Acitretin Treatment of a Systematized Inflammatory Linear Verrucous Epidermal Naevus

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Sir,

Inflammatory linear verrucous epidermal naevus (ILVEN) is a rare, yet clinically characteristic disease. ILVEN was characterized as a type of epidermal naevus by Altman & Mehregan (1) in 1971. From a clinical and histological point of view, ILVEN and psoriasis are similar. Sometimes only the clinical course of the disease, the persistent resistance to local therapy and the strong itching may suggest the diagnosis. About 5% of epidermal naevi are ILVEN; most are solitary lesions. In contrast, systematized ILVEN involving wide areas of the integument has only rarely been reported (2, 3). Local treatment of systematized ILVEN with potent corticosteroids or tretinoin 0.1% and good clinical response to oral retinoids in systematized verrucous epidermal naevus (4) have been described. Alternatively,

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topical application of vitamin D3 analogues, dithranol, tar, surgery or cryotherapy has been employed. Here we present a case of systematized ILVEN successfully treated with systemic retinoids.

CASE REPORT

A 34-year-old woman presented with widespread skin lesions present to a varying extent since birth which had been diagnosed and treated as psoriasis vulgaris. Topical therapy first with corticosteroids and later with lactic acid preparations was not effective. Over the past 12 years, she only used readily available skin care products. Over the years, no change in her skin condition was observed apart from increasing pruritus on the dorsal aspects of the feet and lower legs during the past 6 months.

No other family members suffered from similar lesions or from psoriasis. Neither allergies nor internal diseases were known.

No obvious deformities could be found in the orthopaedic, dental, ear, nose and throat or ophthalmologic examination. A chest X-ray and an ultrasound examination of the abdominal cavity were within normal limits.

About 50% of the skin surface was covered with white-yellow conical hyperkeratotic papules with a diameter of about 0.1–1.0 cm in addition to multiple superficial excoriations (Fig. 1A, B and D). Most prominently on the left leg, extended linear, slightly scaly erythematous plaques with occasional fissures were seen. The nail plate of the left thumb showed onychodystrophia with horizontal nail grooves extending to the nail bed and further onto the dorsum of the hand as sharply defined erythematous hyperkeratotic papules in a linear pattern. Generally, skin lesions followed the lines of Blaschko. The face was covered with fine scales and diffuse erythema. Linear hyperkeratotic lesions were found on palmae and plantae. The antecubital and popliteal fossae and the scalp were also affected.

Skin biopsies were taken from the left upper arm and the left thigh. The epidermis revealed basket-like hyperkeratosis, with focal acanthosis. A striking feature was the presence of areas with epidermal atrophy, loss of the granular layer and parakeratosis. In the dermis a perivascular infiltrate of inflammatory cells, mostly lymphocytes, was found.

Topical betamethasone (0.1%), salicylic acid preparations up to 10% for the soles and urea-containing ointments did not result in substantial improvement. Consequently, treatment with oral acitretin (Neotigason®) was initiated on an inpatient basis at 25 mg once a day (0.4 mg kg^{-1} body weight) while topical dexamethasone 0.25% in a water-soluble base was continued. The acitretin dose had to be reduced to 20 mg per day because of increasing erythema on the face and left leg after only 3 days of therapy. The patient was discharged on 20 mg acitretin per day along with topical emollients. The acitretin dose was slowly increased to 3×10 mg per day. After 2 weeks at this level, the erythema almost entirely vanished and the hyperkeratosis distinctly decreased. Side effects were minimal with dryness of the lips only. After 8 weeks on this dose inflammatory and hyperkeratotic lesions had almost disappeared (Fig. 1C and E).

DISCUSSION

Our patient's lesions fulfil all six clinical characteristics for ILVEN as defined by Altman & Mehregan (1). These are: early onset of the skin disorder, preponderance of females (4:1 ratio), preferential involvement of the left leg, pruritus, marked resistance to therapy and an inflammatory psoriasiform histological picture.

In contrast, Lee & Rogers (5) showed a preponderance of male patients. In very rare cases, a familial occurrence has been reported (3, 6). According to Hamm & Happle (3), linear naevi are mosaic lesions originating from a somatic mutation and reflecting the dorsoventral outgrowth of a population of mutant cells

