

Less Pain, More Gain

Perform these facial blocks like an experienced dentist...
your patients will thank you.

by Kip Benko, MD

The use of facial anesthesia in Emergency Medicine has become increasingly popular as many EPs have realized what benefits it brings not only to the patients we serve, but to us as well. Those of us who have faced someone with dry socket pain or a periapical abscess, know full well how satisfying it is to have the patient sigh when their pain is completely relieved. The topical anesthetics, injectable anesthetics, ring syringes and techniques usually reserved for the dentist's office are now a common sight in the modern ED.

Topical Anesthetics

Topical anesthetics, generally, are only effective on the 2-3mm of the surface mucosa. This depth, however, is enough to allow for atraumatic needle penetration of the mucous membrane. 20% benzocaine and 5% lidocaine are the most common preparations used by dentists. The setup time for benzocaine is 30 seconds or so, whereas, lidocaine can take several minutes to set up. Pressurized spray containers are no more effective than viscous or gel forms and should not be used intraorally unless the spray dose is measured and fixed.



Injectable Anesthetics

Most EDs have two choices when it comes to inject-

20% benzocaine (right) and 5% lidocaine are the most common preparations used by dentists.

able anesthetics, lidocaine or bupivacaine. The addition of epinephrine lets us tailor each to a particular patient's needs. Bupivacaine results in complete anesthesia for 6-8 hours with residual pain control lasting up to 48 hours. This has been demonstrated in several studies and the implications for use in odontalgia is obvious. Why not give people with true odontalgia the chance to have decent pain control for 2 days until they can see a dentist? Seems reasonable to me.

Syringes

The problem with using standard syringe systems in the mouth is that they don't allow the operator to adequately aspirate and visualize at the same time. We know that side effects and complications of oral injections are primarily a result of intravascular injection. Dentists and oral surgeons learned this a long time ago, so they typically use stainless steel ringed aspirating syringes and carpule anesthetics. The introduction of plastic reusable ring syringes has now made carpule anesthetic systems more efficient to use and clean in emergency departments.

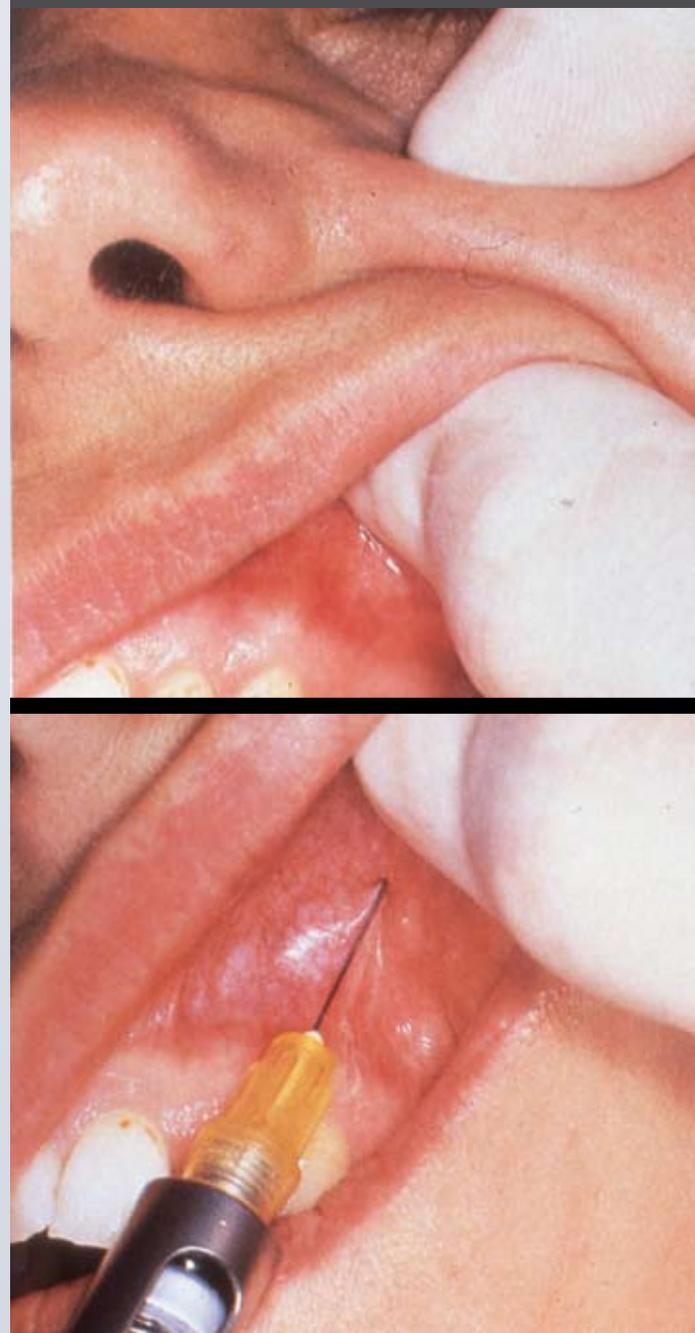


Reusable Thumb-ring Aspirating Syringes

The Blocks The EP Should Know!

