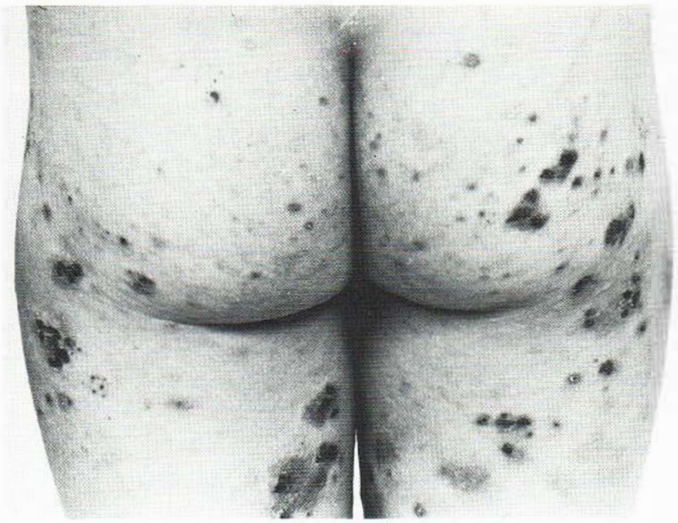

Fig. 2. Impetiginized lesions of typical localization in a boy 8 years of age.

allergic contact dermatitis but only to an increased mechanical sensitivity in these patients (2, 3). However, among our patients the irritant effect of clothing materials did not seem to be a factor, cotton being the most common clothing material in contact with this area.

We therefore speculate that the reason for the localization of atopic dermatitis to the lower gluteal and posterior femoral regions—a localization that is noted in about 13% of these individuals—is sweat retention, as discussed by Sulzberg & Herrman (4). The incidence is highest among children of early school age, which coincides with the period when children for the first time in their life have to sit down for prolonged periods due to the school curriculum. Irrespective of clothing material, prolonged sitting will produce occlusion of the skin and sweat retention with pruritus and dermatitis as a result.

Starting school may also impose a psychological stress that may compound the flare-up of the disease at this age (3). We think that the "atopic thigh" is a 'starting-school' symptom of atopic dermatitis.

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Hereditary Palmo-Plantar Keratoderma: Incidence of Dermatophyte Infections and the Results of Topical Treatment with Retinoic Acid

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Abstract. Thirty-four patients with hereditary palmo-plantar keratoderma (HPPK) were examined with regard to dermatophyte infections. Twenty-two of the patients (65%) had dermatophytosis, a figure indicating a predisposition of this type of infection. *E. floccosum* was found in 50% of the HPPK patients as compared with 17% of the dermatophytoses of palms and soles in non-HPPK patients ($p<0.01$). Topical treatment of HPPK with 0.05% retinoic acid without occlusion had no observable effect.

Key words: Keratoderma; Heredity; Palmo-plantar; Dermatophyte infections; Retinoic acid

Table 1. *Incidence of dermatophyte species in patients with positive cultures from lesions on palms and/or soles and from other sites respectively*

Dermatophyte species	Palms and/or soles					
	HPPK (n=22)		Not HPPK (n=36)		Other sites (n=38)	
	No.	%	No.	%	No.	%
T. rubrum	7	32	18	50	2	5
T. mentagrophytes	4	18	11	31	7	18
T. verrucosum	0	0	0	0	6	16
T. species	0	0	1	3	8	21
E. floccosum	11	50[a]	6	17[a]	15	39

[a] χ^2=7.32. p<0.01.

The incidence of hereditary palmo-plantar keratoderma (HPPK) is very low in most parts of the world (7). However, in northern Sweden an increased prevalence of this autosomal dominant disease has been found. Thus along the northern part of the west coast of the Gulf of Bothnia, 0.55% of the school-children have been found to have HPPK (2). The county in which our hospital is located lies immediately south of this region and here the corresponding figure is 0.3% (5). Consequently a relatively large number of HPPK patients are seen at our Department.

Patients with this disease develop a homogeneous hyperkeratosis on the palms and soles, sometimes resulting in painful fissures. The hyperkeratosis is of the type described as the Unna-Thost variety (7) but dorsal knuckle pad-like keratoses are a frequent additional characteristic (5). Apart from problems with the hyperkeratosis, these patients are often disturbed by an itching and scaly erythema on palms and soles. We have found that these latter symptoms are frequently associated with mycotic infections.

Various types of treatment for HPPK have been suggested in the dermatological literature. These include keratolytic ointments, macerating soaks, hormone preparations, curettage and X-rays, all of which have had only moderate success. In 1962 von Beer (1) reported negative results after the use of vitamin A acid (retinoic acid) for HPPK. On the other hand, other workers (3, 4, 8) found that this treatment had a beneficial effect.

