

Short Communication

Occupational allergic contact dermatitis caused by 5,7-dichloro-4-(4-fluorophenoxy)quinoline (quinoxifen)

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Case Reports

Case no. 1

A 52-year-old non-atopic senior supervisor, working in a pesticide plant for 35 years, was referred by his occupational physician. He had had a red, itchy rash with blistering on his right forearm and wrist following exposure to quinoxifen, which had involved its decanting and disposal. This had occurred in November 1999, 10

months prior to his presentation and patch testing. 2 working colleagues in the same pesticide plant had developed similar problems, described below, and were also patch tested. All 3 patients have subsequently had no further skin problems after avoiding quinoxifen.

Case no. 2

A 57-year-old non-atopic process worker, employed for 23 years, had a history of a red, itchy, blistering rash on the right wrist alone in November 1999, 10 months prior to his presentation and patch testing. This eruption had cleared with avoidance of quinoxifen.

Case no. 3

A 40-year-old non-atopic chemist, employed for 10 years, had been involved with the laboratory research of quinoxifen in 1992. 10 days after his 1st exposure to quinoxifen, he had developed an itchy, erythematous rash on his forearms, treated successfully with topical corticosteroids. In 1993, 3 months after the initial rash, he had a further recurrence of a similar rash on his fore-

Table 1. Patch test results

Patients		D2			D4		
		1	2	3	1	2	3
EF1186	pet. 1%	–	–	NT	+	+	NT
	pet. 5%	?+	+	NT	+	+	NT
	pet. 10%	?+	+	NT	+	+	NT
	aq. 1%	–	–	NT	–	+	NT
	aq. 5%	–	–	NT	–	+	NT
	aq. 10%	–	–	NT	–	+	NT
	MEK 1%	–	–	NT	–	+	NT
	MEK 5%	–	–	NT	–	+	NT
	MEK 10%	–	–	NT	–	+	NT
DE795	pet. 1%	–	?+	NT	+	+	NT
	pet. 5%	?+	–	NT	+	+	NT
	pet. 10%	?+	?+	NT	+	+	NT
	aq. 1%	–	–	–	–	+	–
	aq. 5%	–	–	–	–	+	+
	MEK 1%	–	–	–	–	–	?+
	MEK 10%	–	–	–	–	–	+
EF1351	pet. 1%	–	–	NT	+	–	NT
	pet. 5%	?+	?+	NT	+	–	NT
	pet. 10%	?+	?+	NT	+	–	NT
	aq. 1%	?+	?+	NT	+	–	NT
	aq. 5%	?+	?+	NT	+	–	NT
	aq. 10%	?+	–	NT	+	–	NT
ESB	nickel	–	–	–	–	–	+
	thiuram	?+	–	–	–	–	–
	thimerosal	–	–	+	–	–	+
preservatives		–	–	–	–	–	–

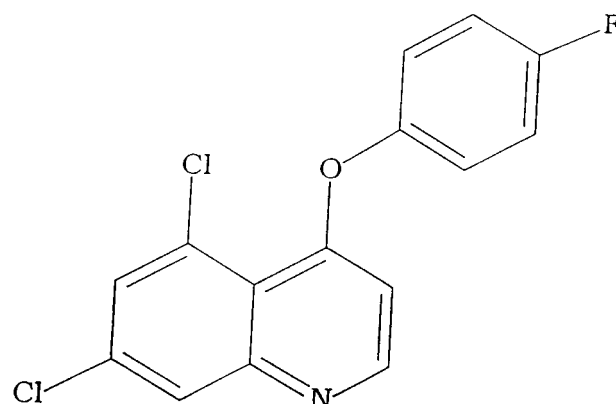


Fig. 1. Chemical structure of 5,7-dichloro-4-(4-fluorophenoxy)quinoline (quinoxifen).

arms, 3 days after contact with powdered quinoxifen. He was patch tested in 1994, when he presented with a further episode of the rash, 2 days following exposure to quinoxifen.

Patch testing

Patch testing, using Finn Chambers, was performed with the European standard series and preservatives series (Chemotechnique). In addition, patch testing was performed in patient nos. 1 and 2 with EF1186 (quinoxifen 500 g/l), DE795 (quinoxifen >95%) and EF1351 (quinoxifen 53.5%) at 1%, 5% and 10% pet., MEK and aq. Patient no. 3 was patch tested with DE795 in MEK and aq. in 1994. 20 controls were patch tested to DE795 at 10% MEK and 10% aq.

Results are shown in Table 1: all controls were negative.

Discussion

Quinoxifen, or 5,7-dichloro-4-(4-fluorophenoxy)quinoline, is a quinazoline fungicide (Fig. 1). Animal studies have shown it to be non-sensitizing in the guinea pig and essentially non-irritant. Fungicides are a known cause of

occupational allergic contact dermatitis (1–4), particularly benomyl (5), captan (6) and maneb (7). We believe that quinoxifen has not previously been reported as a cause.

References

1. Schubert H J. Pesticides. In: Rycroft R J G, Menné T, Frosch P J (eds.): *Textbook of contact dermatitis*, 2nd edition. Berlin, Heidelberg: Springer-Verlag, 1995: 527–538.
2. Adams R M. Pesticides and other agricultural chemicals. In: *Occupational skin disease*. New York: Grune & Stratton, 1983: 361–376.
3. Cole D C, Carpio F, Math J J M, Leon N. Dermatitis in Ecuadorean farm workers. *Contact Dermatitis* 1997; 37: 1–8.
4. Paulsen E. Occupational dermatitis in Danish gardeners and greenhouse workers. *Contact Dermatitis* 1998; 38: 14–19.
5. Larsen A I, Larsen A, Jepsen J R, Jorgensen R. Contact allergy to the fungicide benomyl? *Contact Dermatitis* 1990; 22: 278–281.
6. Lisi P, Caraffini S, Assalve D. Irritation and sensitization potential of pesticides. *Contact Dermatitis* 1987; 17: 212–218.
7. Nater J P, Terpstra H, Bleumick E. Allergic contact sensitization to the fungicide Maneb. *Contact Dermatitis* 1979; 5: 24–26.