

CLINICAL CASES

Delayed-type hypersensitivity to amide local anesthetics

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ABSTRACT

We present a 54-year-old woman who suffered eczematous eruptions on her face after the administration of lidocaine and mepivacaine for dental surgeries. Patch tests showed delayed-type-hypersensitivity to the amide local anesthetics lidocaine and mepivacaine with cross reaction to other aminoacylderivatives (prilocaine, bupivacaine) but not articaine.

Key words: Local anesthetics. Delayed-type hypersensitivity. Cross reactions. Lidocaine. Mepivacaine. Articaine.

RESUMEN

Presentamos una mujer de 54 años que sufrió erupciones ecematosas en area facial tras administracion de lidocaina y mepivacaina para cirugia dental. Los tests epicutaneos mostraron hipersensibilidad retardada a los anestésicos locales del tipo amida lidocaina y mepivacaina con reaccion cruzada a otros derivados aminoacilicos (prilocaina, bupivacaina) pero no a articaína.

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Palabras clave: Anestésicos locales. Hipersensibilidad retardada. Reacciones cruzadas. Lidocaína. Mepivacaína. Articaína.

INTRODUCTION

Local anesthetics are classified according to their chemical structure. The two main groups are the "ester type anesthetics", which are all derivatives of para-aminobenzoic acid (i.e. procaine, benzocaine, tetracaine) and the "amides" which include the aminoacylamides (lidocaine, prilocaine, mepivacaine), aminoalkylamides (i.e. procainamide) and the quinoline derivative dibucaine.

Contact dermatitis due to ester type anesthetics are well known, but allergic reactions to the amide group are rare.

CASE REPORT

A 54-year-old woman started a course of dental treatment in September 2002. Forty eight hours after local anesthesia with Scandibsa (mepivacaine 2 %, ClNa, NaOH, water) she developed swelling of the soft tissues over the left zygoma and an eczematous eruption of her left cheek. She was treated with oral and topical steroids, clearing the lesions in seven days. One month later, 24 hours after the use of lidocaine (lidocaine 2 %, ClNa, NaOH, water) for a new dental surgery a similar acute dermatitis occurred. She had previously undergone dental anesthesia with lidocaine and mepivacaine without incident.

Patch tests with the European Standard series were negative. Patch tests with the following local

anesthetics were also performed: lidocaine (2 % aq), mepivacaine (2 % aq), bupivacaine (0.5 % aq), prilocaine (5 % aq), and articaine (4 % aq). They were evaluated at 48 h and 96 h according the recommendations of I.R.C.G. Positive reactions were observed to lidocaine (+ + +), mepivacaine (+ + +), bupivacaine (+ +), and prilocaine (+ +) at days 2 and 4, but negative to articaine. Tests in ten controls were negative.

DISCUSSION

This case demonstrates delayed-type hypersensitivity to lidocaine and mepivacaine with cross reaction to other aminoacylderivatives (prilocaine, bupivacaine) but not with articaine. Anesthetics used were preservative-free so allergy to preservatives was excluded.

Although contact allergy to amide local anaesthetics is uncommon, there are some publications about it¹⁻⁴. We have found cross reactivity between the members of the group (there was no evidence that prilocaine or bupivacaine were previously used in this patient) as previous reports¹⁻⁴.

It is interesting that there has not been reaction to articaine. This may be explained by its different chemical structure: all aminoacylamides have a methylated phenyl ring with the exception of articaine, which has a substituted thiophen ring. Bircher et al⁵ describe a similar case of tolerance to articaine in a patient with delayed hypersensitivity to local amide anesthetics.

When allergy to an amide local anesthetic is suspected, we suggest testing other members of the group as well, including articaine.

REFERENCES

1. Curley RG, Macfarlane AW, King CM. Contact sensitivity to the amide anesthetics lidocaine, prilocaine and mepivacaine. *Arch Dermatol* 1986;122:924-6.
2. Black RJ, Dawson TA, Strang WC. Contact sensitivity to lignocaine and prilocaine. *Contact Dermatitis* 1990;23:117-8.
3. Klein CE, Gall H. Type IV allergy to amide local anaesthetics. *Contact Dermatitis* 1991;25:45-8.
4. Hardwick N, King M. Contact allergy to lignocaine with cross reaction to bupivacaine. *Contact Dermatitis* 1994;30:245-6.
5. Bircher AJ, Messmer SL, Surber C, Rufli T. Delayed-type hypersensitivity to subcutaneous lidocaine with tolerance to articaine: confirmation by in vivo and in vitro tests. *Contact Dermatitis* 1996;34:387-9.