

Correspondence

Allergic reaction to local anesthetic agents of the amide group

To the Editor:

The recent case report by Cuesta-Herranz et al.¹ of a 30-year-old woman with generalized urticaria after the administration of an unknown local anesthetic is remarkably similar to that of a patient seen by ourselves recently. This 35-year-old woman developed generalized giant hives about 5 minutes after receiving an injection of Ultracaine DS^R (articaine HCl; Hoechst Marion Roussel) at her local dentist. She went to a nearby clinic and received 50 mg of intramuscular diphenhydramine, and her symptoms resolved over 1 to 2 hours. She had no angioedema or breathing problems but did feel faint.

She had last received articaine HCl at the dentist 3 years previously without problems and had an unidentified local anesthetic at the time of delivery of her last child approximately 2 years ago. She had no known food or drug allergies except for the development of hives from eating strawberries. She was not taking any concomitant medications at the time of her reaction except for an oral contraceptive, which she continues to take.

Epicutaneous prick tests with natural ammoniated latex (Bencard, Mississauga, Ontario) and xylocaine 2% (Astra), without adrenaline (articaine HCl without adrenaline was not available to us) were initially carried out about 10 weeks after the reaction. The results of these tests were negative. However, an intradermal test with a 1:100 dilution of xylocaine 2% produced a 6 mm wheal with flare. An intradermal skin test with 1:100 methylparabens 1% produced a negative result, but administration of 1:100 prilocaine 4% (Astra) and 1:100 bupivacaine 0.5% (Abbott) intradermally without adrenaline produced an 8 mm wheal and flare reactions. The saline solution control produced a negative result, and histamine 1 mg/ml by epicutaneous prick test resulted in a 6 mm wheal with flare. Skin test results with procaine 2% 1:100 (Sanofi Winthrop) and 1:10 were negative, and the patient then tolerated a challenge with 0.5 ml of procaine 2% in the left arm without adverse effects.

Although this patient was not challenged with an amide local anesthetic, her history and positive skin test results strongly suggest that she did have an immediate hypersensitivity reaction to articaine and exhibits crossreactivity with other amide local anesthetics. She does not react to the ester procaine.

Adverse reactions to local anesthetics of the amide type are quite commonly seen in allergy practice, but as shown in the several studies quoted by Cuesta-Herranz et al.,¹ true immediate hypersensitivity is very rare. In both their case and our own, when type I hypersensitivity is present, there is extensive cross-reactivity among the local anesthetics of the amide group.

R. J. Warrington, MB, BS, PhD, FRCP(C)
Shawn McPhillips, RN

Section of Allergy & Clinical Immunology
University of Manitoba & Health Sciences Centre
Winnipeg, Manitoba, Canada R3A 1R9

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Reply

To the Editor:

We appreciate the interest of Dr. Warrington and Dr. McPhillips in our article entitled "Allergic reaction caused by local anesthetic agents belonging to the amide group" (*J Allergy Clin Immunol* 1997;99:427-8). We are happy to learn that our case report dealing with allergic reaction to amide local anesthetics is not unique. It is probable that other cases will be reported in the future.

We agree that true immediate hypersensitivity is very rare, but these two cases strongly suggest that cross-reactivity exists among local anesthetic agents belonging to the amide group. This hypothesis is supported by other contact dermatitis reports.¹ Both the skin tests and the control challenge test were useful diagnostic tools.

We believe the best option for a patient having an allergic reaction to an amide local anesthetic is the use of an ester group local anesthetic. Before prescribing other amide local anesthetics, we must perform the appropriate drug allergy study.

Javier Cuesta-Herranz, MD, PhD
Allergy Department
Fundación Jiménez Díaz
c) Reyes Católicos 2
28040 Madrid, Spain

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Psychogenic versus biologic basis for chemical sensitivity

To the Editor:

Chemical sensitivity refers to illness associated with a class of inhalants that includes environmental tobacco smoke, vehicle exhaust, perfumes, fragrances, and solvents. Most of these substances are universal respiratory irritants at some dose, and individuals with rhinitis may have a lower threshold of reactivity to these irritants. Evidence for a relationship between chemical sensitivity and rhinitis includes the significant increase in nasal resistance in patients relative to control subjects,¹ provocative challenge producing increases in nasal resistance in patients but not control subjects,² and chronic inflammation found in nasal biopsy specimens of patients relative to control subjects.³ Patients reporting chemical sensitivity need a thorough evaluation for upper airway inflammation before their symptoms are dismissed as psychologic reactions or hyperventilation, and the recent finding of hyperventilation on challenge published by Leznoff⁴ in this journal does not change this conclusion.

Methodological problems with the Leznoff paper⁴ include the lack of objective analysis of upper airway response to challenge. In addition to anxiety, hyperventilation may be triggered by pain, which was not ruled out in Leznoff's study. Although patients with allergic rhinitis report nasal itching on challenge, patients with rhinitis induced by chemical irritants report nasal burning that can be severe and painful and can conceivably cause hyperventilation. Furthermore, Leznoff subjected patients to challenges for insurance evaluations. Did the outcomes of the challenges affect worker's compensation or disability payments? Challenges under such circumstances could produce

anxiety with concomitant hyperventilation. In this regard, it is interesting that many of his subjects were hyperventilating before challenge.

*William J. Meggs, MD
East Carolina University
School of Medicine
2-71502*

*Department of Emergency Medicine
Greenville, NC 27858-4354*

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Reply

To the Editor:

I thank Dr. Meggs for his interest in my study on patients with multiple chemical sensitivity (MCS).¹ The patients that he studied,² are quite different from ours, and indeed from most patients with MCS. His patients all experienced a toxic exposure. Mine did not (with the possible exception of patient number 10). His patients complained of nasal and eye symptoms, which were not prominent in my patients, despite careful questioning. His patients (7 of 13) had lower, as well as upper, airway disease, both conditions that were absent in mine. It is curious that 11 of 13 patients in his study, like typical MCS patients, could not work despite the fact that persons with equal

or more distressing allergic rhinitis do function in the workplace.

In the article by Doty et al.³ the authors acknowledge that psychologic factors may play a significant role in the patients' nasal responses because their olfactory thresholds were normal. They noted that their patients, like ours, hyperventilated. The fact that nasal membranes were very responsive to emotional stimuli is well documented.⁴

I do not believe that anxiety regarding "insurance" played any role in the patients' responses to challenge because their symptoms in the laboratory were exactly the same (including breathlessness [a selection criterion]) as those that they experienced in everyday life when exposed to stimuli, many of which did not affect the inspired air.

*Arthur Leznoff, MD, FRCPC
Associate Professor of Medicine
University of Toronto
Head, Division of Immunology
Department of Medicine
St. Michael's Hospital
38 Shuter St. #215
Toronto, Ontario
M5B 1A6*

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