The purposes of this investigation were to study the incidence of dermatophyte infections in patients with HPPK and to study the effect of topically applied retinoic acid in this disease.

PATIENTS AND METHODS

Mycological study

All the 34 patients with hereditary palmo-plantar keratoderma (HPPK) who attended the Department of Dermatology at the University Hospital, Umeå, during 1979 because of significant symptoms from their disease were included in the study. The criteria for the diagnosis of HPPK were: a homogeneous hyperkeratosis on palms and soles with a distinct demarcation from non-affected skin, an autosomal dominant heredity, and an absence of other ectodermal abnormalities. Both sexes were equally represented. The mean age was 39 years (range 1–67 years).

Dermatophyte culture technique. Skin scrapings were placed on three different media: Sabouraud agar (BBL), Grütz-Kimmig agar, and DTM agar (Merck). The cultures were incubated at +30°C and were kept for 4 weeks before the cultivation was deemed to give a negative result. Identification of the fungi was carried out according to standard criteria (6). In a few instances, no conclusive mycological diagnosis could be established. These strains probably represent variants of *T. rubrum* or *T. mentagrophytes*.

Treatment study

Fifteen patients with HPPK were included in the study (6 male, 9 female; mean age, 36 years, range 20–56 years). They were treated with either retinoic acid 0.05% in a vanishing cream (Dermairol®, kindly supplied by Roche-Produkter AB, Stockholm, Sweden) or with the cream base alone. The study was performed as a randomized, double-blind cross-over trial with an interval of 3 weeks between two treatment periods of 3 weeks each. The creams were applied twice daily. The amount of cream used varied between 40 and 160 g per period of 3 weeks (mean 100 g).

The patients were examined and photographed before and after each treatment period. Assessment of dermatological status was based on the degree of hyperkeratosis and erythema and on the presence of fissures. These parameters were classified according to an arbitrary 3-grade scale.

RESULTS AND DISCUSSION

Of the 34 patients seeking advice primarily for symptoms from their HPPK, 22 had dermatophyte infections (65 %). The corresponding figure for positive dermatophyte cultures from patients with other diagnoses, with a clinical picture requiring the exclusion of dermatophyte infection is 16 %. In the area served by our Department, HPPK has a prevalence of 0.3 % among school-children 12–16 years of age (5). This figure is considered to be representative for the total population, as the disease starts already in childhood. These 0.3 % of the population are the source of 22 (38 %) of the 58 cases of tinea of palms and soles seen at our Department in this study. Thus, even taking into consideration the possible difference in inclination to seek dermatological advice, the HPPK patients seem to be more prone to contract dermatophyte infections than are other patients. One obvious explanation for this predisposition is the increased amount of keratin available in HPPK, which creates favourable conditions for dermatophyte growth. Another possibility is that the immunologic defence system does not work satisfactorily in the dead, hyperkeratotic tissue.

Epidermophyton floccosum occurred significantly more often in HPPK lesions than in other types of tinea of palms and soles (Table 1). The preference of *T. rubrum* for palms and soles accords with common experience. *Tinea pedis* is considered to be relatively rare in children before puberty. In the HPPK group the youngest patient was 4 years old, as compared with 10 in the non-HPPK *Tinea pedis* group. Six of the patients with HPPK and with a negative result in the dermatophyte cultures had positive cultures for *C. albicans*. The clinical significance of this finding is not clear. This stands in contrast to the situation in the tinea group. The condition of these latter patients regularly improved, at least temporarily, after antimycotic treatment. This fact supports the idea that tinea is the reason for the increased discomfort experienced by these patients.

In our trial with 0.05 % retinoic acid contrasted with a placebo cream, no difference could be detected between the two treatments. This is in agreement with (1) but in contrast to (4) and (3). In (4) one patient (whom it was not possible to classify accurately because of an incomplete family history) was treated successfully with 0.3 % retinoic acid under occlusion. In (3) 9 patients responded favourably to 0.1 % retinoic acid applied topically without occlusion, one to three times a day. This treatment caused irritation to the skin. The 0.05 % concentration of retinoic acid used in the present study might thus be too low, at least without occlusion. The total absence of side effects (irritation) supports this assumption. Alternatively, the HPPK treated by us might not be of the same type as the hyperkeratoses which respond to treatment with retinoic acid.

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Sclerosing Lymphangitis of the Penis: A Possible Chlamydia Aetiology

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Abstract. Two patients are described in whom sclerosing lymphangitis of the penis occurred concurrently with chlamydial urethritis. The possibility of a causal relationship between these two conditions exists. After treatment with tetracyclines the lesions disappeared within 2 weeks.