up observed in this patient suggests a phenotypic overlap with PSS type B.

CASE REPORT

The patient was born to healthy, non-consanguineous parents and presented with scaling congenital erythroderma. Neither his brother nor other family members have any similar complaints. As an infant he was often admitted to paediatric wards and, later on, he was treated at the Department of Dermatology of the University Medical School, Pécs, Hungary. At the age of 8 years his skin was erythrodermic and he suffered from an ichthyosis-like dermatosis characterized by perpetuously serpiginous, migratory skin lesions showing double-edged scales. The condition was diagnosed by 1 of the authors (IS). The skin was dry and due to the itching, sporadically superficial excoriations could be observed. White dermographism and trichorrhexis invaginata could be seen. The skin of the face, palms and soles were not involved in the scaling process.

Further investigations revealed that from the age of approximately 19–20 years, desquamation was gradually restricted to the flexor surfaces of the thighs and occasionally the knees. Treatment with white petrolatum and emollient cream were the most successful therapeutic measures. He was treated with steroid ointments (hydrocortisone 2.5%) for some months when he was 10–11 years old. At the age of 17 years he was given 0.25 mg/kg bodyweight etretinate (Tigason[®], Roche, Basel), for 2 months, but he did not tolerate it because of its side-effects.

At present the patient's skin is erythrodermic and dry. On the flexor surface of the thighs and knees on the inflamed skin there is an ichthyosis-like dermatosis characterized by continuous production of serpiginous migratory skin lesions showing double-edged scales and arched character with 20–25 mm in diameter (Figs 1A and B). The foci perpetuously disappear through desquamation to recur unexpectedly without any detectable reason. The patient's skin is dry and he feels more comfortable in summer when the status of the skin is better.

The 31-year-old normally developed male patient's general appearance is normal. His dentition is defective, while no pathological changes on the finger- and toenails can be observed. His pharyngeal reflex is missing and he has a white dermographism beside the lasting itching of the skin.

The hair on the scalp as well as on the chest is short (maximum length 10–15 mm) and apparently broken up.

Histological examination

The epidermis is thickened and has some elongated rete ridges; the granular cell layer is thinner in some places. In the upper part of the dermis moderate lymphocytic infiltration of blood vessels can be observed, the rate of eosinophilic cells being relatively low. A number of cytokeratins were investigated without any alterations.

Microscopic picture of the hair

Hair samples taken from the area of the vertex show expressed trichorrhexis invaginata (Fig. 2A); on those taken from the temporal region nodes are flat and not so protruding; while hair samples from the chest show flat and small protruding nodes (trichorrhexis invaginata; Fig. 2B).

Laboratory test

Blood count, urine analysis, liver functions tests, blood sugar level yielded values in the normal ranges. Serum IgE level 450 IU/ml (May 1978); 560 IU/ml, (June 1997) (normal value: ≤ 50 IU/ml). Serum protein, serum immunoelectrophoretic picture, quantitative immunodiffusion, absolute lymphocyte count, T-cell and B-cell counts were in normal ranges.

DISCUSSION

Conditions associated with a peeling desquamation can be classified into 2 large groups. It was Fox (2) who using the

