Lec :5 Pedo

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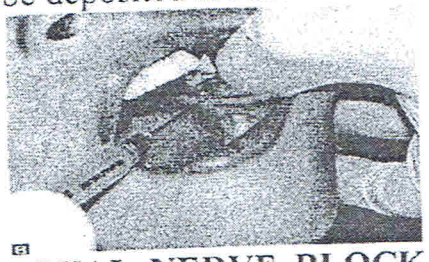
ANESTHETIZATION OF MANDIBULAR TEETH AND SOFT TISSUE -INFERIOR ALVEOLAR NERVE BLOCK (CONVENTIONAL MANDIBULAR BLOCK)

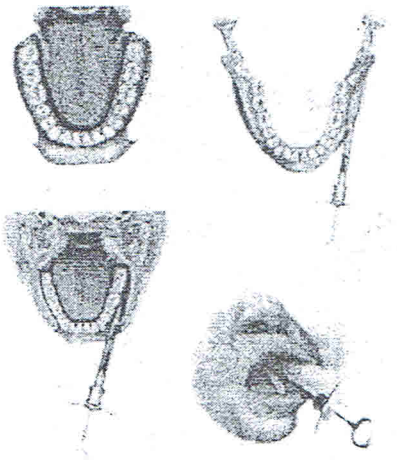
In general, when deep operative or surgical procedures are undertaken for the mandibular primary or permanent teeth, the inferior alveolar nerve must be blocked. The supraperiosteal injection technique may sometimes be useful in anesthetizing primary incisors, but it is not as reliable for complete anesthesia of the mandibular primary or permanent molars.

- The mandibular foramen is situated at a level lower than the occlusal plane of the primary teeth of the pediatric patient. Therefore the injection must be made slightly lower and more posteriorly than for an adult patient.
- An accepted technique is one in which the thumb is laid on the occlusal surface of the molar, with the tip of the thumb resting on the internal oblique ridge and the ball of the thumb resting in the retromolar fossa.
- Firm support during the injection procedure can be given when the ball of the middle finger is resting on the posterior border of the mandible.
- The barrel of the syringe should be directed on a plane between the two primary molars on the opposite side of the arch.
- It is advisable to inject a small amount of the solution as soon as the tissue is penetrated and to continue to inject minute quantities as the needle is directed toward the mandibular foramen.
- The depth of insertion averages about 15 mm but varies with the size of the mandible and its changing proportions, depending on the age of the patient. Approximately 1 mL of the solution should be deposited around the inferior alveolar nerve .



LINGUAL NERVE BLOCK One can block the lingual nerve by bringing the syringe to the opposite side with the injection of a small quantity of the solution as the needle is withdrawn. If small amounts of anesthetic are injected during insertion and withdrawal of the needle for the inferior alveolar nerve block, the lingual nerve will invariably be anesthetized as well.

LONG BUCCAL NERVE BLOCK For the removal of mandibular permanent molars or sometimes for the placement of a rubber dam clamp on these teeth, it is necessary to anesthetize the long buccal nerve. A small quantity of the solution may be deposited in the mucobuccal fold at a point distal and buccal to the indicated tooth.

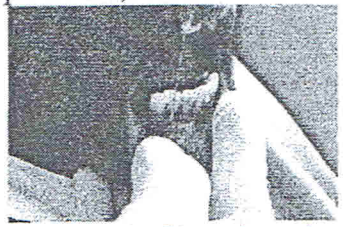


All facial mandibular gingival tissue on the side that has been injected will be anesthetized for operative procedures, with the possible exception of the tissue facial to the central and lateral incisors, which may receive innervation from overlapping nerve fibers from the opposite side.

INFILTRATION FOR MANDIBULAR INCISORS

The terminal ends of the inferior alveolar nerves cross over the mandibular midline slightly and provide conjoined innervation of the mandibular incisors.

- A single inferior alveolar nerve block may not be adequate for operative or surgical procedures on the incisors, even on the side of the block anesthesia.
- The labial cortical bone overlying the mandibular incisors is usually thin enough for supraperiosteal anesthesia techniques to be effective.
- If only superficial caries excavation of mandibular incisors is needed or if the removal of a partially exfoliated primary incisor is planned, infiltration anesthesia alone may be adequate.



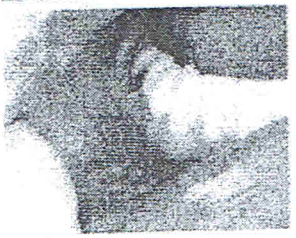
- Incisor infiltration is most useful as an adjunct to an inferior alveolar nerve block when total anesthesia of the quadrant is desired. In this case the infiltration injection is made close to the

midline on the side of the block anesthesia, but the solution is deposited labial to the incisors on the opposite side of the midline.

