Fixing Faces Painlessly
Facial and Dental Emergencies
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Why should we use facial blocks?
• Makes your patients more comfortable.

Why Bother??
• Makes your job easier.
When can we use facial blocks?

- Intraoral soft tissue injuries
- Doesn't distort the anatomy.
- Allows for better cosmetic results.

When can we use facial blocks?

- Management of laceration
  - Simple
  - Through and through

So....
Why don't we do it???

- We aren't comfortable with our skills.
- We aren't comfortable with the equipment.
- We aren't comfortable with the anatomy.
Objectives

- Become familiar with the anatomic approach to various facial nerve blocks.
- Explain the regional anesthesia concepts and local anesthetic pharmacology.
- List the possible complications associated with facial nerve block anesthesia.

Equipment

Syringes

- Standard medical syringes are cumbersome.

Equipment

Syringes

- Aspirating ring syringes are ideal.
Equipment

Needles

- 25-27 gauge are best.
- 30 gauge--be careful!

Equipment

Topical Anesthetics--Underused!!

- Liquids, Sprays, Gels
- Benzocaine 20% and Lidocaine 5% are the best....
Equipment

- Topical Anesthetics
  - Gels & viscous solutions are most effective
  - 2-3mm penetration
  - set up time
  - hard palate

Equipment

- Injectable Anesthetics
  - Consider patient population
  - Duration of action needed
  - Add a vasoconstrictor!!
    - Increase duration
    - Provide hemostasis
    - No increase in toxicity
Equipment

- Original anesthetic - Novacaine
  - Ester
  - Antigenic
- Lidocaine-- fast acting amide
  - Shorter duration of action
  - 2% conc. with epi is best
  - Can use in kids
Dental Anesthetic Solutions

Lidocaine
- 1.8ml carpule of 2% Lidocaine
  - 38 mg lidocaine
  - 0.18 mg epinephrine
- 60-90 minutes pulpal anesthesia
- 3-4 hours mucosal anesthesia

Equipment

- Bupivacaine (marcaine)
  - Amide
  - Long duration of action
  - Best when combined with epi.
  - Not approved for use under 12 yrs.
  - Max. intraoral dose is 90 mg (10 dental cartridges=18cc)
Attenuation of pain in a randomized trial by suppression of peripheral nociceptive activity in the immediate postoperative period


Bupivacaine

- 110 patients undergoing molar extractions
- General anesthesia
- Randomized to bupivacaine, lidocaine, both or placebo injections
- At 24 and 48 hours, the bupivacaine group required less rescue narcotic and antiemetic intake.

Bupivacaine

- Conclusion: blockage of nociceptive input decreases central hyperexcitability, resulting in less pain and additional analgesic intake.
General Principles of Correct Injection

- Seat patient in a comfortable reclining position.
- Position yourself to optimize access & vision.
- Apply topical.

General Principles of Correct Injection

- Retract mucosa to enhance vision & minimize needle insertion trauma.
- Dry Injection Site.
- Before you inject, use distraction to minimize pain.

General Principles of Correct Injection

- Using a palm’s up technique, insert the needle gently and slowly to its intended position.
General Principles of Correct Injection

- Aspirate prior to injection!!
- Inject slowly at 2cc/min

Anatomy

Such accidents can be prevented by wearing a mouthguard.
Avulsed Tooth

- Locate the missing tooth
- If tooth is not recovered assume ingestion or aspiration (check lung sounds--future X-rays may be indicated)
- Usually anterior teeth
- Around 30 minute out of socket max.

Avulsed Tooth

- Gently Rinse, but do not scrub, the tooth with saline or slowly running tap water.
- Replace the tooth in its socket ASAP and consult a dentist.

Avulsed Tooth

- Keep moist by:
  - Hank’s solution “SAVE A TOOTH”
  - Placing in saliva
  - Milk
  - DO NOT put in wet paper towel - dries out the periodontal ligaments
Tooth avulsion

- Stabilization
- Complication: resorption
- Prompt reimplantation critical for good prognosis

Anatomy--1 nerve to know!!

- Trigeminal nerve (5th) consists of 3 sensory branches
  --Ophthalmic
  --Maxillary
  --Mandibular
Ophthalmic Division V1

Sensation to the skin of the upper eyelid, forehead, ant. scalp and part of nose.

Forehead Block

- Supraorbital & Supratrochlear Nerves

- The supraorbital foramen is located above the centered pupil
- For any repair involving the middle part of the forehead and root of the nose, the block must be bilateral.
Maxillary Division V2

- Infraorbital Nerve
- Nasopalatine Nerve
- Greater Palatine Nerve
- Superior Dental Plexus

Maxillary Division

- Infraorbital N.
  - Supplies the lower lid, medial cheek, side of the nose and upper lip.
- Exits the infraorbital foramen.
Maxillary Division

- Nasopalatine nerve
  - Supplies the most anterior part of the hard palate and the adjacent gum margins of the upper incisors.
  - Exits the incisive canal.

