Pain and anxiety Control

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Mandibular Injection Techniques

Mandibular Injection Technique

- Inferior Alveolar N. Block (IAN)
- Gow-Gates (V₃)
- Vazirani-Akinosi
- Mental N. Block
- Icise N. Block
- Long Buccal N. Block

Anatomy
The Needle

- Gauge: the larger the gauge the smaller the internal diameter of the needle
  - 25g red cap
  - 27g yellow cap
  - 30g blue cap
- Long Needle: 32mm
- Short Needle: 20mm

Differences by manufacturer

The Cartridge

- 1.) Cylindrical glass tube
- 2.) Stopper
- 3.) Aluminum cap
- 4.) Diaphragm

Injection technique

- Inferior alveolar nerve block

Inferior Alveolar N. Block (IAN)

- Most frequently used
- Positive aspiration 10 – 15%
- Height of injection: 6 – 10mm above the occlusal plane
- Landmark: coronoid notch,
  - Pterygomandibular raphe
  - Occlusal plane etc

Inferior Alveolar N. Block (IAN) cont.

- Target area: Before alveolar N. enter into the foramen
- Depth: 20 – 25mm
- If bone is contacted too soon:
- If bone is not contacted:
- Lingual N: Deposit small amount of anesthetic upon withdrawing to anesthetize lingual N.

Remember lower incisor region overlaps of sensory fibers from the contralateral side.
Inferior Alveolar N. Block (IAN)

Clinical failure rate: 15-20%
(anatomical variation, depth of soft tissue) height of mandible foramen
Avoid, if possible, bilateral IAN
Anesthetized area:
Position of patient: supine or semisupine
Location of needle tip: superior to the mandibular foramen
Deposit = 1.5mL

Signs and Symptoms
- Tingling and numbness of lower lip
- Tingling and numbness of tongue
- Elimination of pain
Injection technique

- Remember - Always aspirate before injection!

Failure of Anesthesia (IANB)

1. Deposition of anesthetic too low, too anteriorly
2. Accessory innervation
   - Mylohyoid Nerves
   - Overlapping fibers of the contralateral alveolar nerve

Complications of IANB

1. Hematoma
2. Trismus
3. Transient facial paralysis

Injection Technique

- Gow-Gates Block

Mandibular Nerve Block

(Gow - Gates technique)
1973: George Gow-Gates from Australia described true mandibular n. block
Success rate: >95% (IAN:80-85%)
Aspiration rate: < 2% (IAN 10-15%)

Gow-Gates Technique

Distribution of V₃
Target area: Lateral side of the condylar neck
Landmark: Intertragic notch, corner of the mouth, mesiolingual cusp of maxillary 2nd molar
Penetration: Distal to the Mx 2nd or 3rd molar
Height: Mesiolingual cusp of Mx 2nd molar
(10 - 25mm from occlusal plane)
Depth: 25mm
Deposit: 1.8ml
Time of onset: 5-10"(IAN 3-5")
Bone is not contact: no deposit anesthetics
move the syringe distally
Keep the mouth open: 1-2"
**Gow-Gates**

![Image of a person with a mouth open](image1)

**Varizani-Akinosi Closed-mouth Mandibular Block**

- **Trismus:** Extraoral mandibular block
- **1960:** Varizani described technique
- **1977:** Dr. Joseph Akinosi - Useful for patient with trismus
- **Insertion:** Height of the mucogingival junction adjacent to the maxillary 3rd molar
- **Depth:** 25mm
- **Deposit:** 1.5-1.8mL

![Diagram of the mandible and injection site](image2)

**Akinosi**

![Diagram of the injection technique](image3)
Akinosi

Injection technique

- Long buccal block

Long Buccal Nerve Block

Anesthetized: Soft tissue and periosteum buccal to the mandibular molar teeth
Indications: Scaling, curettage, the use of rubber dam clamp, subgingival tooth preparation, place of matrix band
Insertion: Distal, buccal of last molar
Length of needle penetration: 1-2 mm
Deposit: 0.3 mL
Vevel: Toward the bone
Landmark: Mucobuccal fold
**Injection Technique**

- Mental nerve block

**Mental Nerve Block**

- **Indications:** when buccal soft tissue anesthesia is necessary for procedures in the mandible anterior to the mental foramen.
- **Area anesthetized:** buccal mucous membrane anterior to the mental foramen, lower lip, and chin.
- **Technique:** 25-27 gauge short needle.
- Least frequently employed.
**Mental Nerve Block**

Area of insertion: mucobuccal fold at or just anterior to the mental foramen
Target area: between the apices of the two premolars
Patient's mouth: partially closed
Located the mental foramen
- Radiograph
- Clinical exam
- Depth: 5-6mm
- Deposit: 0.6ml
- Bevel: Toward the bone

**Incisive Nerve Block**

**Indications**
- Pulpal anesthesia to teeth anterior to mental foramen
- When inferior alveolar nerve block is not indicated

**Incisive N. Bloc**

Lingual soft tissue are not anesthetized
- Local infiltration through the interdental papilla or partial lingual N. blick
- Not necessary for the needle to enter into the foramen
- Area anesthetized: buccal mucosa, lower lip, pulp of the teeth
- Deposit = 0.6 mL
- Depth of penetration: 5-6mm

**Supplemental Injection Techniques**
- Periodontal ligament injection (PDL)
- Intraseptal
- Intraosseous (IO) technique
- Intrapulpal injection
### Chart Notation for Local Anesthesia

- Give drug name
- Give volume
- Give dosage
- Give location of injection
- Give concentrations
  - local anesthetic agent
  - vasoconstrictor

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**Thank You**