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CATERPILLAR DERMATITIS

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Abstract. Vesicular dermatitis confined to the palms and volar sides of the fingers was observed in 5 patients after contact with caterpillars. The changes appeared within a few hours in 4 patients but in one patient not until 3 days after contact. The symptoms were still severe 9–12 days after onset but after 3 weeks they disappeared. In 3 cases the roofs of the vesicles were treated with KOH and examined microscopically 9–12 days after contact with caterpillars. Caterpillar hairs were then demonstrated. The history and the microscopic examination are both of importance for the diagnosis.

Dermatitis caused by caterpillars is common in some parts of the world and is recognized by laymen as well as physicians. The description of caterpillar dermatitis by Tyzzer in 1907 (11) is one of the best on the subject. A good review of the literature and interesting investigations were published by Goldman et al. in 1960 (3). Caterpillar dermatitis has been described as an occupational disease in plantation workers in Israel by Katzenellenbogen (6). Ziprkowski et al. (12), also in Israel, reported 600 cases of caterpillar dermatitis among 3000 soldiers encamped in a pine grove. The condition is fairly rare in Scandinavia but as early as 1802 the Swedish entomologist Ljungh (7) gave a fine clinical description of caterpillar dermatitis that developed when he examined Bombyx Processionea. Rasch (9) in his textbook reported skin-irritating caterpillars in Denmark.

Five cases are reported in the following. They were seen at our department in the autumn of 1967. Papulovesicular volar changes were observed in all 5 patients. In 3 of them the diagnosis was verified by microscopic demonstration of caterpillar hairs in the roofs of the vesicles.

MATERIAL AND METHODS

The patients were 4 children between 9–12 years, and one 26-year-old man. All 5 were seen at the department

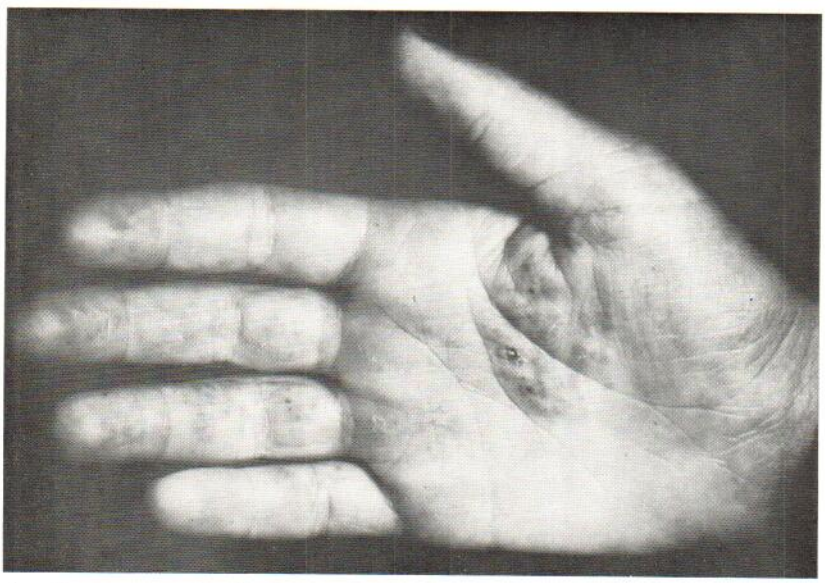

Fig. 1. Palmar vesicles 9 days after contact with caterpillar.

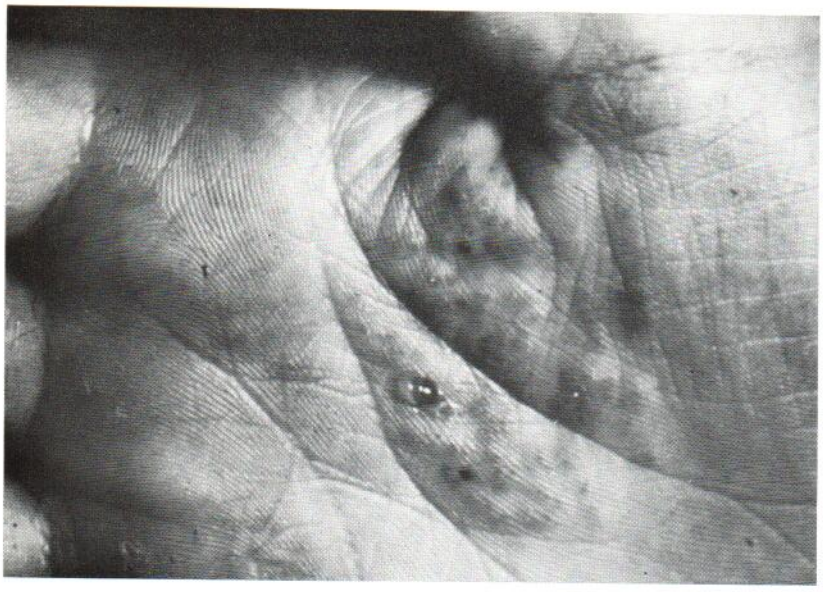

Fig. 2. Close-up of palmar vesicles.

