

9. Haim S, Gideoni O, Barzilai A. The histocompatibility antigens in patients with Behçet's disease. *Acta Derm Venereol (Stockh)* 1977; 57: 243-245.
10. Ammann AJ, Johnson A, Fyfe GA, Leonards R, Wara D, Cowan MJ. Behçet syndrome. *J Pediatr* 1985; 107: 41-43.

Palmoplantar Keratoderma in Association with Myxedema

EMMILIA HODAK, MICHAEL DAVID and ELEASAR J. FEUERMAN

Department of Dermatology, Beilinson Medical Center, Petah Tikva, and the Sackler School of Medicine, Tel Aviv University, Israel

Hodak E, David M, Feuerman EJ. Palmoplantar keratoderma in association with myxedema. *Acta Derm Venereol (Stockh)* 1986; 66: 354-357.

A 63-year-old female who had been suffering from intractable palmoplantar keratoderma for 13 years was found to have myxedema. Shortly after institution of substitution therapy with thyroid hormone there was a striking improvement in her condition. The possibility of a causal relationship between hypothyroidism and hyperkeratosis is suggested. *Key words: Hyperkeratosis; Dorsal hands and feet; Thyroid hypofunction.* (Received February 7, 1986.)

E. Hodak, Department of Dermatology, Beilinson Medical Center, Petah Tikva 49100, Israel.

The epidermal signs accompanying primary hypothyroidism such as dryness and ichthyosiform changes are well documented in the literature, affecting over 80% of the patients (1). In contrast, hyperkeratosis of soles and/or palms in association with hypothyroidism is extremely unusual, and to the best of our knowledge this has been reported on only two occasions (2, 3). Hereby we present an additional case exhibiting such an association.

CASE REPORT

A 63-year-old female was evaluated for a 13-year history of severe disabling hyperkeratosis of the hands and feet, unresponsive to keratolytic and steroid topical treatments. Her past and family history was not contributory. Upon questioning the patient admitted that she was tired and lethargic. She also noted a change in her voice, considerable gain in weight and generalized stiffness of joints for several years. Menopause had occurred at the age of 50. On physical examination she was mentally alert but seemed extremely slow in her responses with hoarse voice and slow speech. Ankle jerks revealed a slow relaxation phase. Examination of the skin disclosed: periorbital edema, coarse hair, rough, dry, yellowish skin particularly over the extensor surfaces of the limbs and keratotic papules on the elbows. The skin of the soles showed diffused hyperkeratosis, extending to the lateral aspects of the sole, over the ankles and digits forming gray-violaceous verrucous masses (Fig. 1A). There were hyperkeratotic plaques on the hands, particularly on the dorsal surface.

Routine blood tests disclosed elevated cholesterol and skeletal muscle enzyme levels. The serologic tests for syphilis and latex test were negative. The endocrine function tests showed free T₄ 0.5 ng/dl (normal: 0.8-2.4) and TSH 60 micro units/ml (normal: 0.5-4).

Two biopsies obtained from the skin of the ankle and the wrist showed an identical picture of marked hyperkeratosis, acanthosis, papillomatosis and hypergranulosis. Foci of

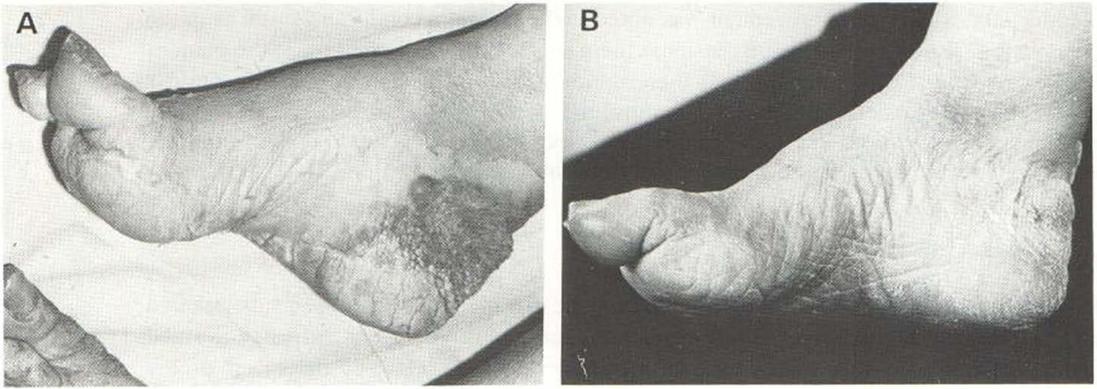


Fig. 1. Photographs of the affected sole and ankle. (A) Prior to therapy with thyroid hormone, showing severe hyperkeratosis forming verrucous masses. (B) After three months of treatment with thyroid hormone.

parakeratosis were also noted. The dermis showed no pathology (Fig. 2). Direct microscopic examination of skin scrapings as well as culture failed to demonstrate any elements of fungi.

