

Allergic contact dermatitis from *Nicotiana tabacum*

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Key words: allergic contact dermatitis; *Nicotiana tabacum*; tobacco; plants; occupational; patch testing technique; ether, acetone and alcohol extracts.

Contact dermatitis from *Nicotiana tabacum* is rarely reported in tobacco plantation workers (1). It occurs mainly in the tobacco industry (2) and is usually irritant: mechanical trauma, wetness and the alkalinity of macerated leaves (2) enhance the irritant potential of nicotine and other alkaloids (3).

Case Report

A 40-year-old female presented in October 1987 with highly pruriginous eczematous lesions on exposed areas. For 3 years, she had been working seasonally in a tobacco plantation, and, since then, lesions had recurred every year when she handled either green or yellowish leaves of the plant.

In 1988, she did no work in the fields and was completely free of eczema. It recurred in July 1989, on her 2nd day back at work in the plantation. The other 12 workers there were free of lesions. She had no past history of eczema.

She was patch tested, over the course of 2 years, with the European standard series; pesticides, woods, plants and perfume series (Hermal); pesticides used in the plantation; and plants found in the region.

Tobacco leaves were tested as is (green and yellow leaves), and as ether, alcohol and acetone extracts at 1% in white petrolatum. Nicotine at 0.5 and 1% pet. and tobacco from a cigarette were also tested. Results are shown in Tables 1 and 2. 20 controls were all negative to the tobacco extracts and 5 also failed to react to the leaves.

Discussion

Allergic contact dermatitis from green tobacco leaf is rarely reported (1). Occasionally, patients handle green leaves with impunity but react to cured leaves (4). We found positive patch tests to both green and yellowish leaves, and also to cured tobacco from a cigarette, suggesting that the allergen remained unchanged during the drying and curing process, and was already present in the green leaf. It is soluble in ether and alcohol, as has been reported in a case of allergic contact dermatitis from the cured leaf (4).

As in previous studies, nicotine was not the allergen (2, 5, 6).

Pesticides, fertilizers and additives may also be responsible for the dermatitis (2, 5, 7). Our patient

had a positive test to pyrethrum that is difficult to explain: she did not react to the pesticides used in the plantation, that did not contain pyrethrins, and had no history of intolerance to domestic insecticides or previous contact with *Chrysanthemum cinerariaefolium* (8).

As an 'angry back' was excluded by repeated patch testing, the positive reactions to several plant-derived substances seen (balsam of Peru, colophony, propolis, turpentine, wood tars and perfume-mix (isoeugenol and oak moss)) are explained by the existence of common allergens among these products (5, 8). In the absence of previous intolerance to them, we admit that ≥ 1 of these allergens might be present in tobacco leaves, or cross-react with a tobacco constituent. Nevertheless, a simple concomitant reaction with tobacco cannot be excluded.

Table 1. Patch test results

		48 h	96 h
colophony	20% pet.	+++	+++
balsam of Peru	25% pet.	+++	+++
turpentine	10% o.o.	+	++
perfume-mix	8% pet.	+++	+++
isoeugenol	1% pet.	++	
oak moss	1% pet.	+++	
pyrethrum	2% pet.	+++	+++
propolis	10% pet.	+++	+++
wood tars		+++	
pesticides		-	-
plants series		-	-

Table 2. Patch test results to tobacco

		48 h	96 h
green leaf	(as is)	++	+++
dry leaf	(as is)	++	++
green leaf extracts			
ether	1% pet.	+	++
acetone	1% pet.	+	+
alcohol	1% pet.	++	++
commercial tobacco	(as is)	++	
nicotine	0.5 and 1% pet.	-	-

References

1. Nakamura T. Tobacco dermatitis in Japanese harvesters. *Contact Dermatitis* 1984; 10: 310.
2. Rycroft R J G. Tobacco dermatitis. *Brit J Dermatol* 1980; 103: 225-229.
3. Rycroft R J G, Smith N P, Stok E T, Middleton K. Investigation of suspected contact sensitivity to tobacco in cigarette and cigar factory employees. *Contact Dermatitis* 1981; 7: 32-38.
4. Pecegueiro M. Airborne contact dermatitis to tobacco. *Contact Dermatitis* 1987; 17: 50.
5. Benezra C, Ducombs G, Sell Y, Fousereau J. *Plant contact dermatitis* Toronto: B. C. Decker Inc. 1985: 168-169, 227-228.
6. Mitchell J, Rook A. *Botanical dermatology*. Greenglass (ed). Vancouver: 1979: 652-654.
7. Chaniel G, Colin L, Duclaux C. Les dermites chez les travailleurs du tabac (à propos de 9 observations). *Bull Dermatol Syphil* 1970; 77: 281-283.
8. Cronin E. *Contact dermatitis*. London: Churchill Livingstone, 1980: 405.

Patch test sensitivity to Kathon CG in Prague

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Key words: Kathon CG; allergic contact dermatitis; patch testing; standard series; relevance of positive reactions; false positive reactions, use test; cosmetics.

The occurrence of contact sensitization to Kathon CG (1-5) has been studied in many countries lately (6-13). In 1988, we reported a case of occupational contact dermatitis from Kathon CG in a cosmetic cream (14). A further study of sensitization to Kathon CG has therefore been started in 2 Dermatology Clinics in Prague.

Material and Methods

Kathon CG (100 ppm a.i. aq.) was added to the standard patch test series. Between March 1988 and June 1989, 718 consecutive patients were patch tested, using Testpflaster® (Beiersdorf AG, Hamburg) applied to the the back, and reading at 24 and 72 h.

Positive reactions were re-evaluated by testing with Kathon CG (100 ppm), and a cosmetic cream containing 7.5 ppm Kathon CG, a few months later. In the 5 patients who again reacted positively to Kathon CG, a use test with the same cosmetic cream was carried out by applying it 2 × daily for 7 days to antecubital skin.

Results

Among the 718 patients patch tested, 6 (5 female, 1 male) gave a clear positive allergic reaction (0.8%). Their results, including other positives, are shown in Table 1. All those who gave a positive reaction to Kathon CG were retested. 5 of the 6 patients again

showed a positive reaction. In Case no. 3, retesting with Kathon CG was negative (angry back syndrome?).

Another 5 of the 718 patients (0.7%) developed slight erythema, without infiltration, which went within 72 h. We evaluated these reactions as mild irritant. Retesting with the same concentration of Kathon CG a few months later was negative.

A use test was performed in the 5 persons with repeatedly positive reactions. The cream used contained not only Kathon CG but also lanolin. 3 of the 5 use-tested patients developed a mild dermatitis (Table 2).

Discussion

The patch test concentration for Kathon CG has ranged from 15 ppm (15) to 1000 ppm a.i. (6). Guided by Maibach (16), we used 100 ppm a.i. aq. The first cases of sensitization to Kathon CG in cosmetics were described by Fousereau et al. (17) and De Groot et al. (2).

The reported rate of sensitization to Kathon CG varies from 0.5% to 8.3% (12, 18). Summarized data were published by Cronin et al. (19) and De Groot & Weyland (1).

In our study, the incidence of allergic reactions to Kathon CG among patch tested patients was 0.8%, which is close to the low frequencies reported by Hjorth (0.8%) and Shuster (0.9%) (9, 13).

The relevance of reactions to Kathon CG is often difficult to establish. In only 2 of our cases was

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