

and multiple keratoacanthomas co-existent with internal cancer have been reported (3, 9). The patient described in this report had been exposed to strong sunlight 4 months earlier. This might have triggered the onset of the disease.

Multiple keratoacanthomas are uncommon, found in men more often than in women, and are usually familial. The patient presented had no relevant family history. The lesions can involve any area of the skin, including the oral mucosa and the larynx (2). In the present case almost every region of the skin was involved except the palms and the face.

The treatment of multiple keratoacanthoma is an individual problem which in the present case was solved by therapy with coal tar and salicylic acid 10% in petrolatum combined with curettage of the most prominent lesions.

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Vaccinia and Topical Steroids: A Case Report

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Abstract. Widespread vaccinia developed in non-eczematous skin around the eyes and mouth of a 20-year-old man, whereas active eczematous lesions on both wrists were unaffected. The use of steroid ointments is discussed as a possible causal factor.

Key words: Vaccinia; Topical steroids; Local immunity

Serious complications of smallpox vaccination such as eczema vaccinatum and vaccinia necrosum have been recorded in frequencies of 38.5 and 1.5 per million vaccinated, respectively (7). While eczema vaccinatum is a manifestation of vaccinia virus in areas of eczematous skin, probably reflecting impaired local immunity (2), vaccinia necrosum represents a progressive and ultimately fatal infection in persons suffering from general immunodeficiency (6, 9). We report here a patient who developed widespread vaccinia eruptions in non-eczematous skin areas that had previously been exposed to steroid ointments, whereas active eczematous lesions in other locations remained unaffected.

CASE REPORT

A 20-year-old naval recruit was admitted to hospital with a 2-day history of fever and progressive vesicular lesions on his face. Since early childhood the patient had suffered from atopic eczema and seasonal hay fever. Except for this he had enjoyed perfect health. According to his vaccination records the patient received vaccination against smallpox in 1958, at the age of 5 months. The local reaction following vaccination was recorded as satisfactory. He was revaccinated in 1974 and in 1976, but it is uncertain whether or not local reactions occurred on these occasions.

For some years the patient had more or less regularly used steroid ointments for his atopic eczema. Except for large eczematous lesions on both wrists, the eczema had been fairly inactive during the months preceding his admission to hospital. Steroid ointments were therefore used only every second or third day on eczematous areas of the skin. The patient had never had eczematous lesions on his face. However, due to slight dryness of the skin around mouth and eyes the patient had daily for more than

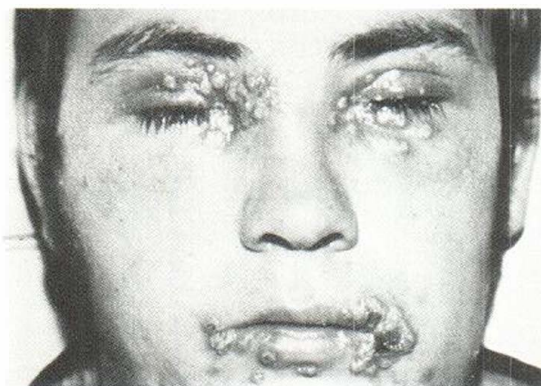


Fig. 1. Distribution of vaccinia vesicles after smallpox vaccination in a patient using topical steroids around his eyes and mouth.



Fig. 2. Close-up view of typical umbilicated vaccinia vesicles in a patient using topical steroids on the exposed skin.

half a year applied Fluocinolone or Betamethasone topically. On April 19, 1978 the patient, together with his fellow recruits, was vaccinated against smallpox. He did not notice any local reaction at the site of inoculation. However, isolated lesions around his eyes and mouth developed 9 days later. On admission to hospital the patient presented with widespread umbilicated vesicles and pustules in these areas (Figs. 1, 2).

During the first few days of hospitalization the patient had extensive swelling of his face and neck. He also had fever and headache. For fear of further spread of the lesions the patient was given on the third day in hospital 216 000 IU of hyperimmune serum against vaccinia. From the fourth day of hospitalization he improved rapidly, and after another week only few crusts remained. The patient was discharged after 10 days. When seen 2 weeks later only small scars remained on the previously affected areas of the skin.

DISCUSSION

We are not aware of reports on vaccinia developing in previously steroid-treated areas of the skin. However, such complications of vaccination have probably occurred. The fact that the skin was apparently normal before starting topical treatment makes this case an interesting illustration of the potency of steroid ointments *per se* for the depression of local immunity. Obviously, the local depression overshadowed the potential effect of his general immunity against vaccinia, induced by three previous vaccinations. It is of further interest that in our patient the large eczematous patches on both wrists remained unaffected by the viral attack. Eczema vaccinatum may occur in active as well as inactive eczema (2). Hence, as known by most doctors, eczematous persons should not receive this

type of vaccination. In spite of eczematous lesions in 1974 and again in 1976 our patient was vaccinated, and this dangerous practice was repeated at the military camp. However, eczema vaccinatum did not develop on any of these occasions although the locations of the patches made it almost impossible to avoid exposure to the virus. In addition the moderate use of steroid ointment must have rendered these areas especially vulnerable to infection with vaccinia virus.