The patient was diagnosed as suffering from myxedema and substitution therapy was instituted with 25 mg daily of L-thyroxine sodium. In the follow-up examination three

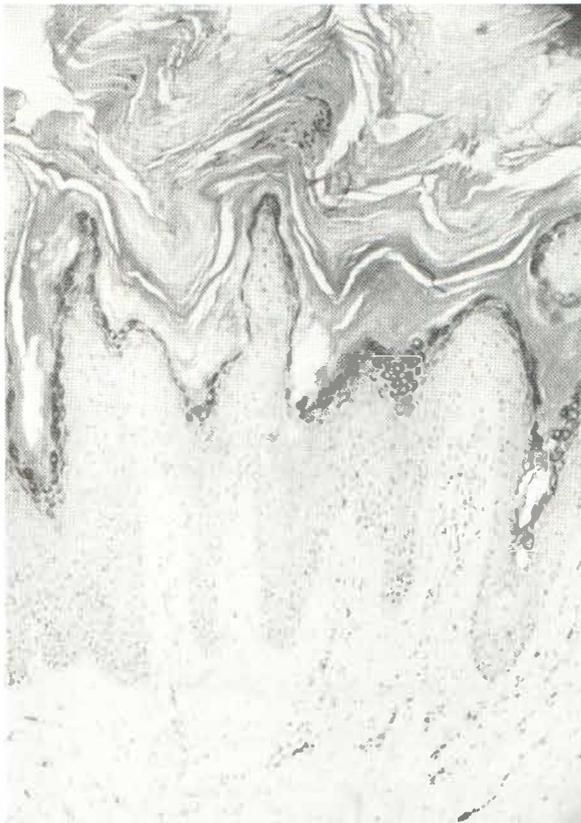


Fig. 2. Biopsy specimen of skin taken from the ankle, showing marked hyperkeratosis, acanthosis, papillomatosis and hypergranulosis as well as foci of parakeratosis. H-E $\times 100$.

months later, a striking improvement was noted in the patient's condition as well as in the previously resistant hyperkeratotic lesions: there was a marked diminution of the plaques on the feet (Fig. 1 B), and clearing of the eruption on both aspects of the hands. On her next visit, one year after initiation of therapy, the skin of the hands was still free of any eruption. There were no keratotic lesions to be seen on the soles and the plaques in the ankle region were much less prominent and noticeably smaller.

DISCUSSION

Palmoplantar keratoderma (PPK) is a multietiological disorder which has been subclassified into two main categories: hereditary-congenital and acquired. In our patient it seemed highly unlikely that this was a case of hereditary PPK in view of the onset of the hyperkeratosis at an advanced age and the lack of a family history. Acquired PPK may be part of the manifestations of lichen planus, pityriasis rubra pilaris, Reiter's syndrome, mycotic infection, syphilis, warts, callosities, arsenical keratosis (4), contact dermatitis, neurodermatitis (5, 6) or after X-ray treatment (6), all of which were excluded by the history, clinical picture and/or laboratory data. Psoriasis of the palms and soles also present as PPK. However, this diagnosis was ruled out by the histopathological finding and the resistance to topical treatment. The diagnosis keratoderma climactericum was not considered seriously in view of the resistance to topical treatment. Significant involvement of the dorsa of the hands and feet is not part of its picture. Furthermore, the palmar lesions of keratoderma climactericum are centrally located and the plantar eruption spares the longitudinal arch (6), which was not the case in our patient.

The association of PPK with hypothyroidism is extremely rare, and is not mentioned in recent review articles (7, 8). In 1952 Shaw et al. described PPK in association with myxedema (2). Later, in 1977, Tan & Sarkany described myxedema with palmar keratoderma (3). In both cases there was a striking response of the skin changes to the treatment of myxedema. Our patient differs from these two patients in two clinical aspects: (1) the additional projections of hyperkeratosis to the dorsal aspect of the hands; (2) the severity and verrucosity of hyperkeratosis.

