

# Allergic reaction caused by articaine

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## ABSTRACT

We report the case of a 51-year-old woman who had an immediate skin reaction after subcutaneous administration of a local anesthetic (LA) composed of articaine and epinephrine before a dental procedure. The patient subsequently underwent further dental procedures without LA. Skin prick tests performed with commercial LAs (lidocaine, mepivacaine, bupivacaine and articaine) were negative with epinephrine and all LAs except articaine. In 10 healthy controls, skin prick tests with articaine were negative. Subcutaneous challenge test with mepivacaine (0.3 and 0.5 ml) was negative. Provocations with the remaining anesthetics of the amide group were not carried out due to the patient's refusal.

**Key words:** Articaine. Anesthetic. Immediate hypersensitivity.

## RESUMEN

Presentamos un caso de una mujer de 51 años que tuvo una reacción cutánea inmediata tras la administración subcutánea de un anestésico compuesto de articaina + epinefrina, en el contexto de una

exploración dental. Se le realizaron posteriormente más tratamientos dentales a la paciente sin la utilización de anestesia local. Las pruebas cutáneas (*prick-test*) con anestésicos locales (lidocaina, mepivacaina, bupivacaina y articaina), fueron negativas con epinefrina y todos los anestésicos locales excepto articaina. En 10 individuos sanos, las pruebas cutáneas fueron negativas con articaina. También se hizo una provocación subcutánea con mepivacaina (0,3 y 0,5 ml) con resultado negativo. No se llevaron a cabo provocaciones con el resto de anestésicos del grupo amida porque se negó la paciente.

**Palabras clave:** Articaina. Anestésico. Hipersensibilidad inmediata.

## INTRODUCTION

The allergic reactions due to anesthetics are not very frequent and less still by an IgE-mediated mechanism. A cause of it, we don't find many cases published. We introduce a case of allergy to an anesthetic suggestive of being IgE-mediated.

## CASE REPORT

We report a case of a 51-year-old woman who had a reaction with the administration subcutaneous of a local anesthetic (LA) composed by articaine and epinephrine, in the context of a dental procedure. The reaction consisted in erythema and edema of lips, face and eyelids without any other symptom. It appeared immediately to the administration of the anesthetic. The reaction was resolved with treatment with corticoids in two days. The patient had more dental procedures without LA some times after without any reaction.

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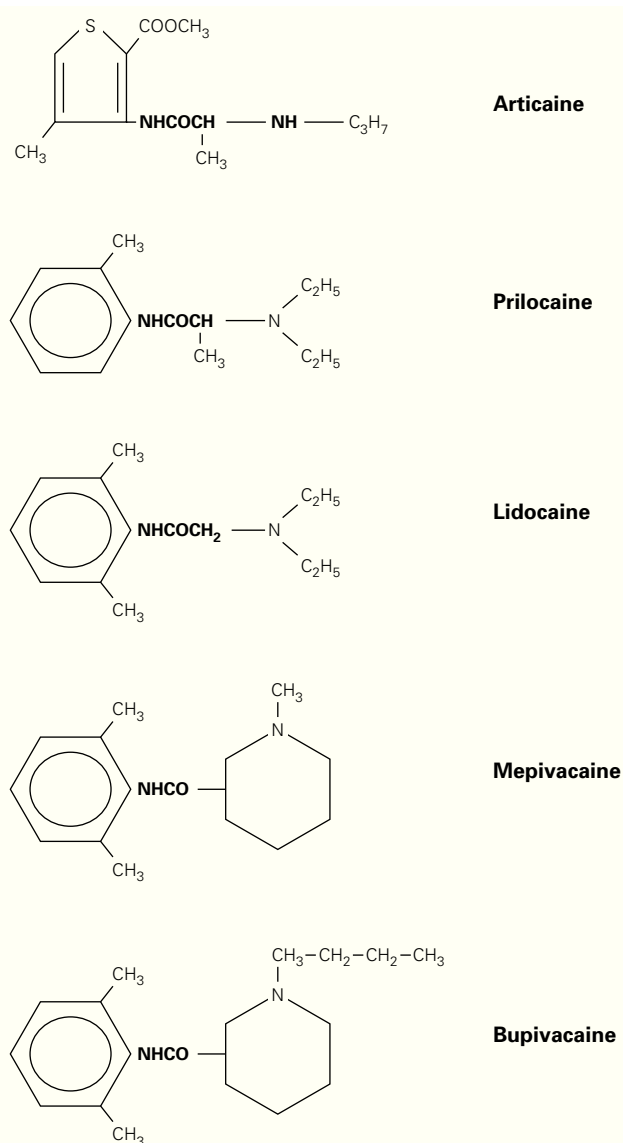


Figure 1.—Local anesthetics of the amide group.

After obtaining the patient's written consent, we began the allergic study. Skin tests were performed with commercial LAs: lidocaine 10 mg/ml (Braun Medical SA, Barcelona, Spain), mepivacaine 20 mg/ml (Braun Medical), bupivacaine 2.5 mg/ml (Inibsa SA,

Barcelona, Spain), and articaine 20 mg/ml (Normon S.A.).

Skin prick tests were negative for epinefrine and all the LA except articaine with a wheal of 6 mm higher than histamine. We carried out controls in 10 healthy patients. All they presented negative prick test with articaine.

Also we did a subcutaneous challenge test with mepivacaine (0.3 and 0.5 ml) with negative result. Provocations with the rest of anesthetics of this group were not carried out because the patient refused it.

## DISCUSSION

Articaine is one of the most used LA in dental procedures. The literature shows that immediate allergic reactions to LA are rare, fewer than 1 %<sup>1-4</sup>. The medical history and the allergy study suggest an immediate IgE-mediated hypersensitivity reaction to articaine.

There are published some cases of allergic reaction to local anesthetics but we didn't find any case of immediate allergic reaction to articaine.

Although it has only been done provocation with mepivacaine, the carried out explorations suggest that there is not cross-reactivity with the rest of anesthetics of the group amide (bupivacaine, mepivacaine and lidocaine). A difference in the ring of the chemical structure could explain this. Articaine has a thienofuran ring while others LA of the amide group have a phenyl-methylated ring (fig. 1).

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