Following are listed the regional facial anesthetic procedures that emergency physicians should be familiar with. A complete discussion on the performance of these procedures is beyond the scope of this text and the reader is referred to a procedural text (references). Detailed instructional videos of the following blocks can also be seen at www.epmonthly.com, under Current Features.

Infraorbital Nerve Block



1

The infraorbital nerve block is really indispensable for EPs. Not only does this block provide anesthesia to the anterior maxillary teeth, but also to the lower eyelid, medial cheek and the lip as well. Although approaches vary, I believe the intraoral approach is superior because it allows the user to continue to inject anesthetic while withdrawing the needle, allowing for a higher success rate.

THROMBIN, TOPICAL U.S.P. (BOVINE ORIGIN) THROMBIN-JMI®

BRIEF SUMMARY of Full Prescribing Information

Thrombin, Topical (Bovine) must not be injected! Apply on the surface of bleeding tissue.

INDICATIONS AND USAGE

THROMBIN-JMI® is indicated as an aid to hemostasis whenever oozing blood and minor bleeding from capillaries and small venules is accessible.

In various types of surgery, solutions of THROMBIN-JMI® may be used in conjunction with an Absorbable Gelatin Sponge, USP for hemostasis.

CONTRAINDICATIONS

THROMBIN-JMI® is contraindicated in persons known to be sensitive to any of its components and/or to material of bovine origin.

WARNING

The use of topical bovine thrombin preparations has occasionally been associated with abnormalities in hemostasis ranging from asymptomatic alterations in laboratory determinations, such as prothrombin time (PT) and partial thromboplastin time (PTT), to severe bleeding or thrombosis which rarely have been fatal. These hemostatic effects appear to be related to the formation of antibodies against bovine thrombin and/or factor V which in some cases may cross react with human factor V, potentially resulting in factor V deficiency. Repeated clinical applications of topical bovine thrombin increase the likelihood that antibodies against thrombin and/or factor V may be formed. Consultation with an expert in coagulation disorders is recommended if a patient exhibits abnormal coagulation laboratory values, abnormal bleeding, or abnormal thrombosis following the use of topical thrombin. Any interventions should consider the immunologic basis of this condition. Patients with antibodies to bovine thrombin preparations should not be re-exposed to these products.

Because of its action in the clotting mechanism, THROMBIN-JMI® must not be injected or otherwise allowed to enter large blood vessels. Extensive intravascular clotting and even death may result.

PRECAUTIONS

General—Consult the Absorbable Gelatin Sponge, USP labeling for complete information for use prior to utilizing the thrombin saturated sponge procedure.

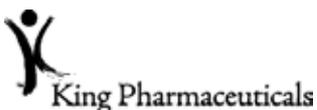
Pregnancy — Category C — Animal reproduction studies have not been conducted with THROMBIN-JMI®. It is also not known whether THROMBIN-JMI® can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. THROMBIN-JMI® should be given to a pregnant woman only if clearly indicated.

Pediatric Use — Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Allergic reactions may be encountered in persons known to be sensitive to bovine materials. Inhibitory antibodies which interfere with hemostasis may develop in a small percentage of patients. See **Warning**.

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2

The Supraperiosteal Injection (the tooth block)



The supraperiosteal injection should be used whenever analgesia and anesthesia are required for a relatively circumscribed area in either the maxilla or mandible. This injection provides pulpal anesthesia to one or two teeth as well as the surrounding mucoperiosteum. It is technically easy and is associated with a high success rate. This is the procedure to perform when a patient has a toothache or you need to manipulate the tooth in some way, such as covering a fractured tooth or replacing an avulsed tooth.

