

Contact sensitivity to multiple local anesthetics

David C. Redfern, MD *Waterloo, Ia*

A 26-year-old white woman was seen for evaluation of possible local anesthetic allergy. She was approximately 6 months pregnant at the time of presentation and would likely require either local or regional anesthesia for her

upcoming delivery. A vaginal delivery was planned. The patient described 3 previous reactions to local anesthetics. The first one had been a year or so previously. She had been using an aloe vera gel preparation that also contained lidocaine. After she used it on several occasions, local redness and itching developed. No blistering was associated with this reaction. It was unclear from her description just how long after applying the product that the symptoms began. She also noticed similar symptoms if she used a triple-antibiotic ointment that also contained a local anesthetic. She felt that lidocaine was the agent present in both of the preparations.

More recently the patient required surgery on a toe-

From Allergy and Immunology, Waterloo, Ia.

Received for publication Mar 5, 1999; revised June 23, 1999; accepted for publication June 23, 1999.

Reprint requests: David C. Redfern, MD, Allergy and Immunology, 2055 Kimball Ave, Suite 310, Waterloo, IA 50702.

J Allergy Clin Immunol 1999;104:890-1.

Copyright © 1999 by Mosby, Inc.

0091-6749/99 \$8.00 + 0 1/1/100998

nail. This was performed with use of local anesthesia. Because of the possible reaction to lidocaine, bupivacaine was selected. She had no problems immediately after injection and the procedure was completed without problems. However, about 8 hours after the injection itching developed at the site. Over the next day or so significant but localized redness, swelling, and itching developed. The patient never had blistering and never had any systemic symptoms. She had not had any further exposures to local anesthetics.

Her medical history was significant only for one previous episode of anaphylaxis to an unidentified agent. Physical examination was remarkable only for her being pregnant. It was felt that she was not describing an immediate or anaphylactic-type reaction to the local anesthetics but rather what appeared to be a delayed-type hypersensitivity.

In discussions of local anesthetic allergy it is generally reported that there is extensive cross-reactivity among group I (ester) agents but that group II (amide) agents are not felt to cross-react significantly.¹ (See Table I for examples of each.) These cross-reactivity data supposedly were generated from contact sensitivity-type reactions. This being the case, we elected to perform a patch test on the patient with mepivacaine. This was felt to be an acceptable agent for local or regional anesthesia. The initial patch test was read at 48 hours. The patient showed a strong reaction to the mepivacaine, with significant induration and erythema. Because there was some doubt that lidocaine was the agent contained in the topical preparations that the patient had previously used, we elected to test her with preservative-free lidocaine. Again patch test was performed, and a fairly intense reaction developed, which became vesicular by 48 hours. We subsequently obtained samples of chlorprocaine (group I) and ropivacaine (group II).

TABLE I. Local anesthetics (skin test response)

Group I esters	Group II amides
Procaine	Lidocaine (+)
Chlorprocaine (-)	Mepivacaine (+)
	Ropivacaine (+)
	Bupivacaine

The patient had a 2+ reaction to the ropivacaine but a negative reaction to chlorprocaine. At that point, options were discussed with the patient. Further testing or test dosing was an option, but it was felt that this might sensitize her. Natural childbirth was not a favorable option for her. We felt that chlorprocaine was her best option. She subsequently went into labor but required a cesarean section. This was performed under spinal anesthesia with chlorprocaine. She had no immediate or delayed reactions to the local anesthetic.

This patient had strong contact sensitivity to multiple group II local anesthetics, among which there is supposed to be minimal cross-reactivity. Further testing to see if she would react to other group I agents has not been done. Although most patients who are seen for possible local anesthetic allergy have anxiety or toxicity reactions, true immunologic disease can exist. A careful history can help decide whether testing for immediate hypersensitivity or delayed-type hypersensitivity is required. Although reportedly uncommon, cross-reactivity among group II agents can exist.

REFERENCE

1. DeSwarte RD, Patterson R. Drug allergy. In: Patterson R, Grammer L, Greenberger P, editors. Allergic disease, diagnosis and management. 5th ed. Philadelphia: Lippincott-Raven; 1997. p 385-7.