CONTACT DERMATITIS IN TRIVANDRUM

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One hundred patients (63 males and 37 females) were patch tested. Maximum number (32) of cases were skilled labourers, housewives (19) and manual labourers (10). Cement (24), metals (22) and foot-wear (14) constituted the major causes for dermatitis. Fifty one patients showed positive patch tests with potassium dichromate. The source of chromate sensitivity in 47.03% was cement and in 33.32% metals in the wearing apparel.

Key words : Contact dermatitis.

It is well established that almost all individuals are susceptible to contact dermatitis.[1-2] We have undertaken a detailed study of contact dermatitis cases attending our department, to find out the type of allergens causing contact dermatitis in this area.

Materials and Methods

One hundred patients, suspected to have contact dermatitis who attended from August 1985 to September 1986 were taken for this study. The data and patch test results of each patient were recorded on a proforma. Special record was made of the occupation, the site of onset, and the history of contactants at the house or at work. The suspected agents were used for patch tests.

Standard allergens for patch test were obtained from E Merck (India) (Desensol), and from Dr J S Pasricha, All India Institute of Medical Sciences, New Delhi. Both the allergens were not used simultaneously in the same patient.

The patch test antigens were broadly classified into the following groups : (1) Foot-wear, (2) Metals, (3) Cement, (4) Textiles, (5) Cosmetics, (6) Locally applied drugs, (7) House-wives antigens, (8) Milker's dermatitis antigens, and (9) Plant dermatitis antigens.

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Patch test reactions were scored as follows : (—) no reaction, (±) doubtful positive, (+) palpable erythema, non-vesicular, (++) strong reaction (erythema with oedema and vesiculation), (+++) as for++ but spreading beyond the test site (bullous or ulcerative).[3] The +, ++ and +++ reactions were considered positive. Reading was taken again at 72 hours and at 1 week, for patch tests that did not show any reaction at 48 hours.

Results

Out of the 100 patients, 63 were males and 37 females. The age of the patients varied from 13 years to 70 years. Sixty six percent were in the age group of 10-39 years.

The duration of the illness varied from less than 1 month to 12 years. Maximum number (32%) of patients were skilled labourers, 19% were housewives, 10% manual labourers and 9% students.

The site of involvement was dorsum of the feet in 32 cases, forearms in 11 cases, dorsum of hands in 10 cases, finger-tips in 10 cases and other areas in the remaining 37 cases. Cement (46.4%) was the commonest cause of involvement of the hands and feet.

Out of the 100 patients patch tested, 90 patients showed positive reactions to one or more substances (Table I). No patient showed positive reaction with vaseline control. Chromate was the commonest cause of contact dermatitis in this area (Table II).

Table I. Positive patch test results in various groups of allergens.

Allergen group	Number of positive cases
Foot-wear	14
Metals	22
Cement	24
Rubber	12
Textile	5
Locally applied drugs	4
Housewives antigens	3
Milker's dermatitis antigens	5
Plant dermatitis antigens	4
Others	7

Table II. Source of chromate sensitivity.

Source	Number of patients	Percentage
Cement	24	47.03%
Leather	2	3.92%
Housewives	1	1.96%
Paints	2	3.92%
Metals	17	33.32%
Printing matter	1	1.96%
Factory worker	1	1.96%
Engineering	1	1.96%
Miscellaneous (Source not found)	2	3.92%
Total	51	100%

Fourteen cases had contact dermatitis due to chappals. Of these, 12 patients were allergic to rubber, 6 patients to plastic, 4 patients to leather and 3 patients to adhesives alone or in combination.

Forty six patients showed positive patch tests with metals. Of these, 24 cases were having contact dermatitis due to cement while the remaining 22 patients showed positive patch tests with articles such as spectacles, watch-strap, ornaments, blouse hooks and pins. Positive reactions with chromium were seen in 89.13% of the patients, nickel in 21.7% and cobalt in 8.7% either alone or in combination. Of the 24 patients having cement dermatitis and positive patch tests with potassium dichromate, 2 patients were positive to cobalt sulphate as well. None of these patients showed sensitivity to nickel.

Among the 5 patients with contact dermatitis due to clothing, 4 patients showed positive patch test reactions with the cloth as such. Two positive cases were due to the khaki uniform, cotton and polyester. Among the dyes used in the cloth, one showed positive patch test to paraphenylenediamine, but none to eosin. Another patient showed reaction to formaldehyde and potassium dichromate.

Among the cosmetics, contact dermatitis due to hair dye (paraphenylenediamine) was noted in 2 patients. Contact dermatitis due to kumkum was seen in 3 patients and due to sandal paste in 2 patients.

Contact dermatitis due to plants was found in 4 patients. Three patients showed positive patch test reactions to *Holigarna arnottiana* (cheru maram in Malayalam) and one patient to *Parthenium hysterophorus*.

Iodochlorohydroxyquinoline (chinoform) was the commonest sensitiser (4) among the locally applied drugs. One of these patients was allergic to neomycin as well. Of the 3 medical personnel, penicillin and streptomycin were the offending drugs in two, and formaldehyde and adhesive plaster in the other.

In the case of housewives dermatitis, onion and hexachlorophene were the causes in one, garlic and onion in another, and potassium dichromate and hexachlorophene in the third.

Out of 11 cases suspected to have dermatitis due to cow's dander (Milkers' dermatitis), only 5 patients showed positive patch tests to udder shaves.

Comments

In our study contact dermatitis was more common in men than in women, unlike some previous studies.[2,3] It was also rare at the extremes of age because this group has a simpler environment than the other age groups.[2,3] Sensitisation in young children has no doubt been described.[3,4] When the duration of the illness was longer, it was more difficult to find the contactant. This could be due to the selection of wrong patch test allergens or when the individuals had bizzare patterns of dermatitis which could not be grouped accurately.

In the case of manual labourers, contact dermatitis was commonly found on the extremities as occupational dermatitis usually remains confined to the hands and feet.[5,6]

Among the metals tested, chromium showed positive results in 89.13% of the patients, nickel in 21.74% and cobalt in 8.7%. Contact sensitivity from metals especially chromium is a well known occupational disease.[7,8] Sensitivity to chromate was mainly due to occupational contact in our patients and that too with workers involved in building construction. Nickel sensitivity was more frequent in women and it was due to non-occupational contact such as jewellery. In Stockhom, 30% to 40% of the patients with chromium allergy are simultaneously sensitive to cobalt due to its presence in the cement,[8] but in our series only 2 (8%) out of 24 had simultaneous sensitivity to cobalt.

Of the antibiotics producing contact dermatitis, neomycin, streptomycin, and penicillin lead the list in many studies.[9-12] Chinoform was the commonest in our series. Pure sandal wood paste as well as the perfumes cause dermatitis infrequently among the people using it.[13] We had 2 patients having contact dermatitis due to sandal paste and 3 patients to kumkum.

We suspected milker's dermatitis in 11 patients who were milking the cow as part of their daily routine or in those who had taken it as their profession.[14] Out of the 11 suspected, only 5 patients showed positive patch test reaction to calf's dander.

Contact dermatitis due to plants was seen in 4 patients. Three patients showed positive patch tests to *Holigarna arnottiana* and 1 patient to *Parthenium hysterophorus*. *Holigarna* plants are found in the forests along the western coast, the Western Ghats, the Niligiris and Travancore.[15] Contact dermatitis due to this plant has not been described earlier. Of the different reports available on plant dermatitis in India, *Parthenium hysterophorus* is the most common contact sensitizer plant wherever it is found.[16-19]

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