Maxillary Division

- Greater Palatine Nerve
  - Supplies most of the hard palate and the palatal aspect of the gingiva.
  - Exits the posterior palatal foramen.

Maxillary Division V2

- Superior Dental Plexus—3 nerves
  - Post. Sup. Alv. N.—the molars
  - Middle Sup. Alv. N.—the premolars
  - Ant. Sup. Alv. N.—the incisors and canines
Maxillary Anesthesia

- Supraperiosteal Infiltration
  -- "The tooth block"--ideally suited for anesthesia of one or two teeth or a circumscribed portion of the maxilla.
- Will be utilized most often in the E.D.

Supraperiosteal Injection
-- technique

- Retract Lip
- Apply Topical & dry
- Insert Needle parallel to the root of the tooth-mucobuccal fold
- Depth
- Aspirate & Inject
Supraperiosteal Infiltration

Infraorbital Nerve

- Know landmarks!
  - Infraorbital foramen
  - 1st maxillary premolar
  - Get close to the nerve

Infraorbital Nerve

- Enter above max. 2nd premolar
- Needle parallel with axis of tooth
- Palpate needle
- Cooperation is important
Infraorbital Nerve

Infraorbital block

- Extraoral approach
- Anxiety provoking
- More painful for patient
- Above the nerve

Mandibular Division

- 3 branches
  - Inferior Alveolar Nerve
    - Teeth of 1/2 of the mandible
    - Buccal gingival; 1/2 lower lip
    - 2/3 anterior tongue
Mandibular Division

- 3 branches
  - Inferior Alveolar Nerve
  - Long Buccal Nerve
    - Supplies the buccal mucosa (cheek)
    - Mandibular mucoperiosteum.

Mandibular Division

- 3 branches
  - Inferior Alveolar Nerve
  - Long Buccal Nerve
  - Lingual Nerve
    - Supplies the anterior 2/3 of the tongue
    - Lingual mucoperiosteum

Tongue Laceration

- Poorly approximated tongue laceration will lead to a "bifid" tongue.
- Extensive lacerations should get antibiotic prophylaxis.
Tongue Laceration

- Majority of lacerations do not require sutures.
- Anesthesia: Lingual nerve block gives anesthesia to the anterior 2/3 of the tongue.
- Suture: 4-0 Chronic.

Mental Nerve - branch off inferior alveolar

- Lower lip
- Buccal gingiva

Mandibular Anesthesia

- Supraperiosteal Infiltration
  - Mandible denser than maxilla
  - Good for one or two teeth
  - Technique: retract lip, apply topical, dry, advance needle into mucobuccal fold a few mm, deposit anesthetic.
Mandible—supraperiosteal infiltration

Mental Nerve Block
- Good for labial mucosa, gingiva, and the lower lip adjacent to the incisors & canines.

Inferior Alveolar Nerve Block
- Noninjecting thumb goes inside of mouth with the thumb in the coronoid notch of the ramus
Inferior Alveolar Nerve Block

Inferior Alveolar Nerve

- Approach injection point from opposite premolars.
Inferior Alveolar Nerve Block

- Place needle 1.5-2 cm posterior to your thumbnail in the raphe.
- Advance needle until you gently tap the bone, usually 1-2 cm.
- Inject

Complications

- 1. Overdosage--rare, most common in kids.
- 2. Side effects:
  - CNS: lightheadedness, dizziness, tinnitus, visual change, etc. Confusion, seizures, death, at extremely high doses.
Complications

- Side Effects
  - Cardiac: palpitations, tachycardia. Usually benign. Be more careful with bupivacaine and etidocaine.

  PREVENTION: Aspirate!! Inject slowly

- 3. Allergies--RARE in amide family, more common in esters. Also, remember preservatives. Cardiac lidocaine does not have preservatives. Severe allergies can occur up to 1 hr later.


- 6. Hematoma--usually in people on blood thinners or after injecting into artery. Treat like all hematomas. Resorbs spontaneously. Be wary of coumadin.
Which blocks should YOU be doing??

- Forehead
  - Supraorbital & Supratrochlear Nerves
- Maxilla
  - Supraperiosteal Infiltration
  - Infraorbital Nerve Block

Which blocks should YOU be doing??

- Mandible
  - Supraperiosteal Infiltration
  - Mental Nerve Block
  - Inferior Alveolar Nerve Block

Questions ???

- Thanks to Kip Benko, MD