



BRIAN SIMPSON, D.M.D. DIPLOMATE OF THE AMERICAN BOARD OF ORAL & MAXILLOFACIAL SURGERY
113 NORTH MIDDLETOWN ROAD NANUET NY 10954 (845) 623-3497 FAX (845) 623-4039 www.drbrriansimpson.com

Local Anesthesia Failures

Recently, several of you have contacted me after experiencing difficulty in obtaining adequate local anesthesia. Here are some thoughts to contemplate and suggestions as to what you might consider.

Why does local anesthesia fail?

Local anesthesia failures, especially inferior alveolar nerve blocks (IANB), can fail approximately 20% of the time. The failure rate can be as high as 55% with an irreversible pulpitis (Claffey, et al, *J Endo*, Aug 2004). One of the main reasons for failure for IANB in a "hot tooth" is that the mediators of pain (prostaglandins, histamine,

kinins, substance P) can enter the nerve, move up the nerve and prevent the local anesthesia from working. Additional reasons for failed local anesthesia are: short needles, needle deflection, inadequate volume, anatomical variations, local anesthesia or vasoconstrictor, patient factors, and pKa-pH factors.

What causes injection pain?

The main reason for injection pain is the rate of injection. A faster injection will be more painful. Consider IANB over 1-2 minutes. The needle gauge and temperature do not matter. The acidity or specific anesthetic may matter.

Carr, et al, *J. Dent Res*, 80:128, 2001
Meechan, et al, *Anes Prog.*, 52:91-94, 2005
Rogers, et al, *Gen Dent*, 37:496-499, 1984
Oikarinen, et al, *Int J Oral Surg*, 4:151-156, 1975

What can be done?

1. **Controlling infection** is critical. This can be realized with antibiotics or drainage procedures until the tooth is no longer "hot."
2. Use a **longer gauge needle** to ensure that the local is getting to the intended target.
3. Try a **25 gauge needle**

to prevent needle deflection.
4. Make sure that there is **enough volume** (but not too much to avoid local anesthetic toxicity).

5. Wait.

6. Make sure the **bevel of the needle is pointing towards the nerve**. Septodont has markers on the needle base which indicate bevel direction.

7. **Aim higher**. If you have missed the block, you are probably too low.

8. Attempt **buccal and lingual infiltration** (Be mindful of the submandibular gland on the lingual side of the mandible).

continued on reverse

Dental Fun Fact

DID YOU KNOW THAT...

IN 1530 ARTZNEY BUCHLEIN PUBLISHED THE *LITTLE MEDICINAL BOOK FOR ALL KINDS OF DISEASES AND INFIRMITIES OF THE TEETH*. IT WAS THE FIRST BOOK DEVOTED ENTIRELY TO THE PRACTICAL TOPICS IN DENTISTRY.

-ADA

News You Can Use

The American Dental Association in collaboration with Crest® and Oral-B® revealed findings from a national public opinion survey on oral health care.

While Americans deem the smile the most important physical attribute, a surprising **37 percent of Americans don't**

know that poor oral health has been associated with serious health conditions such as stroke, heart disease and diabetes.

To earn more about the survey results and cavity prevention tips, visit www.ada.org

Local Anesthesia Failures

9. Take care for **local anesthesia storage**. Local anesthetics can degrade from light exposure and high temperatures (store between 59 – 86°F).

10. Try **different techniques**. The vast majority of IANB injections are made with the traditional **Halstead technique**. This is the one you use every day. Alternative injections include the **Akinosi tech-**

nique (*Br J Oral Surg* 1977; 15(1): 83-7). In this method, the patient's mouth is closed and the needle is inserted parallel to the maxillary gingival margin. In the **Gow-Gates technique** (*Anes Prog* 1989; 36 (4-5):193-5), the patient's mouth is wide open and the needle touches the condyle, then is withdrawn 1 mm and is redirected medial to the condyle. Other techniques

include periodontal ligament, intra-pupal (if possible), and intra-osseus injections (*J Endo* 1996; 22: 481-6). Stabident has a system for intra-osseus injections.

11. If lidocaine has not worked, **try an injection of mepivacaine** to make more of the neutral lidocaine available to penetrate the nerve (remember pKa and the Henderson-Hasselbalch equation?)

Local anesthesia is an enormous topic and I've tried to deliver real clinical techniques to help. If you have any questions, please call (845-623-3497) or email me (drbriansimpson@optonline.net).

Synergy Training Program

Dr. Brian Simpson reflects on the second and third sessions of the Synergy Training Program.

Synergism: The joint action of agents, that when taken together, increase each other's effectiveness

On October 24th and 25th, Dr. Bruce Ouelette, a certified 3i speaker and I conducted the second and third sessions of the Synergy Training Program at Pasta Cucina in New City. The sessions tackled a number of cases for treatment including single tooth implants in the posterior and aesthetic

regions, multiple implant cases with interim restorations, denture cases with Locators, and everything in between. The two days, dedicated to treatment planning only, sparked interesting and stimulating discussions. Bob Renza joined us to give his perspective from the laboratory point of view. The emphasis of our program is on the team approach: each member of the implant team (surgeon, restorative dentist, and laboratory technician) coordinates his/her efforts with the other members.

Session four will be held on

March 13, 2009 and will focus on restorative procedures. The final session will be on April 24, 2009 when the final case presentations will be completed.

If you have any questions about the Synergy Training Program, please call me at the office at (845)-623-3497 or email me at drbriansimpson@optonline.net.

Because of the tremendous initial success of this program, we plan to have other implant educational opportunities in the future.

"In times of uncertainty, there is no greater beacon of hope than acting on the courage of one's convictions for a better tomorrow." - unknown