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CONTACT ALLERGY AND PSORIASIS

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The study was conducted over a two-year period and included 48 psoriatic patients with palmar and plantar lesions and 61 psoriatic patients without palmar and plantar lesions who served as controls. The objective was to establish the incidence of contact sensitization and its importance as the causative factor in palmar and plantar psoriasis. The most frequent contact allergens were: nickel sulphate, mercapto mix, balsam of Peru, potassium dichromate, mercury mix and fragrance mix. Patch tests were positive in 41.7% psoriatics with palmar-plantar psoriasis and in only 6.6% of psoriatics without palmar-plantar involvement. The study showed an increased incidence of contact allergy in patients with palmar-plantar psoriasis.

Key terms: allergic contact dermatitis, contact sensitization, palmar-plantar psoriasis.

The incidence of palmar and plantar lesions in psoriatic patients reported in different studies varies from 2 to 21.1% (1–5). The problem of diagnosis of psoriasis appears when the palms and soles are the only sites affected. In such cases chronic hyperkeratotic dermatomycosis, chronic irritant dermatitis, and chronic allergic dermatitis may be involved. Hands are more frequently exposed to the effect of external factors – physical and chemical, and to allergic sensitization.

Our objective was to establish the incidence of contact allergy and its importance as the provoking factor in palmar and plantar psoriasis (4).

SUBJECTS AND METHODS

The subjects in the study were 48 patients (28 women and 20 men) with palmar and plantar psoriasis. The study was carried out in 1989 and 1990. The patients' ages ranged from 22 to 78 years, median 49.5 years. The peak incidence of psoriasis was recorded in the 40–50 age group. The mean duration of psoriasis was 6.6 years. For each patient a case history was prepared containing data on family history, the history of other previous diseases and their durations, occupational history, and dermatological status so that the type and extent of the skin and nails involvement could be determined. The diagnosis

was made on the basis of clinical and mycological examinations, and patch testing. It was confirmed by histopathological examination.

The control group consisted of 61 patients with typical psoriasis vulgaris but without palmar and plantar lesions.

Patch testing was carried out in all subjects. The standard procedures of the International Contact Dermatitis Research Group (6) were carried out with 23 allergens supplied by the Institute for Immunology, Zagreb. Test results were evaluated after 48 and 72 hours. Irritant reactions were absent.

RESULTS

Mycological finding was negative in all the 48 patients with psoriasis of the palms and soles. A positive family history was found in three patients (two fathers and one mother). Histopathological examination always confirmed the diagnosis of psoriasis. Nails were involved in 38 patients (80%) manifesting yellow discoloration, subungual hyperkeratosis and onycholysis.

Positive results of patch testing in the two groups of patients are given in Tables 1–3. In 1989 patch tests were positive in 11 patients out of 23, predominantly in women. The

Table 1

Positive patch tests in 11 out of 23 patients with palmar-plantar psoriasis examined in 1989

Patient No.	Sex	Age	Occupation	Substance	Reaction
1.	f	50	housewife	cobalt chloride	+
				nickel sulphate	++
2.	f	36	employee	cobalt chloride	+
3.	f	52	employee	balsam of Peru	++
4.	f	46	worker	balsam of Peru	+++
				fragrance mix	+++
5.	m	59	pensioner	potassium dichromate	+++
				resorcinol	+
				balsam of Peru	+
				mercapto mix	+++±
6	f	30	nurse	potassium dichromate	+++
				mercury white praec.	+++
				cobalt chloride	++
7.	m	46	director	epoxy resin	+
				fragrance mix	++
8.	f	68	pensioner	balsam of Peru	++
				fragrance mix	+
9.	m	51	worker	mercury white praec.	+++
10.	m	55	veterinarian	potassium dichromate	+++
				cobalt chloride	+
				paraaminophenol	++
				shaving cream	+
11.	f	58	housewife	wood tar	+±

Table 2

Positive patch tests in 9 out of 25 patients with palmar-plantar psoriasis examined in 1990

Patient No.	Sex	Age	Occupation	Substance	Reaction
1.	f	27	worker	mercury white praec.	+
				detergent »Čarli«	+
2.	f	36	typist	nickel sluphate	+++
				cobalt chloride	+
3.	f	57	delivery	fragrance mix	++
				wood tar	+
				detergent »Čarli«	+
				detergent »Vim«	+
4.	f	22	student	potassium dichromate	+
				mercury white praec.	+
				fragrance mix	+
				wood tar	++
5.	f	41	nurse	nickel sulphate	+
				antiseptic »Cetavlon«	+++
6.	f	23	worker	potassium dichromate	++
				cobalt chloride	+
7.	m	40	worker	detergent »Vim«	+
				detergent »Čarli«	+
				detergent »Faks«	+
8.	m	29	driver	mercury white praec.	+
				wood tar	+
9.	m	40	TV mechanic	nickel sulphate	++

+erythema, oedema, some papules,
++ erythema, oedema, papules and vesicles;
+++ infiltration, numeorus papules and vesicles with some bullae.