in early October, 1967. In the children the changes had occurred on the day they allowed caterpillars to creep in the palms of their hands. In the man, however, the changes did not occur until three days after contact with the caterpillar. The changes itched intensively. The man was asked whether or not he had had contact with a caterpillar. He first denied this, but after the diagnosis had been confirmed microscopically he admitted such contact. He was a bus-driver and noticed that the itching became worse during work when his hand was rubbing the steering wheel and the knob of the gear lever. One of the children had noticed that the itching had become worse after rubbing with hydrocortisone ointment. In one case the caterpillar responsible for the condition was Macrothylacia rubi. In the other cases the caterpillars could not be obtained for classification. Examination of the patients showed large red papules and vesicles, one to several millimeters in diameter, in the palms and on the volar aspects of the fingers. Three patients were not examined until 9–12 days after exposure to the caterpillars. The roofs of vesicles from 3 patients were excised and treated with 20% KOH, after which they were examined microscopically. In these 3 patients caterpillar hairs were demonstrated. They were resistant to treatment with KOH and refractive.

In none of the patients did steroid cream or ointment give relief. One patient improved when the ointment was replaced by steroid tincture, but this was 9 days after the onset. In all 5 patients the symptoms disappeared about 3 weeks after exposure.

DISCUSSION

In all of the patients the clinical picture with papulo-vesicular volar changes was similar. This picture deviates from that usually described in the literature. More widespread changes consisting of papules, erythema, urticaria, vesicles, bullae and occasionally necrosis are generally described. Arms, face and neck are said to be common sites, but the eruption is often widespread. In most cases localised to the hands, the changes were confined to the thin interdigital skin (4, 5, 8). Katzenellenbogen (6), however, reported that children who handled the caterpillars for some time did get blisters and nodules on the palms.

Caterpillar hairs contain toxic substances which, if they penetrate the skin, cause inflammation (3, 11) but an allergic mechanism may also be involved in the inflammation (3, 10). Microscopic examination of the roof of vesicles revealed persistent caterpillar hairs a long time after exposure. The persistence of hairs in the skin explains the prolonged course and it is not surprising that the dermatitis became worse after pressure or rubbing. The irritating hairs were then exposed to further pressure.

Caterpillar hairs may be detected in histologic sections of diseased skin (1). Our method of studying the roof of blisters after KOH treatment is simpler than histology and may be helpful in confirming the diagnosis at the first visit. Recently Frazier (2) reported that application of a piece of Scotch tape to the lesion and subsequent inspection of the tape under the microscope may permit detection of caterpillar hairs.

A careful inquiry into the patient's history is

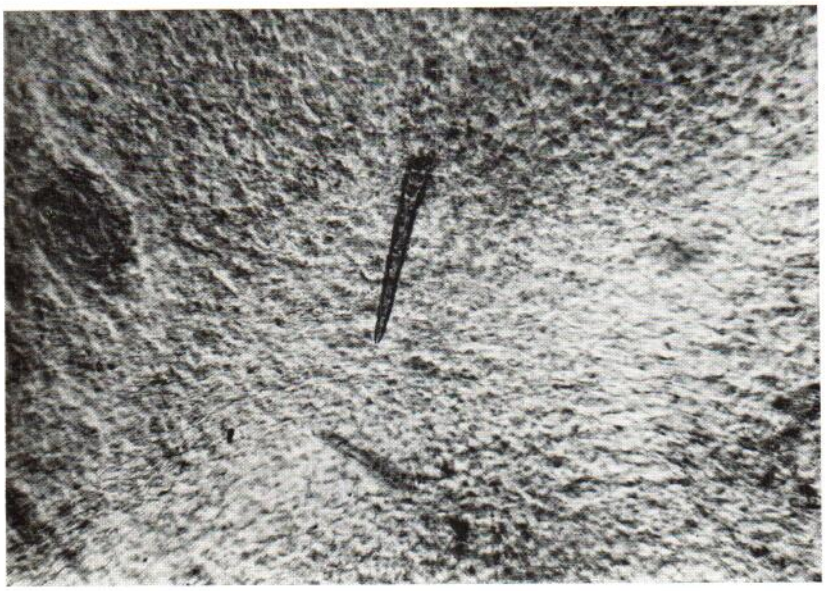

Fig. 3. Caterpillar hair × 400 in roof of vesicle treated with KOH.

most valuable for differentiating the condition from other vesicular hand dermatoses, but the value of microscopic examination is illustrated by the case in which exposure to caterpillars had at first been denied and was not admitted until after microscopic demonstration of the caterpillar hairs.

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