

PUSTULOSIS PALMARIS ET PLANTARIS

A Follow-up Study of a Ten-year Material

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Abstract. A follow-up study of a 10-year clinical material of 272 cases of pustulosis palmaris et plantaris is presented. The incidence of overt psoriasis was 6.1% and as high as 24.4% if probable cases of psoriasis were also included. The study was made via a self-administered questionnaire giving a healing frequency of 30% both when calculated 5 and 10 years after the onset. Relapses were stated by 18% of those who at the time of this study still had pustular complaints. The tendency to relapse was the same in the first as in the second 5 year period after cure. A re-examination was made of 82 cases representative of those with remaining complaints. Of those, only 50% had pustular lesions and the other different kinds of erythema and keratoses, thus giving a somewhat brighter prognostic outlook. No difference was found, however, as regards onset of the pustular lesions, the tendency of healing and relapse in patients with and without psoriasis. There is a possibility of increased susceptibility to infectious diseases and some evidence for correlations between pustulosis palmaris et plantaris and psoriasis and rheumatic disorders. These findings are in agreement with the opinion that pustulosis palmaris et plantaris represents an alteration of the normal immunological response.

Since Crocker in 1888 (6) and Hallopeau in 1880 (8) and 1897 (9) described relapsing bullous and pustular eruptions of the hands and feet for the first time, opinions about the condition have been many and various. The main problems have concerned the classification of the different kinds of clinical pattern of the condition, and the correlation to psoriasis (3, 12, 16). Extensive reviews of the literature have been given by Veltman and Schuermann (21) and Ashurst (2).

In Sweden most relapsing pustular eruptions of the soles and palms have been regarded as a variant of pustular psoriasis (5, 10, 19, 20). This opinion is also accepted by Ingram (13), though other authors, i.e. Lever (15), look upon the condi-

tion as pustular bacterids unrelated to psoriasis, and prefer the term pustulosis palmaris et plantaris.

The aim of this paper is not to discuss the classification of the pustular condition but rather to study the course and the prognosis in a clinical material and the incidence of other diseases, and whether there are any differences in those aspects correlated to the presence of psoriasis. For this reason, patients with overt psoriasis were not excluded as is often the case in studies of patients with these conditions (2, 7).

MATERIAL AND METHODS

All patients treated for palmar and/or plantar pustulosis at the Department of Dermatology, Karolinska sjukhuset, Stockholm, during a 10 year period, 1959-1968, were sent a questionnaire by post containing questions concerning age at onset and localization of the disease, the duration of the pustular lesions, relapses, incidence of psoriasis and other diseases, and occurrence of pustular lesions and psoriasis among close relatives (parents, sisters and brothers, children).

The diagnosis of pustulosis palmaris et plantaris was made on the clinical picture. In a few cases histological examinations of skin biopsies were also made. Excluded from the series were cases with evidence of mycotic infection.

During the given period of 10 years a total of 272 patients (total group) were treated at the department; the age and sex distribution are presented in Table 1.

Answers to the questionnaire were received from 248 patients, 91.2% (response group). The age and sex distribution, presented in Table 1, did not differ from that of the total group. The non-response group thus consisted of 24 patients, of whom 4 were stated to be dead.

Those in the response group who mentioned pustular complaints of more than 2 years' duration and were willing to take part in a re-examination, 114 cases, were invited to such a re-examination at the hospital. Examina-

Table I. Age and sex distribution

Age	Total group n = 272		Response group n = 248		Follow-up group n = 82	
	♂	♀	♂	♀	♂	♀
<20	1	0	1	0	1	0
20-29	10	38	8	35	3	15
30-39	4	45	4	41	2	12
40-49	18	41	17	37	6	14
50-59	17	50	16	46	4	13
>60	10	38	10	33	0	12
Total	60	212	56	192	16	66

tion was made of 82 of the patients (follow-up group) about 4 to 6 months after their answering the questionnaire.

At re-examination, the history of the pustular condition and of the incidence of other diseases, especially infectious ones, was completed and an examination made by the authors, regarding also the dermatologic and general somatic status.