Table 3

Positive patch tests in 4 out of 61 psoriatic patients without palmar-plantar lesions (control group)

Patient No.	Sex	Age	Occupation	Substance	Reaction
1.	f	47	employee	Anesthesin	+
2.	m	28	worker	chromium nitrate	+
3.	f	23	worker	nickel sulphate	+++
				cobalt chloride	+
				fragrance mix	+
4.	f	32	worker	chromium nitrate	+

most frequent contact allergens were: mercapto mix-1, balsam of Peru-4, potassium dichromate-3, mercury white praecipitate-2, fragrance mix-2, cobalt chloride-2 and nickel chloride-1. In 1990 patch tests were positive in nine patients out of 25, again predominantly in women. The contact allergens were: nickel sulphate-3, detergents-6, Cetavlon-1, potassium dichromate-2, wood tars-2, fragrance mix-2, cobalt chloride-2 and mercury white praecipitate-2.

Among the 61 control patients four had positive patch test results. Three of these had only one positive test and one patient had three positive tests. Mycological finding was always negative. The diagnosis of psoriasis was confirmed by histopathological examination in all cases.

DISCUSSION

The main symptoms in our psoriatic patients with palmar-plantar involvement were hyperkeratosis, rhagades and desquamation. The persistence of palmar lesions in psoriatics was present in 20 patients (41.7%) in whom contact allergy was verified. Contact allergy was found only in four psoriatics (6.6%) out of 61 patients who had no palmar-plantar lesions (Table 4).

A major study of psoriasis in Croatia was conducted within an epidemiological investigation (7) comprising 8 416 persons of whom 131 were psoriatics; the prevalence was 1.55%. Those included workers from a plastics production in Split (n=388), from the aluminium production in Šibenik (n=238), public transport workers in Šibenik (n=121), hairdressers in Zagreb (n=258), railway workers from all Croatia (n=700), railway depot workers in Zagreb (n=519), workers from a textile industry in Zagreb (n=1 132) and workers from a match factory, chemical and cosmetics industry and textile industry in Osijek (n=5 060). The prevalence of psoriasis in Croatia was between 0.4 and 2.93%, median 1.55%. The screening of occupational diseases in Croatia in 1989 demonstrated that 50 out of 1 705 workers were psoriatics (7). The established prevalence of 2.93% was similar to that in northwestern Europe which varied from 1.5 to 2.0% (7). In his study of psoriasis *Lomholt* (8) claimed 2.8% of the total population of the Faroe Islands to have psoriasis. According to *Farber and Scott* (9) the range of prevalence in the Scandinavian countries was between 1.4 and 2.8%.

Palmar psoriasis is often mistaken for chronic contact dermatitis and tends to remain undiagnosed dermatosis of the palmar region, especially in the early stages (4, 10). Contact allergy may be a provoking and maintaining factor in psoriatic lesions (4, 5, 10, 11). The studies of the pathological mechanism of psoriasis seem to involve as many as 21 different levels – intracellular, intercellular or cellular ones (12). At the cellular level, the state of activity of most cells studied has been identified. The various defects in cell-mediated immunity in psoriasis might cause a loss of tolerance to nickel, high levels of which have been detected in psoriatic keratin (13, 14). Nickel exposure in patients with psoriasis may significantly influence the course of the disease (15). A practical problem concerns assessment of nickel sensitivity in young women suffering from persistent pustular psoriasis (15). In psoriatics with the experimentally induced hypersensitivity to dinitrochlorbenzene the period of latency before manifestation of allergy is reported to be twice as long as that in the control group. The increased tendency to sensitization in patients with allergic contact eczema is facilitated if the allergen comes in contact with the eczematous skin lesions. A high degree of sensitization in patients with contact eczema can nevertheless

be explained, to some extent, by their lower threshold of tolerance to primary irritants (16).

CONCLUSION

The results of the study showed an increased incidence of contact allergy in patients with palmar and plantar psoriasis. The following procedures are recommended for the diagnosis of psoriasis with palmar-plantar involvement: patch testing, follow-up of contact allergy as provoking factor that may significantly influence the course of psoriasis, and examination of contact sensitivity with a view to determining the patient's working capacity.

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Sažetak

KONTAKTNA ALERGIJA I PSORIJAZA

Istraživanje je provedeno tijekom dvije godine u skupini od 48 pacijenata s palmoplantarnim oblikom psorijaze i u kontrolnoj skupini od 61 pacijenta s psorijazom ali bez oštećenja na dlanovima ili stopalima. Cilj je bio utvrditi učestalost kontaktne senzibilizacije i njeno značenje kao uzročnog faktora u nastanku palmoplantarne psorijaze. Najčešći kontaktni alergeni bili su nikalj sulfat, smjesa merkapto spojeva, peruvijanski balzam, kalijev bikromat, smjesa živinih spojeva i smjesa mirisa. Epikutani testovi bili su pozitivni u 41,7 % pacijenata s palmoplantarnom psorijazom i samo u 6,6 % kontrolnih pacijenata. Istraživanje je pokazalo povećanu učestalost kontaktne alergije u pacijenata s palmoplantarnim oblikom psorijaze.

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Ključne riječi: alergijski dermatitis, palmoplantarna psorijaza, preosjetljivost na kontaktne alergene.