

Commentary on: Dudley MH, Fleming SW, Garg U, Edwards JM. Fatality involving complications of bupivacaine toxicity and hypersensitivity reaction. *J Forensic Sci* 2011;56(5):1376–9.

Sir,

In the September issue of the *Journal of Forensic Sciences*, Dudley et al. published an article entitled “Fatality Involving Complications of Bupivacaine Toxicity and Hypersensitivity Reaction.” In this article, the authors attributed the death of the patient to an allergic reaction to bupivacaine. Bupivacaine is an amide-type of local anesthetic, chemically and biologically different from the older ester-type local anesthetics like procaine.

In their article, Dudley et al. believed the patient’s hypersensitivity reaction was attributable to bupivacaine, but allergic reactions to the amide class of local anesthetics are rare (1,2) in comparison with the esters and other drugs.

Despite the anaphylactic nature of the patient’s reaction and the presence of an elevated tryptase, suggestive of hypersensitivity and mast cell degranulation, the triggering agent may not have been the bupivacaine.

Multidose vials of bupivacaine frequently contain either methylparaben or sodium metabisulfite as preservatives (2). Methylparaben resembles p-aminobenzoic acid that is found in ester-type local

anesthetic, and sodium metabisulfate is a known allergen, found in wines, which used to be sprayed on salad bars to keep the greens fresh, until too many people suffered allergic reactions.

I suggest that the patient in Dudley’s paper did not have an allergic reaction to bupivacaine, but to one of the preservatives in the formulation. A review of the label for the formulation that was used or recognition that the bottle was, indeed, a multidose vial would raise suspicion about the presence of allergenic preservatives. Unless the presence of methylparaben or sodium metabisulfite can be ruled out, the patient’s allergic reaction cannot be attributed to bupivacaine.

References

1. Adriani J, Zepernick R. Allergic reaction to local anesthetics. *South Med J* 1981;74:694–9.
2. Aldrete JA, Johnson DA. Evaluation of intracutaneous testing for investigation of allergy to local anesthetic agents. *Anesth Analg* 1970;49:173–83.

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