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Letter to the Editor

Letter to the Editor regarding, "Efficacy of the TuttleNumbNow Intraosseous Method for Pulpal Anesthesia in the Mandibular First Molar-A Prospective, Randomized, Crossover Study"

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TO THE EDITOR

With great enthusiasm I reviewed the article by Dolphin et al. published recently evaluating the anesthetic efficacy of the TuttleNumbNow (TNN) intraosseous technique when compared to a buccal infiltration for pulpal anesthesia in the mandibular first molar [1].

While the thoroughness of the study is to be commended, I have three significant concerns regarding the methodology described. As the inventor and primary educator of the TuttleNumbNow technique, it was clear the recommended protocol was not executed by the operator.

First, the study details that injection of a full cartridge (1.8ml) of anesthetic was attempted after entry into the bone. The TNN manual [2] instructs the delivery of only 0.45ml and warns against the use of a full carpule [2, p.19]. The operator gave over 300 percent of the recommended dose, affecting heart rate and lip numbness as evidenced with overflow in surrounding tissue and "extravasation of anesthetic solution out of the mental foramen" [1].

Second, the study describes that a single operator performed every injection [1, p.8]. While such a study design ensures consistency, the accuracy of conclusions may be inaccurate if the technique is not performed correctly. The operator demonstrated pitfalls warned against in the training manual, namely needle clogging (47% of injections) and needing to exchange needles (44% of injections). Success rates of anesthetic techniques are known to vary across studies by different operators, suggesting that conclusive judgements should not be made based on the abilities of a single operator [3].

Third, the forceful over-delivery of anesthetic described in the study led to outcomes inconsistent with the TNN injection. The study states, "technique calls for a slow injection with low pressure and low volume. However, upon entry into the bone with the Septoject Evolution needle, there was often a need for a high pressure to successfully inject the solution." This high pressure is never recommended by the TNN protocol and results in tissue necrosis as authors admitted in the findings [1].

In addition to the methodology, the article discussion evaluates the TNN intraosseous injection as a stand-alone injection. However, the TNN manual identifies it as a step within an integrated anesthetic protocol [2-5]. The study evaluated the TNN intraosseous injection as a stand-alone primary injection, when it is actually the first of a series of ten recommended injections to achieve profound numbness.

Readers must be aware of these deviations from proper TNN methodology when interpreting the results of the study. In addition, future investigators must take care to accurately represent TNN protocol when performing studies. The future of dental anesthesia depends upon it.

Sincerely,

Gregory K. Tuttle, DDS

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