Pompholyx—a One Year Series

INGRID THELIN[1] and GUN AGRUP[2]

[1]*Department of Dermatology, University of Lund.* [2]*Department of Occupational Dermatology, Karolinska Sjukhuset, and National Board of Occupational Safety and Health, Solna, Sweden*

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During one year 68 patients with pompholyx attending the outpatient clinic at the Department of Dermatology, Lund, were examined with special regard to occupational disability. Owing to pompholyx 56 patients had sick-leave, and in 48 sick-leave lasted more than 1 month. No patient needed change of occupation because of pompholyx, and no disability pension was granted because of the disease. *Key words: Occupation; Sick-leave; Delayed allergy; Atopy.* (Received September 26, 1984.)

I. Thelin, Department of Dermatology, Lasarettet, S-221 85 Lund, Sweden.

Pompholyx is a disease of the palms and soles characterized by recurrent eruptions of deep-seated vesicles, usually on the thenar and hypothenar eminences and the sides of the fingers, and usually symmetrically distributed. Erythematous changes, fissures, hyperkeratosis, and secondary trauma may appear later. The problems surrounding this puzzling disease have been reviewed by Sulzberger & Baer (1), Shelley (2), Young (3), Simons (4), and Menné and Hjort (5).

Earlier theories concerning a connection between dyshidrosis and pompholyx have been abandoned, but secondary changes in the sweat ducts may occur. An association between pompholyx and atopy has been suggested (6, 7). The theory of pompholyx as an id-reaction to fungal or bacterial infection has been thoroughly debated (1, 4).

Systemic administration of allergen can provoke the vesicular eruption in patients with pompholyx and positive patch tests to certain haptens. This has been demonstrated for metals, including chromium (8, 9), nickel (7, 10), and cobalt and chromium (11), and also for neomycin and quinolines (12). The problems regarding reactions to contact allergens given orally or systemically have been reviewed by Cronin (13).

The aim of the present study was to determine the frequency of pompholyx at the Department of Dermatology, Lund. Special emphasis was given to the occupational history and to work disability caused by the disease. Patients were examined for possible atopic features, for contact hypersensitivity to common allergens, and for fungal infections.

MATERIAL AND METHODS

All patients with pompholyx of the hands attending the outpatient clinic at the department during a 1-year period were examined, and all filled in a special questionnaire. The initial site of the skin eruption, the present site of the skin changes, and the duration of the skin disease, possible seasonal variations of the vesicular eruptions, history of fungal infection, and personal and family history of atopy were noted. Possible correlation between skin eruptions and food, beverages, and drugs was considered. Patients' occupations were noted, and these were codified in order to detect any in which exacerbating factors existed. Sick-leave owing to the skin disease was noted.

Patch testing was performed with the standard battery recommended by ICDRG (International Contact Dermatitis Research Group). This comprised 30 substances, and in several patients patch testing was also done with other substances, such as hand lotions, topical medicaments, and working gloves. Patients with pompholyx of the feet and lesions between the toes were examined for fungal infection.

PUVA (oral 8-methoxy-psoralen and UVA irradiation) treatment was tried in some cases.

RESULTS

The series consisted of 68 patients, 37 men and 31 women, aged 18–76 years. The age distribution was the same for men and women, with a mean of 41 years. The vesicular eruptions had existed for times varying from 1 month to 25 years (median 4 years). At the time of investigation all patients had lesions on the volae or fingers or both, bilateral in all cases but often not quite symmetrical. Twelve patients also had pompholyx of the feet.

In 17 patients the vesicles were first noticed on the volae and in 29 on the fingers, and in 15 patients the primary eruption was present on volae and fingers. In 3 subjects the first eruptions appeared on the feet.

Most patients had been working for many years. Twelve had "wet work", such as charring, nursing, or laundry work. Twelve had office work, and 28 had one of 14 different occupations (caretaking, gardening, employment in electro-technical, metal, plastic, and packeting industries, and construction work). The remaining 16 people were old age pensioners (7), housewives (5), an students (4).

Most patients (56) had had a period of sick-leave owing to pompholyx, less than 1 month in 8 but over 3 months in 9 (see Table I). Sick-leave was frequent and often prolonged, but there was no significant difference between wet work and office work.

A history of atopic dermatitis, and/or asthma, and/or allergic rhinitis was given by 18 of the 68 patients (24%). 11 of these 18 had had atopic dermatitis (16%), and 1 still had eczema in the flexures of the extremities.