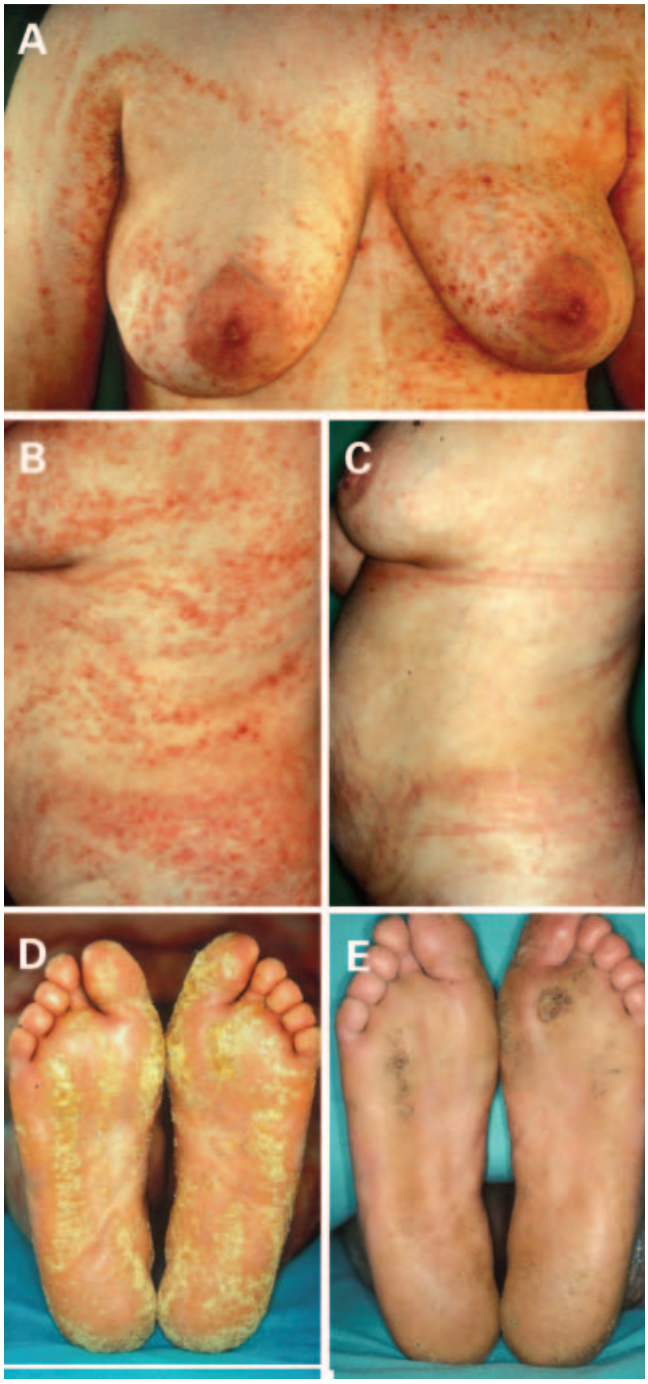

Fig. 1. The patient before (A, B, D) and after (C, E) treatment with acitretin.

during early embryogenesis, following the lines of Blaschko. The molecular base is still unknown.

ILVEN is present at birth in 39% of patients, just as with our case (5). Only single cases of first eruption in adulthood are described (1, 2, 7). A number of other hyperkeratotic skin disorders such as CHILD syndrome (congenital hemidysplasia with ichthyosiform naevus and limb defects), other epidermal naevus syndromes, ichthyosis vulgaris and psoriasis need to be excluded. With no hints of other deformities, CHILD syndrome is unlikely. In addition, CHILD naevus causes no or only minimal pruritus in contrast to ILVEN. CHILD syndrome only occurs in women because of an X-linked dominant trait which is lethal in men (8).

Linear epidermal naevus may be bilateral or distributed on most of the body. However, the lesions appear as asymptomatic, partly verrucous patches or plaques lacking inflammatory components with erythema or pruritus.

Histological changes of ILVEN have been described by Dupré & Christol (9). Specific signs include alternating orthokeratosis and parakeratosis as well as the presence or absence of the granular layer, although these are not pathognomonic. In contrast, papillomatosis, acanthosis or dermal lymphocytic infiltration are unspecific markers. In addition, a relatively low number of elastase-positive cells (polymorphonuclear leukocytes) compared with psoriasis may be a distinguishing characteristic for ILVEN (7).

ILVEN reflects the pathogenetically distinct traits of dermal inflammation and epidermal proliferation with resultant hyperkeratosis. For the CHILD syndrome (10) and for localized systematized verrucous epidermal naevus (4), positive clinical effects of acitretin therapy have been reported. Lee et al. (11) recently summarized different strategies for ILVEN with a focus on surgical excision. In systematized ILVEN, this approach obviously is not suitable. Alternatively CO_2 laser or dermabrasion may be used in cosmetically or otherwise disturbing areas.

In our case, the lesions were resistant to topical steroid therapy, although success has been reported with high-potency steroid application, preferably under occlusion (12). Long-term and widespread steroid application was not feasible because of the anticipated local and systemic side effects. Similar considerations excluded the prolonged and extensive use of topical vitamin D3 analogues (13). Oral acitretin was chosen because of previous reports of naevi (4, 14). The treatment may initially increase the inflammatory component of the ILVEN, as seen in our case, requiring intermittent reduction of dosage. However, female patients in childbearing age must employ strict contraceptive measures. Long-term treatment with low dose acitretin is anticipated in this disease.

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