Mental Nerve Block

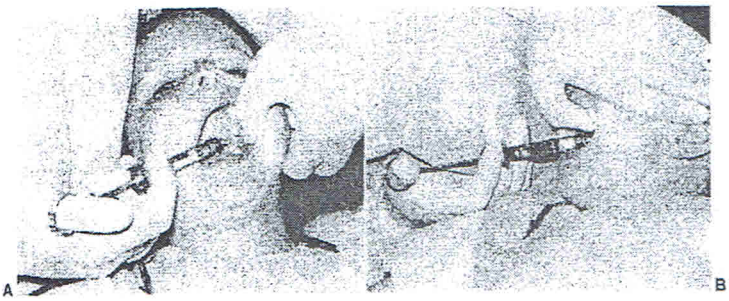
Is effective in producing anesthesia for the premolars and anterior teeth. The amount deposited is 0.5 to 1.0 ml.

Figure 17. Mental/Incisive Nerve Block



MANDIBULAR CONDUCTION ANESTHESIA (GOW-GATES MANDIBULAR BLOCK TECHNIQUE)

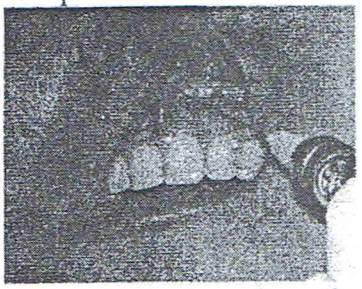
- In 1973 Gow-Gates introduced a new method of achieving mandibular anesthesia, which he referred to as mandibular conduction anesthesia.
- This approach uses external anatomic landmarks to align the needle so that anesthetic solution is deposited at the base of the neck of the mandibular condyle.
- This technique is a nerve block procedure that anesthetizes virtually the entire distribution of the fifth cranial nerve in the mandibular area, including the inferior alveolar, lingual, buccal, mental, incisive, auriculotemporal, and mylohyoid nerves.
- Thus with a single injection, the entire right or left half of the mandibular teeth and soft tissues can be anesthetized, except possibly the mandibular incisors, which may receive partial innervation from the incisive nerves of the opposite side.
- The external landmarks to help align the needle for this injection are the tragus of the ear and the corner of the mouth.
- The needle is inserted just medial to the tendon of the temporal muscle and considerably superior to the insertion point for conventional mandibular block anesthesia.
- The needle is also inclined upward and parallel to a line from the corner of the patient's mouth to the lower border of the tragus (intertragic notch). The needle and the barrel of the syringe should be directed toward the injection site from the corner of the mouth on the opposite side



ANESTHETIZATION OF MAXILLARY PRIMARY AND PERMANENT INCISORS AND CANINES SUPRAPERIOSTEAL TECHNIQUE (LOCAL INFILTRATION)

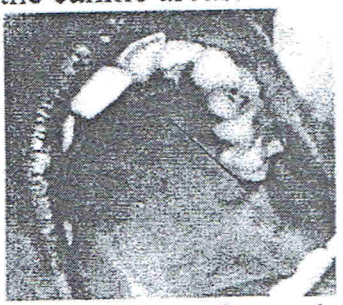
Local infiltration (supraperiosteal technique) is used to anesthetize the primary anterior teeth.

- The injection should be made closer to the gingival margin than in the patient with permanent teeth, and the solution should be deposited close to the bone.
- After the needle tip has penetrated the soft tissue at the mucobuccal fold, it needs little advancement before the solution is deposited (2 mm at most) because the apices of the maxillary primary anterior teeth are essentially at the level of the mucobuccal fold.
- In the anesthetization of the permanent central incisor teeth, the puncture site is at the mucobuccal fold so that the solution may be deposited slowly and slightly above and close to the apex of the tooth.
- Because nerve fibers may be extending from the opposite side, it may be necessary to deposit a small amount of the anesthetic solution adjacent to the apex of the other central incisor to obtain adequate anesthesia in either primary or permanent teeth.



- If a rubber dam is to be applied, it is advisable to inject a drop or two of anesthetic solution into the lingual free marginal tissue to prevent the discomfort associated with the placement of the rubber dam clamp and ligatures.
- Before extraction of the incisors or canines in either the primary or permanent dentition, it is necessary for the palatal soft tissues to be anesthetized.

- The nasopalatine injection provides adequate anesthesia for the palatal tissues of all four incisors and at least partial anesthesia of the canine areas.



- Nerve fibers from the greater (anterior) palatine nerve usually extend to the canine area as well.
- If only a single anterior tooth is to be removed, adequate palatal anesthesia may also be obtained when anesthetic solution is deposited in the attached palatal gingiva adjacent to the tooth to be removed.
- If it is observed that the patient does not have profound anesthesia of anterior teeth during the operative procedures with the supraperiosteal technique, a nasopalatine injection is advisable.