Thirteen patients complained of hyperhidrosis of the palms and feet. None of them had noted a connection between periods of severe sweating and exacerbation of the pompholyx.

Patch testing was possible in 64 of the 68 patients, and 18 showed 1 or more positive tests (28%). The commonest positive test reaction was that to nickel, and occurred in 6 women; in none of them could pompholyx be correlated to epicutaneous nickel contact, even though all had a history of delayed allergic reaction to metals, such as eczema from earrings. Other positive patch test reactions included 2 to cobalt (concomitant with nickel), 2 to balsam of Peru, 2 to perfumes, and 1 each to benzocain, formaldehyde, lanolin, oakmoss, benzylisothiocyanate, chrysanthemum, chromate, and diphenylthiourea.

No food, beverage, or drug was found to provoke the vesicular eruptions.

Cultures were taken from the feet of all 27 patients with pompholyx of the feet or changes between the toes, and fungi were cultured in 2 patients. In 1, a woman, signs of Trichophyton mentagrophytes infection disappeared on treatment, but pompholyx of the hands persisted over the following 6 months. In the other patient too, a man with Trichophyton rubrum infection of the feet, the fungal lesions cleared after treatment, but pompholyx of the hands persisted.

Table I. *Occurrence and duration of sick-leave owing to the skin disease in 68 patients with pompholyx*

Number of patients	Duration of disease	Sick-leave, months			
		<1	1–3	3–6	>6
4	<6 months	1			
11	6–12 months	1	8		
11	1–2 years		7		
42	>2 years	6	24	5	4

PUVA treatment was given in the 3 patients most severely affected. All were women with nickel allergy, and all responded very well.

DISCUSSION

Pompholyx is not uncommon at dermatological clinics, and the 68 patients seen by us during the course of 1 year represented about 1% of all first consultations. A prevalence study (14) has shown a figure of 1‰ in the population primarily served by the Department of Dermatology at Lund.

Contact allergy was diagnosed in 28% of patients, but the vesicular eruption could never be related to exposure to allergen. In patients with nickel allergy vesicles occurred irrespectively of nickel contact. Meneghini & Angelini (15) found the same incidence of contact allergy, 30%, in patients with pompholyx. The commonest positive patch test reactions among their patients were to paraphenylenediamine, chromate, and topical chemicals, but the incidence of nickel allergy was low (1.9%). They concluded that pompholyx is a skin disease which favours sensitization to contact allergens, the allergy in turn becoming a chronicity factor.

Ingestion of allergen is important for the development of pompholyx lesions (9, 10, 11, 12). Fregert (9) showed that vesicular lesions of the palms may appear in chromate allergic people after intake of chromate, and Shelley (8) described chromium in welding fumes as a cause of hand eruptions. Ekelund & Möller (12) reported that intake of neomycin and quinoline induced pompholyx in patients with contact allergy, and similar results have been reported in patients allergic to nickel (7, 10). Veien et al. (18, 19) found that ingestion of nickel and chromate could elicit pompholyx in patients with no proven contact allergy to these substances, but sex distribution of nickel and chromium induced pompholyx suggested that pompholyx caused by oral intake of metals might be related to weak allergy not detectable by patch testing.

Two of our patients had dermatophytic infections of the feet apparently unrelated to the pompholyx. The pompholyx vesicles cannot therefore be mycids as defined by Sulzberger & Baer (1).

The present study has yielded information on the site of pompholyx lesions of the hands. Thus, digital and volar lesions occur at about the same rate (79 and 82%) and usually together, and as a rule the first vesicles appear on the fingers.

In contrast to general opinion, clear seasonal variations were found in only 12 (18%) of our patients. The patients showing seasonal variations had their eruptions in spring and autumn. Atopic disease (dermatitis and/or rhinitis and/or asthma) were found in 24% of the patients, which is to be expected in a Scandinavian population.

Because of their pompholyx lesions 56 (82%) of our patients had been off work, and in 48 (71%) the period of sick-leave exceeded 1 month. Pompholyx thus often caused occupational problems, although these could not be related to any special type of work. In no case did pompholyx require change of occupation or disability pension.

Pompholyx is consistently difficult to treat with topical remedies, and our patients were no exceptions. Good effects of PUVA treatment have recently been reported (20, 21). Three patients with severe, chronic pompholyx and positive patch test reactions to nickel responded nicely to PUVA treatment.

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