Although much remains to be learned about the effects of topical steroids in local immunity, recent work in this field indicates that the depression of cell-mediated immunity is of central importance (4). T-lymphocytes are known to be essential to recovery from viral infection (3), and an impaired T-cell function has been amply documented in cases of vaccinia necrosum (1, 5, 8, 9). In one fatal case progressive vaccinia was associated with cortisone therapy in a patient who suffered from chronic lymphocytic leukemia (8).

As a result of the successful eradication of smallpox the potentially dangerous vaccinia virus will probably soon be confined to research laboratories. One of the serious hazards in connection with excessive use of steroid ointments is thereby eliminated. Also eliminated, however, is an interesting model for human *in vivo* studies on local immunity to pox-virus infections.

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Acquired Zinc Deficiency in Alcoholic Liver Cirrhosis: Report of Two Cases

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Abstract. Acquired zinc deficiency in two patients suffering from alcoholic liver cirrhosis is reported. Skin changes included bullae and erosions on the heels, desquamating dermatitis on feet, hands and shins, and localized alopecia. Following oral zinc therapy the skin changes disappeared and Beau lines were later seen on the finger nails. Concomitantly with the rise in the depressed plasma zinc levels, serum alkaline phosphatase and prothrombin levels rose and serum bilirubin decreased. The observations are in agreement with earlier reports dealing with congenital and conditioned zinc deficiency and oral zinc therapy in alcoholic liver cirrhosis.

Key words: Cirrhosis; Bilirubin; Prothrombin; Zinc deficiency

Acrodermatitis enteropathica, a congenital primary zinc deficiency disorder, and acquired zinc defi-

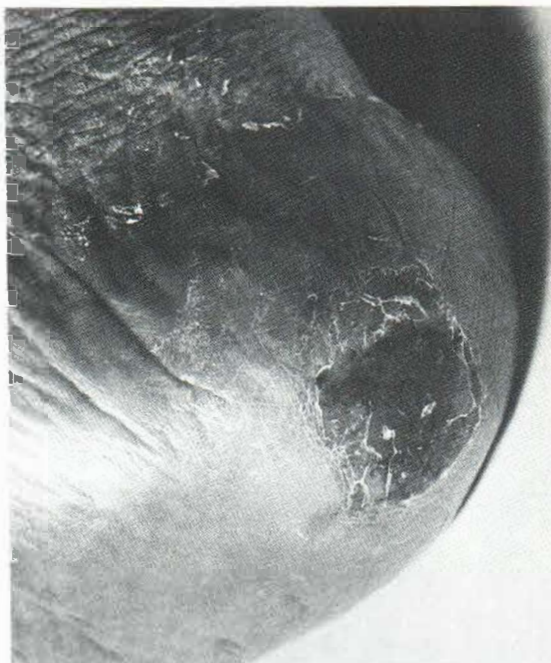


Fig. 1. Healing erosion on the right heel. Note collarette at the periphery of the former bullous lesion (Case 1).

ciency are both characterized by low serum zinc levels and well-defined skin manifestations (8).

In the present communication zinc deficiency dermatosis in 2 patients suffering from alcoholic liver cirrhosis is reported.

CASE REPORTS

Case 1. The patient was a 52-year-old male with a long history of alcohol abuse which had resulted in alcoholic liver cirrhosis of at least 5 years' duration. In February 1979 he was admitted to hospital in a poor condition, with pneumonia, decompensated cirrhosis with ascites and renal insufficiency. After a few days, hepatic coma developed. Initially, he was given an appropriate parenteral supply of electrolytes and glucose. After 2 weeks he was started on a protein-restricted diet supplying 40 g protein per day.

On admission, oozing lesions were present in the groins and bullae were seen on the feet at sites subject to mechanical pressure. The lesions progressed slowly despite local care, so that about 3 weeks later the patient was referred to the skin clinic. At that time he showed desquamating dermatitis on palms, soles, and persisting erosions on the heels (Fig. 1). A localized alopecia was seen in the occipital region (Fig. 2). The clinical picture was suggestive of zinc deficiency. Consequently, the plasma zinc level was determined and found to be depressed; 7.7 $\mu\text{mol/l}$ (normal range in males 11.4–18.9 $\mu\text{mol/l}$).