

Because contact photoallergy due to maneb and fenitrothion was suspected, she stopped helping her husband in the paddy field with resultant disappearance of the dermatitis.

Discussion

Maneb is a fungicide of the carbamate group: manganese ethylene-bisdithiocarbamate. Fenitrothion is an insecticide acting as a cholinesterase inhibitor. Both are widely used in Japan. In a large Japanese study (1), farmers with contact dermatitis underwent patch tests with various pesticides: 8.1% had positive reactions to maneb 0.186% pet. and 10.9% were positive to fenitrothion 0.1% pet. (1).

In Italy, Lisi et al. (2) reported a similar study in which a pesticide series of 36 substances was patch tested in 652 subjects. Allergic reactions to fungicides were found in 46 subjects, and thiophthalimides (captan, folpet and difolatan) were the most common sensitizers. Maneb was allergic in only 3 subjects (0.5%). Fenitrothion was not incorporated in their study, which did not include photopatch testing (2).

The patient in our case developed the eruption in June, a rainy season in Japan. Another fungicide, Daconil®, was reported as causing photoallergic contact dermatitis only from spring to summer in a gardener in southern Japan (3). Hence, hot humid Japanese weather during the summer may enable a sprayed pesticide to

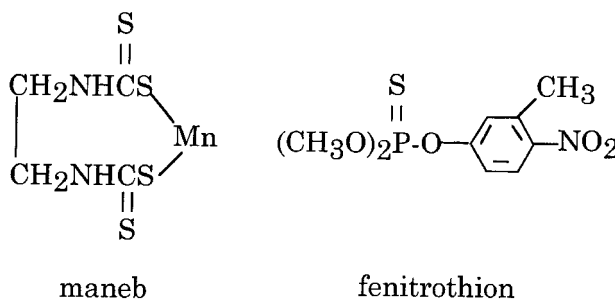


Fig. 1. Chemical structures of maneb and fenitrothion.

remain in the air for a long period and to contaminate exposed sweaty skin.

Although our patient had photoallergic reactions to both maneb and fenitrothion, the compounds have entirely different chemical structures (Fig. 1).

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Occupational dermatitis in Sheffield: a preliminary study

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Key words: occupational; allergic contact dermatitis; irritant contact dermatitis; nickel sulfate; carba mix; thiuram mix; potassium dichromate; fragrance mix; metalworking. © Munksgaard, 1999.

We set out to determine the frequency of occupational dermatitis in patients attending a contact dermatitis clinic, those occupations most at risk and the most common causative allergens.

Patients and Methods

All patients attending a contact dermatitis clinic over a 3-year period (1994–1996) were included, the data being collected on a computerized database. Whether or not a dermatitis was occupational was decided after patch testing. Allergic contact dermatitis was diagnosed if a relevant allergen was demonstrated, irritant contact dermatitis if irritant exposure was thought to predominate. The importance of irritants may therefore be underplayed. Both allergic and irritant factors were felt to be equally important in a few cases.

Results

Of 1153 patients, 192 (17%) were diagnosed as having occupational dermatitis. The 6 most common occupations were: metal processing (26), nursing (15), catering (13), hairdressing (11), cleaning (9), and shop work (9). The commonest sites were the hands (82%), arms (18%), face and neck (16%) and legs (10%). In some, the eruption was at more than 1 site. 83 patients (43%) had a personal history of atopy (i.e., allergic rhinitis, asthma or atopic dermatitis). A final diagnosis of irritant contact dermatitis was made in 102 (53%), and of allergic contact dermatitis in 90 (47%). 11 (6%) had both (included in both groups). The most common relevant allergens were: nickel sulfate 38 (20%), thiuram mix 26 (14%), fragrance mix 17 (9%), potassium dichromate 12 (6%) and carba mix 10 (5%).

Discussion

Similarly, Sun & Cheng (1) reported a frequency of occupational dermatitis of 16% in 2793 consecutively patch tested patients in Taiwan, 54% having irritant contact dermatitis, 54% allergic contact dermatitis, and 8% both. The predominance of metalworkers in our study reflects the local working population. It has been reported previously (1–3) that metalworkers (4) and certain others of our occupational groups, i.e., nursing, catering, hair-dressing and cleaning, are at high risk of occupational skin disease. Our most common allergens, i.e., nickel, rubber chemicals, chromium and fragrance mix, have been identified previously as occupationally relevant (1, 2, 5).

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Allergic contact dermatitis associated with photosensitivity, from alantolactone in a chrysanthemum farmer

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Key words: chrysanthemum; Compositae family; alantolactone; sesquiterpene lactone mix; photosensitivity; chronic actinic dermatitis; plants; occupational; horticulture. © Munksgaard, 1999.

Case Report

A 61-year-old Japanese farmer, who had been growing chrysanthemums and mandarin oranges for about 40 years, had had eczema on sun-exposed areas for about 20 years. The rash used to worsen from spring to summer and remit from autumn to winter. There had also had been several episodes of erythroderma, especially in summer. However, in 1987, since the lesions did not heal and continued into November, he came to our hospital. At his 1st visit, he presented with diffuse scaly erythema on the face, nape of the neck, the V of the upper chest, upper back, forearms, and dorsum of the hands. Fissures and crusting were also seen on the lips. Covered areas were spared. His personal and family history were unremarkable, and he had never habitually used any medications. Histology of a biopsy from his forehead showed a chronic eczematous reaction.

He was patch tested with all the types of chrysanthemums and oranges that he had been growing, and other materials from his work, including pesticides. Results were as follows: ++ to all petals and leaves of chrysanthemums tested; – to all orange peels; and – to all pesticides, at D3 and D4. Patch testing to alantolactone (AL) was also positive (Table 1).

Photopatch testing was subsequently carried out to AL, irradiating at D2 with $\frac{1}{2}$ the minimal erythema dose (MED) from an FL20S · E-30 (Toshiba, Tokyo, Japan), the emission spectra of which ranged from 275 to 375 nm, with a peak at 305 nm, and with 6 J/cm² from an FL32S · BL (Toshiba), the emission spectra of which ranged from 310 to 460 nm, with a peak at 350 nm, with

positive results (Table 1). The same patch and photopatch tests with AL in 3 normal volunteers were all negative. Action spectrum for erythema (AcSp) 24 h after applying AL 0.0001% pet. on uninvolved abdominal skin was judged 48 h after irradiation with an irradiation monochromator (Jasco, Tokyo, Japan). The MEDs after applying AL in white petrolatum were slightly lower than those after applying white petrolatum at 260, 270, 280, 290, 300, 310, 320, and 330 nm (Fig. 1). The difference in AcSp between them ranged from 260 to 330 nm and it differed entirely from the absorption spectrum (AbSp) of AL, which reached 390 nm (Fig. 1).

Discussion

Since our patient showed positive patch test results with AL concentrations as low as 0.0003%, he was diagnosed

Table 1. Patch and photopatch test results

Alantolactone (% pet.)	Patch test (D3)	Photopatch test (D3)	
		SE 1/2 MED	BL* 6 J/m ²
0.001	+++	+++	+++
0.0003	+	++	++
0.0001	–	+	–
0.00003	–	–	–

SE: FL20S · E-30 (Toshiba, Tokyo, Japan). BL: FL32S · BL (Toshiba). MED: minimal erythema dose.

* The wavelengths shorter than 320 nm emitted from an FL32S · BL were cut off by a window glass filter.