Response to: "Cost analysis of the use of buffered lidocaine 1%, epinephrine 1:100,000 with sodium bicarbonate in a 3:1 ratio"

To the Editor: Thank you to Wu et al[1] for their cost analysis of buffered lidocaine 1%, epinephrine 1:100,000 with sodium bicarbonate in a 3:1 ratio reported in our study.[2] The authors calculate the additional cost of buffering at 3:1, rather than the conventional ratio of 9:1, to be 10 cents, 20 cents, and 30 cents for syringes of 2 mL, 5 mL, and 10 mL, respectively (for mixed syringes of lidocaine 1%, epinephrine 1:100,000 buffered with sodium bicarbonate). At a cost of about $2 per local anesthetic, the price difference is statistically significant ($P = .01$) but negligible relative to the total cost of a dermatosurgical procedure. We are very grateful to Wu et al[1] for clarifying the important aspect of cost-effectiveness. The low additional cost should not prevent anyone from buffering local anesthesia or indeed buffering at a 3:1 ratio.

Many patients fear local anesthesia more than the operation itself. We get a lot of positive feedback from patients in the clinical setting who are generally surprised at how little the local anesthesia itself hurts. Using 3:1 buffered local anesthesia, we see virtually no vagal reactions (1-2 patients per 4000 operations per year).

At the end their letter, Wu et al[1] rightly point out that opened vials of sodium bicarbonate must be discarded at the end of the surgical day. With lancing ampoules, there is a risk that CO_2 will escape over time, causing the pH to rise unnoticed until caustic soda remains (pH 11).[3] This also explains the rare cases of colliquative necrosis (Fig 1) after buffered local anesthesia. Patients in such cases report severe pain during infiltration of the anesthetic solution, followed later by the appearance of skin necrosis, which must be excised.

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Fig 1. In this patient, the local anesthesia was buffered using a sodium bicarbonate ampoule which had already been pierced and used more than day earlier. The patient developed colliquative necrosis as a result. Tests of the remaining sodium bicarbonate in the ampoule showed a pH value of 11 (see text).

Conflicts of interest

None disclosed.

REFERENCES

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