

Allergic contact dermatitis to all three classes of local anaesthetic

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A 43-year-old woman presented with a history of multiple episodes of allergic contact dermatitis following the infiltration of local anaesthetic agents. Patch and intradermal testing confirmed type IV hypersensitivity to multiple agents across all three classes of local anaesthetic. The case demonstrates the rare phenomenon of amide anaesthetic allergy and possible cross-reactivity between agents within this class.

Case Report

A 43-year-old woman was referred for patch testing as a result of a severe localized vesiculobullous cutaneous reaction arising 5 hr after skin biopsy using lidocaine (lignocaine) hydrochloride local anaesthesia.

Further questioning showed a 20-year history of similar delayed

Table 1. Relevant positive and negative results of patch and intradermal testing at day four

Test substance	Concentration (%)	Patch	Intradermal
Lidocaine	15	+++	NT
Lidocaine	2	++	++
Prilocaine	2	++	++
Ropivacaine	1	++	++
Bupivacaine	0.5	neg	neg
Cinchocaine	5	+	NT
Benzocaine	5	++	NT
Procaine	2	neg	neg
Tetracaine	1	neg	NT
Hydrocortisone	1	neg	NT
p-phenylenediamine	1	++	NT
Sunscreen series	n/a	neg	NT
Para aminobenzoic acid	10	neg	NT
Parabens mix	16	neg	NT

neg, negative; NT, not tested; n/a, not applicable.

reactions resulting from procedures involving various local anaesthetic agents. Ipsilateral facial erythema and swelling was noted the morning following wisdom teeth extraction using mepivacaine hydrochloride. An acute vesicular dermatitis had developed following the excision of two separate skin lesions and a fine needle aspirate of the right breast. One of the skin lesions was excised under prilocaine hydrochloride local anaesthesia. Lidocaine hydrochloride had been used for the other skin lesion excision and the fine needle aspirate. In addition, perianal dermatitis had developed following the use of the haemorrhoid ointment Proctosedyl® some years previously. The two main ingredients of Proctosedyl® are cinchocaine hydrochloride and hydrocortisone.

Patch testing was performed with TROLAB® Hermal allergens using Finn Chambers on Scanpor®. Patch test results were read at D2 and D4 according to the ICDRG guidelines. Intradermal testing was performed with 0.1 ml of each of the injectable locally available anaesthetic agents used for patch testing.

The relevant positive and negative results for both patch and intradermal testing at D4 are given in Table 1.

Discussion

Our patient presented with a history consistent with allergic contact dermatitis to lidocaine, prilocaine, cinchocaine, and mepivacaine that was confirmed by patch testing (except mepivacaine which was not available for testing). Patch tests were also positive to ropivacaine and benzo-

caine. There was no known exposure to ropivacaine, suggesting that this may represent true allergic cross-reactivity. There was no known exposure to benzocaine although it is widely available in a number of over-the-counter preparations and she may well have been sensitized as a result of previous exposure. No cross-reactivity was noted to para aminobenzoic acid (PABA), suggesting an alternative mechanism of allergy to the ester anaesthetics in this patient.

Ester anaesthetics have been considered to account for the vast majority of allergic reactions (1); however, there seems to be an increasing number of reports of amide anaesthetic allergy. Cross-reactivity among the ester anaesthetics is well recognized and thought to be due to their highly antigenic PABA metabolite (2, 3). Cross-reactivity between ester and amide anaesthetics has traditionally been considered exceedingly rare, if not impossible (4). However, the literature now contains at least three reports, in addition to ours, of patients who appear to be sensitized to agents from both the amide and ester classes (5).

Our case demonstrates allergy to all three major classes of local anaesthetic within the same patient. Lidocaine, prilocaine, and ropivacaine are aminoacylamides, while cinchocaine is an aminoalkylamide. Benzocaine is a member of the ester group.

References

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