RESULTS

Age at onset of the disease in the response group is shown in Fig. 1. The same distribution was found for the total group.

The localization of the lesions at onset and at maximal involvement is summarized in Table II.

The tendency to healing stated by the response group is given in Table III, and the duration of

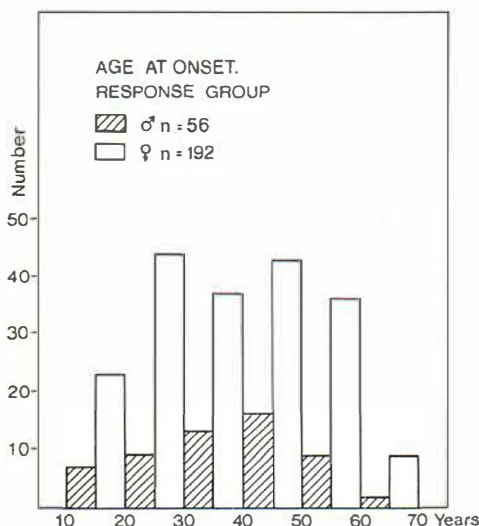


Fig. 1.

Table II. Localization of the pustular lesions at onset correlated to the maximal involvement. Response group (♂ n = 56, ♀ n = 192) (in per cent)

Localization at onset	Localization of maximal involvement					
	Only palmar		Only plantar		Both palmar and plantar	
	♂	♀	♂	♀	♂	♀
Palmar	4	11	0	0	37	44
Plantar	0	0	18	16	36	22
Both palmar and plantar	0	0	0	0	2	6
Unknown	—	—	—	—	3	1
Total	4	11	18	16	78	73

the pustular lesions in healed patients in Table IV. In Table V is shown the stated time since healing.

Continuing complaints were mentioned by 151 out of the 184 not healed patients in the response group. Thus 33 cases had had relapses. Table VI shows the duration of symptom-free periods prior to relapse.

The incidence of psoriasis as stated by the

Table III. Prognosis. Response group

Years since onset	Healed		Not healed		Total	
	♂	♀	♂	♀	♂	♀
<5	4	15	6	45	10	60
5-10	7	13	12	58	19	71
>10	8	17	18	44	26	61
Unknown	—	—	1	—	1	—
Total	19	45	37	147	56	192
In %	34	23	66	77	100	100

Table IV. Duration of the lesions in healed patients. Response group

Years of the lesions	♂	♀
<1	8	21
1-5	6	14
5-10	5	8
>10	0	1
Unknown	—	1
Total	19	45

patients is presented in Table VIII, as also is the stated incidence of psoriasis in the family.

The incidence of eczema is given in Table IX.

The age at onset of the pustular eruptions for the follow-up group did not differ from that of the response group, and is thus not tabled.

The tendency of healing for the follow-up group is given in Table VII. The incidence of psoriasis in the follow-up group, is presented in Table VIII, and the incidence of some other diseases in Table X.

DISCUSSION

Onset of the lesions

In the questionnaire study, answers were received from 91.2% of the patients in the total group.

Table V. *Years after healing. Response group*

Years after healing	Response group	
	♂	♀
<1	5	7
1-5	6	22
>5	8	16
Total	19	45

Table VI. *Duration of symptom-free periods (years) prior to relapse, Response group*

Duration of the lesions after the first onset	Years without symptoms before first relapse				Total
	<1	1-5	>5	Unknown	
	<1	5	4	8	
1-5	4	1	4	2	11
>5	2	0	1	0	3
Unknown	0	1	1	0	2
Total	11	6	14	2	33

Table VII. *Prognosis. Follow-up group (n = 82)*

Years since onset	Remaining complaints					
	Healed		Keratoses and Erythema			
	♂	♀	Pustules			
2-5	0	4	3	7	0	11
5-10	1	1	3	15	2	11
>10	0	0	4	9	3	8
Total	1	5	10	31	5	30

Table VIII. *Incidence of psoriasis (in per cent)*

	♂	♀
Response group (case records)	9	2
Follow-up group (overt psoriasis)	12	5
Follow-up group (suspect psoriasis)	19	18
Psoriasis in the family		
Response group	14	11
Follow-up group	25	10

