

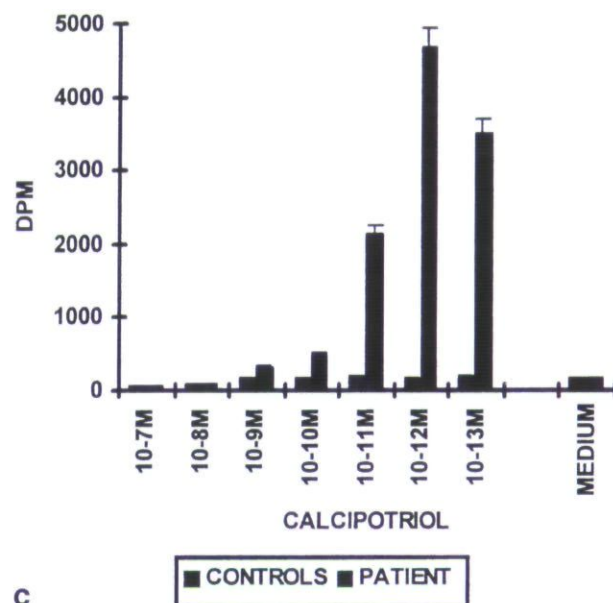
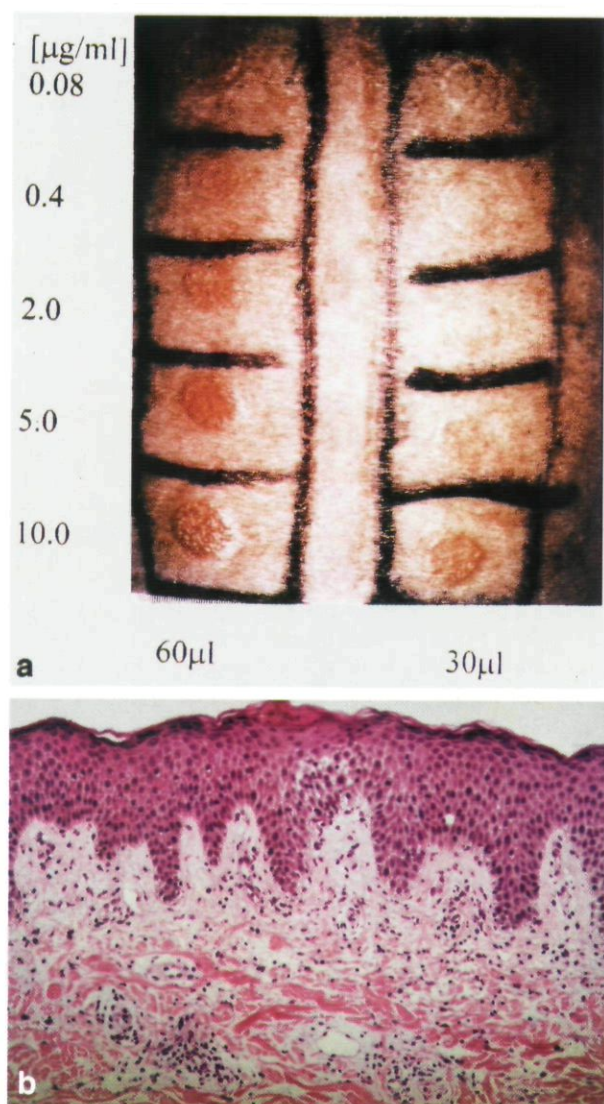


Fig. 1. (a) Test site 3 days after patch test with calcipotriol (concentration 0.08–10.0 $\mu\text{g/ml}$) in isopropanol 70%, using Finn Chambers. Left lane: 60 μl of calcipotriol in isopropanol solution, right lane 30 μl . (b) Histological section of a ++ patch test reaction taken 3 days after occlusive application of calcipotriol (5.0 $\mu\text{g/ml}$), haematoxylin-eosin staining, 160 $\times$. (c) Lymphocyte proliferation in response to calcipotriol.

Allergic contact dermatitis from ophthalmics: update 1997

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We previously reviewed allergic reactions to ophthalmic drugs and contact lens solutions and proposed an ophthalmic tray (1, 2). Subsequently, 9 additional ophthalmic allergens have been reported. We summarize them as before (Table 1) (1, 2). Most fall into categories previously described, but 2 represent new groups.

Diclofenac is a non steroidal anti-inflammatory drug used systemically for decades, but more recently also available in topical preparations (e.g., anti-inflammatory gels).

Although not common, corticosteroid contact allergens have become well-established; they may be even less

Table 1. Allergic compounds (update 1997)

Allergen (group)	Patch test (%) concentration	Vehicle	#PT-positive cases	#PT-negative controls	Ref.
betaxolol (β -adrenergic blocking agent)	1/2/5	aq.	1/1	nd	(3)
cyclopentolate hydrochloride (mydriatic)	0.1/0.5	aq.	1/1	0/20	(4)
dipivalyl epinephrine hydrochloride (mydriatic)	0.5	aq.	1/1	nd	(5)
tobramycin sulfate (antibiotic)	5/25	pet.	1/1	0/20	(6)
resorcinol (antiseptic)	1	pet.	1/1	nd	(7)
ketotifen fumarate (antihistaminic)	0.069	aq.	1/1	nd	(8)
tetracaine (anesthetic)	1	pet.	2/13	nd	(9)
diclofenac (anti-inflammatory drug/NSAID)	1/2	pet.	1/1	0/10	(10)
prednisolone (corticosteroid)	0.5	aq.	1/1	nd	(11)

aq.: aqueous solution. pet.: petrolatum. PT: patch test. nd: not done.

common in ophthalmic use as reflected by the single prednisolone report.

Sub judice are the issues of cross-sensitization in the important group of β -adrenergic blocking agents and, as a consequence thereof, the benefit of patch tests for identification of alternative drugs. We found 1 case where a patient sensitized to the β -adrenergic blocking agent befunolol showed a positive patch test reaction to levobunolol (1% aq.), a drug to which the patient was apparently not previously exposed (12). In contrast, several reports describe patients who either had allergic contact dermatitis from more than 1 β -adrenergic blocking agent, but who were also exposed to all of them, indicating multiple sensitization (13), or did not show evidence of cross-sensitization after patch testing with multiple β -adrenergic blocking agents (14–17). Using the alternative drug may suffice in most cases, as the frequency of cross-reactions seems to be low.

An additional report identified substances such as oxytetracycline, penicillin, sulfathiazole and boric acid as ophthalmic allergens, and suggested that ophthalmic trays should be adapted to the prescribing habits of the physicians (18). Most of these substances are not commonly used in ophthalmology in much of the world.

Most substances suspected as being causative agents need to be tested. On the other hand, we believe that international standardization of trays is essential to facilitate comparative international studies. Further, many patients clinically intolerant to topical ophthalmics still defy etiologic diagnosis, either because they represent false-negative patch tests, or because irritation, rather than sensitization, is involved.

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