4

Inferior Alveolar Nerve Block



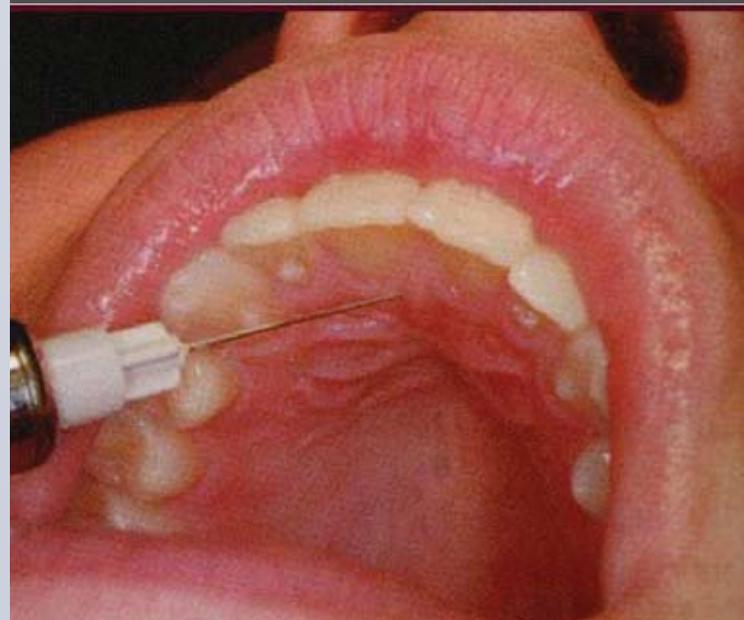
The inferior alveolar nerve block is a necessary skill for the EP to possess as the mandibular molars are not always effectively blocked with a supraperiosteal injection. The thicker, more dense cortical bone of the mandible combined with the multiple roots of the molars sometimes makes it necessary to use an inf. alv. nerve block to adequately anesthetize the posterior lower teeth. Approaching from the opposite premolars and not injecting until bone is contacted minimizes side effects or complications.

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The Nasopalatine Nerve Block

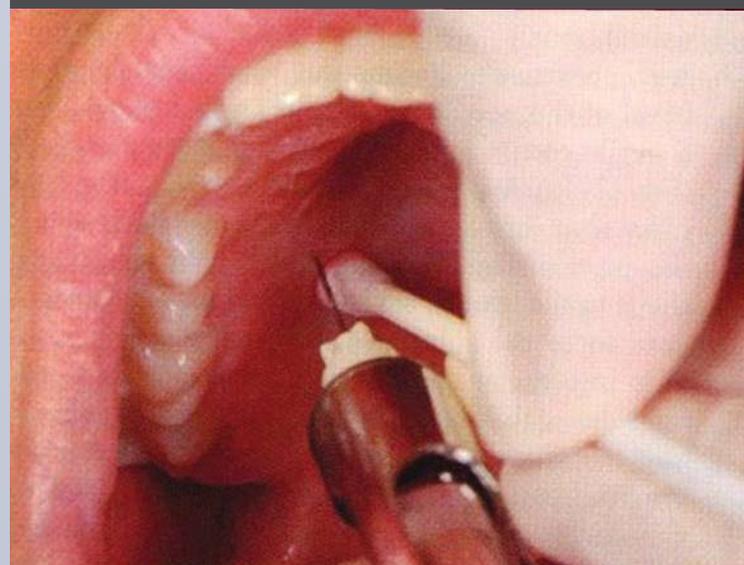


The nasopalatine nerve block is used to augment a supraperiosteal block of the anterior maxillary teeth or to anesthetize the anterior mucosa in case of injury or laceration of the palate.

The key to the palatine nerve blocks is using a small amount of anesthetic (0.3-0.4cc), injecting very slowly, using distraction, and advancing the needle with the bevel against the mucosa, not the needle tip.

5

Greater Palatine Nerve Block



The greater palatine nerve supplies the unilateral posterior portion of the hard palate and its overlying soft tissues. Its primary use in emergency medicine is for palatal lacerations or for augmenting a supraperiosteal injection of the posterior maxillary teeth. Remember, topical anesthetic does not work sufficiently on the thick mucosa of the palate, therefore, injections of the palate should always be used with distraction techniques, such as applying pressure with a cotton tipped applicator.

The Mental Nerve Block

The mental nerve consists of terminal fibers of the inferior alveolar nerve. It supplies the mucosa, lip, and chin from the premolars anteriorly and, therefore, is an ideal nerve block when faced with a lip or chin laceration. If pressure is held over the mental foramen after the injection, anesthetic can be forced into the mental foramen, effectively blocking the incisors, canine and part of the premolars as well. The premolars serve as the landmark to perform the mental nerve block, as well as the infraorbital nerve block.