Table IX. *Incidence of eczema. Response group (in per cent)*

	♂ n = 56	♀ n = 192
Eczema as child	7	8
Eczema as adult	20	18

Table X. *Incidence of other diseases. Response group and follow-up group (in per cent)*

	Response group		Follow-up group	
	♂	♀	♂	♀
	n = 56	n = 192	n = 16	n = 66
Iterative pharyngitis, bronchitis	38	35	38	38
Sinusitis	16	19	25	27
Otitis as child	24	27	44	35
Otitis as adult	15	14	31	17
Urinary tract infections	10	17	13	20
Rheumatic disease			18	12

Those who did not answer did not differ from those answering as regards age, sex, age at onset, or clinical pattern of the disease as seen from the case records. Thus the total group will not be discussed per se.

The onset of the disease occurred mostly between the ages of 20 and 60. In 12% the onset was mentioned before 20 years and in only 4% after 60 years of age. The youngest in this series was 15 years of age at onset. Between the ages of 20 and 60 there are no significant differences between the age groups (Fig. 1).

Most of the patients had had pustular lesions on both soles and palms. In about one-fourth of the patients the lesions had been limited to either the soles or the palms (Table II). In nearly all cases the distribution of the lesions was mainly

symmetrical. No difference was found concerning the tendency to involve both the soles and the palms if the pustular lesions started in either the soles or the palms, nor if the disease was contracted at an early age or in older age.

Healing

In the response group 80% of the males and 69% of the females stated the onset of the disease as being more than 5 years earlier, and 46% of the males and 32% of the females more than 10 years earlier (Table III). In the whole response group 34% of the males and 23% of the females were cured at the time of the questionnaire.

Among those with the onset of the disease more than 5 years earlier, 33% of the males and 23% of the females were healed.

Among those with the onset more than 10 years earlier, 31% of the males and 28% of the females were healed. The difference between the sexes, although not significant statistically, is numerically equal. That means that about three-fourths of the patients still had complaints more than 10 years after the inception of the disease.

The duration of the lesions in the healed patients, as shown in Table IV, was less than 1 year in 42% of the males and 47% of the females, and more than 5 years in 26% of the males and 20% of the females.

As is seen in Table V, 42% of the healed males and 36% of the healed females had been free from the disease more than 5 years, but 26% of the males and 16% of the females only less than 1 year.

In the response group, 185 patients mentioned that they still had complaints when answering the questionnaire. Of them 114 patients were invited to a re-examination. Those who could not come to the re-examination but still had complaints did not differ from those re-examined as regards age, sex, age at onset or duration of the disease. Thus the follow-up group is considered to be representative of patients who still had complaints and who have had the disease more than 2 years.

As is shown in Table III, 81% of the males and 67% of the females in the follow-up group had the onset of the disease more than 5 years earlier, and 44% of the males and 26% of the females more than 10 years earlier.

During the time between the questionnaire study and the re-examination, 4 to 6 months, 7% of

the patients had been cured; 50% of the cases still had pustules; 43% had different kinds of erythema and/or keratoses of the soles and the palms, but only very few of them had keratosis of a more considerable degree.

Nearly all patients in the follow-up group stated that the intensity of the disease had ceased gradually during the last few years.

Thus the prognosis figures are somewhat brighter when calculated on the follow-up examination than on the questionnaire study, mostly because of difficulties in getting differentiated answers when using a self-administered questionnaire.

Relapses

Relapses after temporary healing were stated by 33 patients in the response group among those who still had complaints (18%). The cases are few, but the tendency to relapse seems, however, to be the same in the first and the second 5 year period after healing (Table IV).

52% of the relapses occurred within 5 years of the healing, and 42% more than 5 years after healing.

Thus the risk of a relapse is rather high even after more than 5 years from the curing of the disease.

Incidence of psoriasis

The correlation to psoriasis is one of the main questions in the discussion of pustulosis palmaris et plantaris. In this study, cases of overt psoriasis were not excluded from the beginning. In the response group 9% of the males and only 2% of the females had overt psoriasis according to the case records.

