



## Huntington Village Implant & Oral Surgeons

### PETER H. PRUDEN, D.D.S\*, P.C. & Associates

\*Diplomate of the American Board of Oral and Maxillofacial Surgery

\*Fellow of the American Dental Society of Anesthesiology \*Fellow of the American College of Dentists

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**Tuesday**  
**Sept. 26,**  
**2017**

3 CE Credits

**Presenter:**  
**Richard**  
**Marcus,**  
**DDS**

“Updates in  
Diagnosis &  
Endodontic  
Treatment  
Planning”

Registration  
Dinner  
5:30 pm

Lecture  
6:00 - 9:00 pm

**Knights of  
Columbus**

9A Hewitt  
Square,  
East Northport,  
NY

This course is sponsored by the Suffolk County Dental Society, an ADA-CERP recognized provider of Cont. Ed. (CE) approved by the New York State Dental Association and a designated PACE Program Provider for the Academy of General

### “Mepivacaine Versus Lidocaine”

Visconti RP, Tortamano IP, Buscariolo IA: Comparison of the anesthetic efficacy of mepivacaine and lidocaine in patients with irreversible pulpitis: A double blind randomized clinical trial. J Endod 42:1314-1319, 2016

#### Clinical Significance:

Lidocaine had a pulpal anesthesia rate of 67%, whereas mepivacaine had a rate of 86%. IAN block success rates were 14% for lidocaine and 55% for mepivacaine. It appears that mepivacaine was more effective than lidocaine for providing IAN block during pulpectomy.

#### Background:

The pain of irreversible pulpitis is caused by acute pulp inflammation. This inflammation causes vasodilation, increased vascular permeability; and leukocyte leakage. The pulp is confined and unable to expand, resulting in increased internal tissue pressure. Mepivacaine and lidocaine are both used in such situations to provide pain relief. Inferior alveolar nerve (IAN) blocks have success rates of 62% to 96% and may not always provide sufficient relief for the success of the clinical procedure being done, especially with irreversible pulpitis, which has a failure of IAN block rate of 37% to 85%. Patients often feel pain during endodontic treatment of teeth with irreversible pulpitis, making this procedure and the relief of pain during it challenging. The anesthetic efficacy of 2% mepivacaine plus 1:100,000 epinephrine and that of 2% lidocaine plus 1:100,000 epinephrine during pulpectomy of mandibular posterior teeth in patients with irreversible pulpitis were compared.

#### Methods:

The 42 patients with irreversible pulpitis were seen in the emergency department of the University of Sao Paulo School of Dentistry. They were randomly assigned to receive conventional IAN block with 1.8 or 3.6 mL of either 2% mepivacaine or 2% lidocaine, both with 1:100,000 epinephrine. They subjectively assessed their lip anesthesia. Electric pulp stimulation was used to assess the absence or presence of pulpal anesthesia, while a verbal analog scale was used to evaluate the absence or presence of pain during pulpectomy. Only lower molars were tested in the evaluation.

#### Results:

Subjective lip anesthesia was reported by 10 minutes after the IAN block in all patients. Ten patients (3 mepivacaine and 7 lidocaine) did not reach the maximum output of the electric pulp tester without feeling pain even after receiving a second cartridge of anesthetic and were eliminated from the study.

Fifty two percent of the mepivacaine patients and 33% of the lidocaine patients had pulpal anesthesia with a single cartridge of anesthetic. After administration of a second cartridge, 86% of the mepivacaine group and 67% of the lidocaine group had pulps that were sufficiently anesthetized. The two groups showed no significant difference.

During the pulpectomy, 8 mepivacaine patients and 12 lidocaine patients reported pain scores of 2 and 3. The difference between the two groups was statistically significant. Intraligamentary injection was administered to one lidocaine patient but none of the mepivacaine patients.

#### Discussion:

Patients receiving lidocaine reported pain significantly more often than those receiving mepivacaine. Although the electric pulp testing results were similar for the two anesthetics, mepivacaine users required fewer injections and smaller volumes of the drug. Mepivacaine was therefore considered more effective than lidocaine for achieving IAN block for the performance of pulpectomy.