

Patch testing in hand eczema at a tertiary care center

Sir,

Hand eczema is a descriptive diagnosis for dermatitis largely confined to the hands, and it does not make any presumption about the etiology.^[1] It may be endogenous or exogenous (allergic or irritants) in origin.^[1] Most of the cases of hand eczema have a multifactorial etiology,^[1] wherein the eczema is caused and perpetuated by exogenous factors in individuals who are susceptible to such processes due to endogenous factors.^[1,2] Understandably, identification and avoidance of the external contactants is of paramount importance in appropriate management of hand eczema. As clinical differentiation between chronic allergic and irritant hand eczemas is often impossible, patch testing becomes an important diagnostic tool for identification of the allergen/allergens responsible for the eczema.^[3] We undertook a study to identify the allergens showing positive reactions in patch test in patients with hand eczema.

Patients with hand eczema with or without eczema of the feet attending the dermatology outpatient department were recruited for the study over a period of 21 months (January 2004 to September 2005). Patients with eczema in other areas of the body (except the feet) and those with other skin diseases involving the hand were excluded. Clinically hand eczema was classified into vesicular, fissured, hyperkeratotic, and pompholyx type.^[2] Patch testing was done in all cases utilizing the Indian standard series approved by CODFI (Contact and Occupational Dermatoses Forum of India) and manufactured/supplied by Systopic Laboratories, New Delhi. The recommendations of the North American Contact Dermatitis Group^[4] were followed for patch test reading. The results were tabulated and analyzed. Ethical committee clearance was taken from the institute.

Thirty-six cases of hand eczema with or without eczema of the feet were included in the study. There were 30 males and 6 females in our study. The average age of the patients was 39.5 years, with a range of 19 to 65 years. There were 13 masons, 6 farmers, 3 housewives, and 14 miscellaneous workers (vendors, electricians, clerks, and painters). History of atopy was present in 1 case. The average duration of hand eczema at presentation was 28.6 months (with a range of 1 month to 15 years). The dorsa of hands were involved in 15 cases, palmar aspect in 13 cases, and both sides of the hands in 8 cases. The morphological patterns included fissuring in 19 cases, hyperkeratotic type in 4 cases, vesicular type

in 3 cases, and pompholyx in 1 case. Eczema of the hand associated with eczema of the feet was seen in 9 cases. Out of the 36 cases, patch testing was positive in 19 (52.78%) cases. Potassium dichromate was the most common sensitizer, seen in 10 cases. Other allergens were colophony in 5 cases, black rubber mix in 3 cases; and balsam of Peru, fragrance mix, ethylenediamine, cobalt, neomycin, and nitrofurazone in one case each. Potassium dichromate positivity was a feature of hand eczema in masons. However, in other cases, no correlation could be established.

Hand eczema is one of the commonest dermatological disorders.^[5] It is presumed to be more common in females, as shown in many earlier studies.^[2,6,7] However, male predominance in hand eczema was noted by Kishore *et al.*,^[5] as in our study. Atopic diathesis is the most common endogenous cause of hand eczema.^[1] Suman and Reddy (India) reported history of atopy in 36% of their patients with hand eczema.^[8] In our study, only 1 patient out of 36 patients had personal history of atopy.

Occupation has significant bearing on hand eczema because of exposure to various contactants at workplace.^[7,9] In fact, occupational hand eczema comprises 90% to 95% of all occupational skin diseases in Denmark.^[7] In the study by Suman and Reddy,^[8] the most common occupation was household work (37%), followed by masonry (14%) and others. In the Indian study by Kishore *et al.*^[5] the commonest occupational group among the females was the housewives (68.2%), whereas that among males comprised of skilled or semiskilled laborers (53.6%). In a study from Denmark,^[7] the common occupations associated with higher incidence of hand eczema were health care, bakery, hairdressing, kitchen work/cooking. Masons were the most predominant occupational group in our study, followed by farmers and housewives.

The percentage of positive patch test reactions in our study was 52.78%. However, positive patch test reactions ranging from 46.7% to 82% have been reported in various studies.^[2,5,8] The most common allergen in our study was potassium dichromate, which was comparable to the Denmark study,^[7] where common allergens were chromate, rubber additives, nickel, and epoxy resin. Similarly, the most common allergen in the study by Kishore *et al.* (India) was potassium dichromate (26%), followed by nickel (18%).^[5] Chromates are present in cements, leather, matches, bleaches, yellow paints, varnishes, certain chromates containing glues, soap, and detergents.^[3] Chromates are part of earth's crust, and traces of chromates are present

in practically all raw materials.^[3] Patients in our study had significant occupational exposure to chromates, thereby increasing the risk of contact sensitivity to chromates, which could explain the high number of positive patch test reactions to potassium dichromate noted by us.

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