

DENTAL ANESTHESIA

Supplementary anesthesia for endodontic procedures



BACKGROUND

Although adequate anesthesia is essential during endodontic procedures, dental anesthetic injections don't provide sufficient anesthesia in many cases. When the primary injection fails, supplemental anesthesia is often used. The most commonly used supplemental injections are intraligamentary and intraosseous injections, with intraligamentary injection considered a viable supplement after a failed inferior alveolar nerve block (IANB). A comparison of the anesthetic efficacy of 4% articaine and 2% lidocaine given as supplemental intraligamentary injections after a failed IANB was performed.

METHODS

A total of 106 adult patients participated. All had symptomatic irreversible pulpitis in a mandibular first or second molar. These patients first received an IANB with 2% lidocaine with 1:80,000 epinephrine. Pain levels were measured using a visual analog scale (VAS). Eighty-two patients with insufficient pain relief were randomly assigned to receive a supplementary intraligamentary injection of 4% articaine with 1:100,000 epinephrine or 2% lidocaine with 1:80,000 epinephrine. Endodontic treatment was then resumed. Successful pain relief was defined as no or mild pain with either the primary or supplementary injection. In addition, heart rate was monitored via finger pulse oximeter.

RESULTS

All patients reported profound lip numbness. The success rate for the initial injection was 19%. Among the patients who received the supplementary injections, those receiving the 4% articaine had a success rate of 66%, but those receiving 2% lidocaine had a success rate of 78%. The difference was not statistically significant.

The heart rate monitoring began at the end of intraligamentary injection and consisted of measurements every 15 seconds. Mean heart rate increased immediately after injection in both groups, but the increase did not reach significant levels.

DISCUSSION

The results in terms of pain relief for the 2 intraligamentary injections were not statistically significantly different. Both solutions improved success rates with no significant increase in heart rate.

Clinical Significance

The use of supplementary intraligamentary anesthesia after failed IANB is not an uncommon procedure, since the initial block is often unable to achieve complete pain relief. Either articaine or lidocaine for this supplementary injection produces much higher rates of success in terms of relief of pain.

Aggarwal V, Singla M, Miglani S, et al: Efficacy of articaine versus lidocaine administered as supplementary intraligamentary injection after a failed inferior alveolar nerve block: A randomized double-blind study. *J Endod* 45;1-5, 2019

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Reducing dental anxiety



BACKGROUND

Dental fear leads patients to delay having needed dental procedures, which produces increasingly worse oral health, making the ultimate dental appointment an extremely anxiety-provoking experience. All of this does nothing to alleviate the patient's fear. The aspect of dentistry that usually produces the greatest anxiety is the dental injection. Dental practitioners have tools and skills to make injections less painful and reduce patients' anxiety.

TOPICAL ANESTHETIC

The use of a topical agent, usually 20% benzocaine or lidocaine with a flavoring agent, is often overlooked or minimized in dental practices. Dental practitioners may find it ineffective, and it does not provide complete relief of pain, but it does work well on mucous membranes. Oral injections begin in the mucous membranes, so topical anesthetic application should be reconsidered (Box 1).