

CONTACT DERMATITIS DUE TO EUCALYPTUS OIL

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Out of 6 patients having air-borne contact dermatitis, 2 showed a positive patch test with eucalyptus oil, while out of 26 patients having contact dermatitis due to other agents such as cosmetics, topical drugs and wearing apparel taken as controls, only one was positive with eucalyptus oil.

Key words : Contact dermatitis, Eucalyptus oil, Patch tests.

Plants commonly responsible for contact dermatitis in India include *Parthenium hysterophorus*, *Nerium variabilis* and *Lantana camara* in Delhi,¹ *Terminalia chebula*, *Cynodon dactylon* and *Pennisetum typhoides* at Allahabad,² *Parthenium hysterophorus* and *Nerium odorum* at Indore,³ *Amaranthus blitum* and *Alternanthera triandra* at Varanasi,⁴ and *Albizia lebbek* and *Panicum antidotale* at Jodhpur.⁵ During the past decade or so, *Eucalyptus* has been planted almost all over India, and thus more and more human beings are being exposed to it. Patch tests performed with the dried leaves of *Eucalyptus*, on patients having air-borne contact dermatitis revealed 6 (out of 82) patients having positive reactions in Delhi, 1 (out of 10) in Pune and none of the 65 patients tested at Indore.⁶ To standardise the antigen for patch tests with *Eucalyptus*, we have tested some patients with eucalyptus oil in different dilutions, although textbooks mention 1% eucalyptus oil as the concentration. Our preliminary results are being reported.

Materials and Methods

Six patients having contact dermatitis due to some air-borne antigen(s) and 26 patients having contact dermatitis due to other agents such as topical medications, cosmetics and wearing apparel were included in this study. Eucalyptus oil was obtained from GS Chemical Testing Lab and Allied Industries, New Delhi. Patch tests

were done according to the standard techniques,⁷ with different dilutions of eucalyptus oil such as 15%, 10%, 5% and 1% in polyethylene glycol. The results were read after 48 hours.

Results

Out of the 6 patients having air-borne contact dermatitis, 2 showed positive patch tests with eucalyptus oil. One of them gave a 1+ reaction with 10% eucalyptus oil and the other gave a 2+ reaction with the eucalyptus oil used as such. The first patient was a farmer but showed negative patch tests with the common vegetables, fruits and some cultivated crops. The second patient was a housewife who in addition, gave positive patch test reactions with the leaves of *Parthenium hysterophorus*, *Lantana camara*, *Cynodon dactylon*, *Acacia arabica*, *Gravillea robustica* and *Nerium indicum*, but the patch test with the fresh leaves of *Eucalyptus* was negative.

Of the 26 patients having contact dermatitis due to other agents, one patient showed a 3+ reaction with eucalyptus oil used as such. He was a physician by occupation and had lesions over both the hands caused by local drugs. Patch testing revealed contact hypersensitivity to acriflavin, nitrofurazone and diethylamine acetarsol also. One more patient allergic to lipstick, showed a 1+ reaction with 15% eucalyptus oil in polyethylene glycol but a similar reaction was seen with polyethylene glycol also used as control. So her sensitivity was most likely to be due to the diluent.

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Another patient having air-borne contact dermatitis, gave a negative result with the eucalyptus oil, but a 2+ reaction with the fresh leaves of *Eucalyptus*.

None of the patients showed a positive reaction with 1% and 5% eucalyptus oil. The results of patch tests with the eucalyptus oil are shown in table I.

Table I. Frequency and degree of positive patch test reactions with various dilutions of eucalyptus oil.

Concentration of the eucalyptus oil used	Number of patients giving a reaction					Total number of patients	
	—ve	1+	2+	3+	4+	Positive	Tested
1. 1%	9	0	0	0	0	0	9
2. 5%	12	0	0	0	0	0	12
3. 10%	9	1	0	0	0	1	10
4. 15%	10	1*	0	0	0	1*	11
5. As such	9	0	1	1	0	2	11

* This patient was considered allergic to the base polyethylene glycol.

Comments

Eucalyptus oil is considered to be a rubefacient, while its irritant and sensitizing properties are slight.⁸ Positive patch tests in 2 of the 6 patients having airborne contact dermatitis and one out of the 26 controls do suggest that further studies in more patients are necessary before establishing the antigenicity of *Eucalyptus*.

A 2+ reaction with the *Eucalyptus* leaves and a negative reaction with the eucalyptus oil in one case is intriguing, but it is possible that there is some other antigen present in the leaves which does not get extracted in the oil.

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