The question arises as to whether the coexistence of myxedema with keratoderma is more than coincidental. The striking improvement in the long standing PPK following treatment for the myxedema in our patient as well as that observed in the two previously reported cases, strongly supports a causal relationship between the low level of the thyroid hormone and keratoderma.

Although the explanation for this is still obscure, it is to be noted that the epidermis in hypothyroidism is known to develop hyperkeratosis (1), manifested by keratotic papules on the elbows, knees and buttocks, as well as dry skin and ichthyosiform changes. It may be assumed that PPK associated with myxedema can be ascribed to an exaggeration in this propensity to over-keratinization.

REFERENCES

1. Freedberg IM. Skin. In: Werner SC, Ingbar SH, ed. The thyroid. 4th ed. Maryland: Harper & Row, 1978: 851-853.
2. Shaw WM, Mason EH, Kalz EG. Hypothyroidism. liver damage and vitamin A deficiency as factors in hyperkeratosis. Arch Dermatol Syph 1952; 66: 197-203.
3. Tan OT, Sarkany I. Severe palmar keratoderma in myxedema. Clin Exp Dermatol 1977; 2: 287-288.
4. Baden HP. Keratoderma of palms and soles. In: Fitzpatrick TB, Eisen AZ, Wolff K et al., eds. Dermatology in General Medicine. 2nd ed. New York: McGraw-Hill Book Co., 1979: 275-279.

5. Fred HL, Gieser RG, Berry WR, Eiband JM. Keratosis palmaris et plantaris. *Arch Intern Med* 1964; 113: 866-871.
6. Hilton L, Simpson RR, Simpson RR. Differential diagnosis of plantar palmar keratoderma. *J Am Podiatr Assoc* 1978; 68 (8): 578-584.
7. Hornstein OP. Thyroid gland, parathyroid gland: Clinical relationship to skin. *Z Hautkr* 1984; 59: 1125-1143.
8. Christianson HB. Cutaneous manifestations of hypothyroidism including purpura and ecchymoses. *Cutis* 1976; 17 (1): 45-52.

Acute Febrile Neutrophilic Dermatitis (Sweet's Syndrome) Following BCG Vaccination

BORIS RADEFF and MONIKA HARMS

Clinique de Dermatologie, Hôpital Cantonal Universitaire, Geneva, Switzerland

Radef B, Harms M. Acute febrile neutrophilic dermatitis (Sweet's syndrome) following BCG vaccination. *Acta Derm Venereol (Stockh)* 1986; 66: 357-358.

Several factors may trigger or be associated with Acute febrile neutrophilic dermatitis (AFND). We report a case of AFND following BCG vaccination as an interesting association although no direct interrelation can be certified. *Key words: Vaccinations; Intradermal tests.* (Received October 29, 1985.)

B. Radef, Clinique de Dermatologie, Hôpital Cantonal Universitaire, 1211 Genève 4, Switzerland.

The cause of acute febrile neutrophilic dermatitis (AFND) is unknown. Different mechanisms have been suggested such as an altered immunological activity with hypersensitivity to various infectious antigens, abnormal chemotactic stimulation or abnormal leukocytic chemotactic response. Several potential triggering factors have been described in large series (1, 2, 3, 4).

CASE REPORT

We report a case of AFND following a BCG vaccination. A 23-year-old Caucasian girl gave a history of good general health. She used a contraceptive pill and occasional multiple vitamin preparations. Since she denied any previous BCG vaccination and remained negative to intradermal tuberculin tests, her physician performed an intradermal freeze-dried BCG vaccination (0.08 ml, Statens Serum Institute, Copenhagen). Fifteen days later, she developed an influenza-like syndrome with fever (39°C), fatigue, which failed to respond to systemic tetracyclines. The general clinical examination was within normal limits. There were erythematous and infiltrated cutaneous plaques, particularly on the forehead, the cheeks, the chin, the shoulders. On the right thigh, where the BCG had been performed, there was an erythematous, infiltrated, ulcerated nodule, without any lymphadenopathy. Sedimentation rate was elevated (55), with leukocytosis ($12\,000/\text{mm}^3$) and neutrophilia (74%). Histological examination of one of the cutaneous lesions was typical and AFND. The patient was given potassium iodide, 900 mg/day. Within 48 hours the infiltration dramatically disappeared leaving erythematous macules which progressively faded away. The BCG lesion on the right thigh also faded dramatically.

DISCUSSION

Our case shows an interesting association of AFND following BCG vaccination. To our knowledge no previous case has been described. Two cases occurred three days after