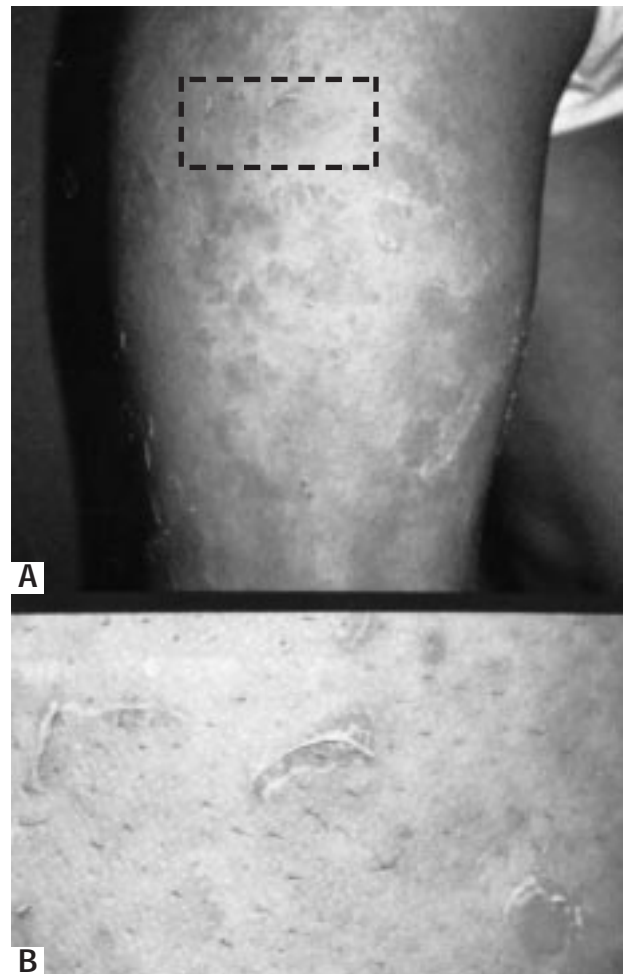


Fig. 1. (A) On the inflamed area on the thigh there are many double-arched skin lesions with edges curling upwards (B) The lesions are more visible in the insert.

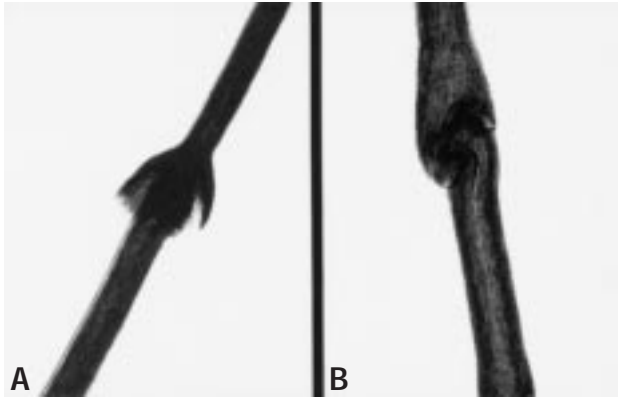


Fig. 2. (A) Sign of trichorrhesis invaginata on the pilus from the vertex and (B) the chest (130 \times).

term “keratolysis exfoliativa congenita”, described a life-long desquamative process on inflammation-free skin. A few years later, Wile (3) also described an unusual congenital ichthyotic erythrodermic condition associated with exfoliation and itching, which he observed in 3 members of a family. Later, in 1982 Levy & Goldsmith (4) published another case, making a strong claim that it was a definite form of congenital ichthyosis, which they called as PSS. All this suggests that the symptoms described by the latter authors (3, 4) differed from that described by Fox (2). It led to a temporary terminological confusion that, instead of “peeling skin syndrome” used by Levy & Goldsmith (4) “continual skin peeling” was used by Kurban & Azar (5) to describe their 4 cases similar to that published by Fox (2). In the 1980s 3 publications appeared in which the term “peeling skin syndrome” (6–8) were used. In 1986 Silverman et al. (9) used the expression “continual skin peeling syndrome” to describe a condition. Both of these skin disorders were regarded as ichthyosis by the authors. Traupe (10) who suggested making a distinction between desquamating skin conditions classifying them as type “A” PSS (similar to that described by Fox) and type “B” PSS (similar to that described by Wile). Traupe (10) argues that type “B” PSS has several features in common with CNs.

In the case of our patient, signs of atopic diathesis were also present: dry and itchy skin, white dermographism, pharyngeal areflexia and markedly elevated serum IgE level.

The condition can be treated with locally administered steroids, emollient and keratolytic preparations. Systemic retinoids did not prove to be effective (11), but in small quantities they may be used efficiently (12). Cyclosporin A (13) and PUVA treatment (11) are ineffective.

The association of PSS type B with trichorrhesis nodosa is rare but not unknown. Mevorah et al. described at first a young boy with type B PSS and the following abnormalities were present: trichorrhesis invaginata-like changes, moniliform hair shaft diameter reductions, pili torti-like changes and irregular hair shaft torsions (14).

Mevorah et al. (14) published the case of a young Italian boy with a congenital ichthyosiform dermatosis at whom

severe cheilitis, palmar and plantar hyperkeratosis and palmar superficial, histologically subcorneal blistering were noticeable. As a consequence of altered epidermal vitamin A metabolism after a low dose acitretin therapy, desquamative skin areas similar to that seen in PSS appeared. The authors state that this is up to now a previously unreported variant of PSS (15).

In view of the clinical evolution of the disease seen in this 20-year follow-up, we conclude that this patient shows a considerable phenotypic overlap with PSS type B.

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