

Short Communication

Pattern of cosmetic sensitivity in Indian patients

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Key words: allergic contact dermatitis; irritant contact dermatitis; cosmetics; ROAT; use test; patch testing; *bindi*; *sindoor*; vermillion; *kumkum*; *surma*; *tilak*. © Munksgaard, 2001.

Particular cosmetics, such as *bindi*, *surma*, *sindoor* and *tilak*, are applied in India and in certain other countries among Hindus (1).

metic by ROAT (2× daily for max. 7 days) or use test (normal use for max. 2 weeks).

Patients and Methods

50 clinically suspected cases of contact dermatitis due to cosmetics were subjected to patch testing with the Indian standard series of allergens approved by the Contact and Occupational Dermatoses Forum of India (CODFI), and their own cosmetics (Table 1), using Finn Chambers on Micropore tape, and reading at D2 and D3 according to the recommendations of the ICDRG (2). Photopatch testing was also carried out when indicated (3). In doubtful cases, the patient was re-exposed to the cos-

Results

The peak incidence of disease was in the 20–49 years age group (80%), 44 out of the total of 50 cases being female. *Bindi*, hair dye and face creams were the most commonly suspected cosmetics in descending frequency. 76% of patients itched and 50% had pigmentary changes. The face was the most commonly affected site. Patch-test results are shown in Table 2. Of 10 patients photopatch tested, 1 was positive to hydroquinone. *Bindi* dermatitis was seen in its circumscribed area of application on the forehead. Dermatitis

Table 1. Cosmetic allergens applied (supplied by Systopic® Pharmaceutical Ltd. India)

Allergens	%	Vehicle	Allergens	%	Vehicle
benzyl alcohol	1%	pet.	vanillin	10%	pet.
benzyl salicylate	2%	pet.	cetrimide	0.5%	pet.
2-bromo-2-nitropropane-1,3-diol	0.25%	pet.	jasmine synthetic	2%	pet.
butylated hydroxyanisole (BHA)	2%	pet.	hexamine	2%	pet.
butylated hydroxytoluene (BHT)	2%	pet.	potassium dichromate	0.5%	pet.
cetyl alcohol	5%	pet.	cobalt chloride	1%	pet.
4-chloro 3-oxylenol (PCMX)	0.5%	pet.	formaldehyde	1%	aq.
propyl gallate	1%	pet.	4-phenylenediamine base	0.1%	pet.
geranium oil	2%	pet.	parabens	15%	pet.
imidazolidinyl urea (Germall 115)	2%	aq.	nickel sulfate	5%	pet.
isopropylmyristate	20%	pet.	colophonium	20%	pet.
jasmine absolute	2%	pet.	epoxy resin	1%	pet.
lavender absolute	2%	pet.	fragrance mix	8%	pet.
musk mix	5%	pet.	chlorocresol	1%	pet.
polyoxyethylene sorbitan oleate (Tween 80)	2%	pet.	lanolin alcohol	30%	pet.
rose oil	2%	pet.	Myroxylon Pereirae resin	25%	pet.
sorbic acid	2%	pet.	methylchloroisothiazolinone/methylisothiazolinone	0.67%	aq.
sorbitan monooleate (Span 80)	2%	pet.	p-tert-butylphenol-formaldehyde resin	1%	pet.
sorbitan sesquioleate (Arlacel 83)	2%	pet.	quaternium-15	1%	pet.
stearyl alcohol	30%	pet.	eosin	50%	pet.
tertiary butyl hydroquinone	1%	pet.	own cosmetics		
thimerosal	0.1%	pet.	lipstick, nail polish, face cream, <i>bindi</i>	as is	
triclosan	2%	pet.	soap, detergent, mascara, <i>surma sindoor</i> ,		
triethanolamine	2%	pet.	<i>tikka</i> , henna	various	aq.

Table 2. Suspected cosmetics and allergens established by positive patch test

Suspected cosmetics	No. patients tested	No. positive reactions	Allergen	No. positive reactions
hair dye	9	9	PPD	9
lipstick	4	4	fragrance mix	3
nail polish	5	3	nickel	2
vermilion	5	3	colophonium	2
bindi	15	2	parabens	1
bleaching cream	2	2	hydroquinone	1
face cream	5	1	propyl gallate	1
shaving cream	1	0	formaldehyde	1
eye cosmetics	2	0	myroxylon pereirae resin	1
soap/shampoo	3	0	cetyl alcohol	1
perfume/deodorant	3	1		

from vermilion was restricted linearly to the scalp and forehead where the hair was parted.

Discussion

Skin-care products have been the most implicated cosmetics in the USA (4) and Holland (5), nail cosmetics in Spain (6) and eye make-up in Sweden (7). Sensitivity to PPD has varied from the 10.3% of Broekx et al. (8) to the 32.1% of Romaguera et al. (6). Hair dye was the most commonly confirmed of the suspected cosmetics in our study, with 18% of our patients being positive to PPD. Positivity to fragrance mix (4, 8), in contrast, was relatively low (6%).

In India and other Asian countries, facial melanosis from cosmetics is well-known (9–12): 25 (50%) patients in our study showed such pigmentary changes.

Bindi is a circular plastic disc stuck on the forehead with an adhesive (13), containing t-butyl phenol, monomethylol phenol, etc., by Indian women as a religious custom, though at times for cosmetic enhancement. *Sindoor* (vermilion) is a red powder sprinkled along the parting of the scalp hair to denote (female) marital status, and consists of lead oxide, *kumkum* (alkalized turmeric powder), or commercial red dyes. *Surma* is a fine black powder containing 90% lead oxide, which is usually applied to the eyelid margins, and irritancy is occasionally noted from this. *Tilak* is either powdered dry sandalwood (*Santhalim alba*) or ash and is applied to the forehead by Hindu males in southern India.

15 patients had *bindi* dermatitis, all showing either hypopigmentation or hyperpigmentation (13, 14). Positive patch tests were seen in only 2 such cases, but a use test was positive in all patch-test-negative patients. Patch testing with suspected cosmetics was positive in 50% of patients. 32% of patients were posi-

tive on ROAT and 72% on use testing when patch tests were negative.

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