Among the non-response part of the total group, 9 out of the 24 cases (38%) had psoriasis according to the case records.

However, the incidence of psoriasis (in almost all cases mild) in the follow-up group was 12% in the males and 5% in the females when considering patients with clear evidence of psoriatic lesions at the time of the re-examination, and another 19% in the males and 18% in the females when considering anamnestic data of possible psoriatic lesions or actual lesions such as punctate nail changes or scaly plaques of the scalp.

Thus, in the follow-up group, the incidence of overt psoriasis was 6.1%. If, in addition, possible cases of psoriasis but without actual psoriatic le-

sions at the time of the re-examination are taken into consideration, the incidence figure will rise to 24.4%.

These figures are significantly higher than those given for the Swedish population by Hellgren (11), e.g. 2.5% for the males and 1.5% for the females. His figures may be somewhat low. At least for the Stockholm region the prevalence seems to be about 4% (17).

The stated incidence of psoriasis in the closest relatives (parents, sisters and brothers, children) is remarkably high (Table VIII).

No difference was found as regards the onset of the pustular lesions, the distribution of the pustules, the tendency to healing or relapse in patients with and without psoriasis.

Altogether, the incidence figures found in this study strongly support the opinion that there is a close correlation between pustulosis palmaris et plantaris and psoriasis, although it is not possible to postulate that the two conditions are the same disease.

Differences between the sexes

In the total group and the response group 22% of the patients are males, and in the follow-up group, 20%. This predominance of females is well known from the literature, i.e. Ashurst (2) found 10% males and Ingram (13) about 30% males.

There is in this study, however, no difference between males and females as regards the age at onset of the disease, the distribution of the lesions, or the tendency to heal or relapse. There is a difference in the incidence of psoriasis which cannot be explained in this study.

Incidence of eczema and other dermatoses

In the response group, various types of eczema were mentioned by 21% of the patients. In 8% the eczema had occurred in childhood (Table IX). Eczema occurring in adults was mainly contact dermatitis of toxic or allergic nature, seborrhic, or hypostatic.

Incidence of other diseases

Increased susceptibility to infectious diseases seems to be rather common among patients suffering from pustulosis palmaris et plantaris. Table X presents the given frequencies for some typical infectious disorders for the response group. Included in the urinary tract infections in the males

are five cases of prostatitis (9% of the males) which is a relatively high figure for clinical prostatitis. The figures for sinusitis and otitis, especially among the adults, are also relatively high.

In the follow-up group the figures for infectious diseases are essentially the same but somewhat higher as regards otitis both in childhood and in adulthood. The frequency of urinary tract infections in the males is notable high here. The figures for the follow-up group are given after the authors had interviewed the patients, which may explain the difference to some extent.

In the follow-up group, 13% of the patients had articular complaints resembling rheumatoid arthritis, only one of them with overt psoriasis of a very mild degree (Table X). There is also included a male of 47 with a typical Reiter's syndrome in the early twenties, typical psoriatic lesions appearing about 10 years later, and with severe pustulosis of both the soles and the palms for 5 years. He illustrates the presumed connection between the syndrome of Reiter and psoriasis (14).

The incidence of articular complaints resembling rheumatoid arthritis in the follow-up group is high as compared with the prevalence figure of 2.7% recently given by Allander (1).

There is in this study some evidence for correlations between pustulosis palmaris et plantaris and some other diseases, especially infectious and rheumatic diseases. This is not in accordance with Ashurst (2). However, he accepts the opinion that pustulosis palmaris et plantaris represents a form of individual response rather than a specific disease. It seems correct to assume that this is an expression of an change in the normal immunological response. Under such circumstances the correlation to some other diseases found in this study is rightly included in this view of the condition. The decreased phagocytic activity of the peripheral leukocytes shown by Molin & Rajka (18) is also in agreement with this view. Some evidence of other immunological disturbances is also to be found when investigating the occurrence of auto antibodies in pustulosis palmaris et plantaris, which will be discussed elsewhere (4).

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