

An unusual case of contact dermatitis to procaine

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Contact allergy to local anaesthetics is well known. There are two main classes of local anaesthetics: amino amides (e.g. lidocaine and prilocaine) and amino esters (e.g. benzocaine and procaine) (1). Allergic cross-reactions can occur between structurally related anaesthetics. Dermatitis in response to skin contact with procaine used to be frequently seen occupationally, especially in dentistry (2). However, because the compound has been largely replaced by other local anaesthetics that are more effective and less allergenic, procaine-related dermatitis is now rare. We here report a case of allergic contact dermatitis to procaine from an unusual source.

Case Report

A 47-year-old male veterinary obstetrician visited his general practitioner (GP) because of a progressive rash on his hands and forearms. He never used gloves to protect his hands during deliveries or caesarean sections.

His GP treated the patient with amoxicillin, and after initial improvement, the rash, which was now

accompanied by itchy vesicles and bullae, spread to the trunk and legs, and there was periocular oedema and hand swelling. He was now treated with systemic and topical steroids and oral ciprofloxacin and antihistamines with negligible clinical effect.

When seen by us, he had disseminated erythematous papules and multiple vesicles on his arms (Fig. 1). His fingers were covered with crusted, erythematous plaques, and a number of excoriated erythematous papules were present on his flanks and knees. Oedema was observed around his left eye only (Fig. 2). An allergic contact dermatitis was suspected.

Patch tests with the European baseline series, an antibiotic series, penicillin series, disinfectant series, and preservative series were applied on his back in Finn® Chambers (Epitest Ltd Oy, Tuusula, Finland). The patch test series used were provided by van der Bend B. V. (Brielle, the Netherlands). Readings were done on D2 and D4. The patient developed



Fig. 1. Papules and vesicles on right arm.



Fig. 2. Oedema on the left eye.

a 1+ reaction (International Contact Dermatitis Research Group criteria) to benzocaine and *Myroxylon pereirae*. Patch tests with veterinary udder cream and cattle amniotic fluids were negative. Skin prick tests to amoxicillin, ciprofloxacin, cattle amniotic fluids, and latex proteins were also negative.

A closer look at the antibiotics the patient used professionally showed that he used Penstrept-ject™ on a regular basis. Penstrept-ject™ is a combination of procaine benzylpenicillin and dihydrostreptomycin sulfate (3). Because of the positive reaction to benzocaine and the cross-reactions that can occur, we performed additional patch test with the caine series. Procaine elicited a 3+ reaction.

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Discussion

The patient had an allergic contact dermatitis to procaine, which is a member of the benzoic acid esters class of local anaesthetics. Most likely, he had been sensitized to the procaine in Penstrept-ject™. Benzylpenicillin is frequently used in veterinary medicine (3). The procaine salt, which has a low solubility in water, splits into free procaine and benzylpenicillin when administered (3). The patient usually introduced Penstrept-ject™ into the abdominal cavity after caesarean sections to prevent post-operative infections. Exposure of his hands to disinfectants (he never wore gloves) increased the risk of irritant contact dermatitis, which facilitates penetration of potential allergens. During veterinary procedures, his clothes were drenched in body fluids of the cattle containing the medication, which explains the widespread reactions on his trunk, flanks, and upper arms (and airborne on his face).

This unusual case of allergic contact dermatitis emphasizes the importance of a careful evaluation of history and work practices.

References

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