

A close-up photograph of pink cherry blossoms on a dark branch, with a soft, out-of-focus background of more blossoms. The image is partially overlaid by a light gray geometric shape on the right side.

***MAXILLARY NERVE
BLOCKS***

- **Nerve block**- LA deposited close to the main nerve trunk usually at a distance from the site of operative distance.
- **Local infiltration** -Small terminal nerve endings in the area of dental treatment are flooded with local anesthetic solution. Treatment is done in the same area of in which solution has been deposited.

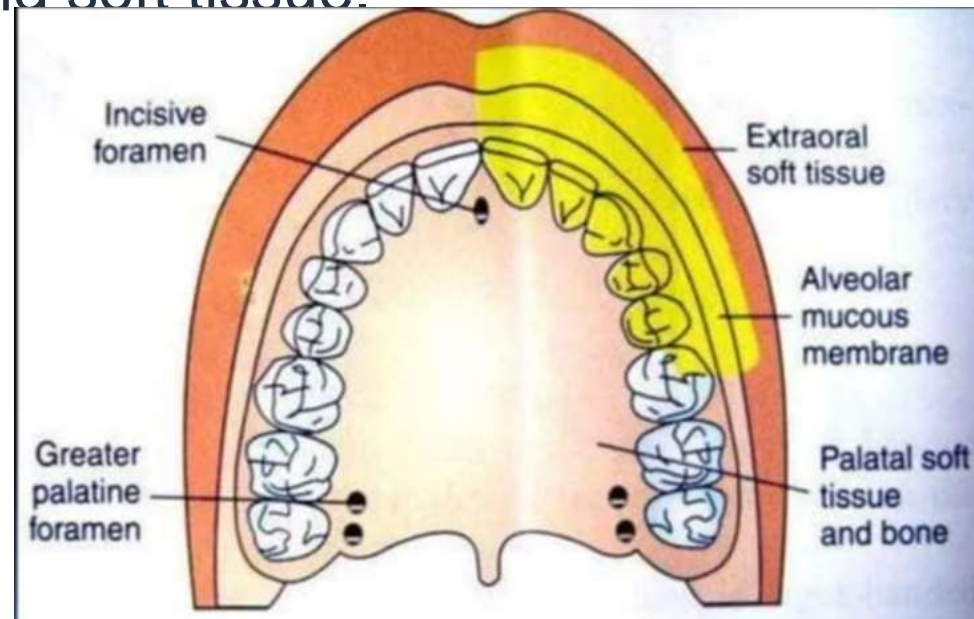
MAXILLARY NERVE BLOCK

1. Infraorbital nerve block
2. Nasopalatine nerve block
3. Posterior superior alveolar nerve block
4. Greater palatine nerve block

INFRAORBITAL NERVE BLOCK

- **Nerves anesthetized**
- Infraorbital
- Anterior and middle superior alveolar
- Inferior Palpebral
- Lateral nasal
- Superior labial nerve

- **Area anesthetized**
- Incisors, cuspids, bicuspids, and mesiobuccal root of 1st maxillary molar including bony support and soft tissue.
- Lower eyelid
- Portion of nose of same side.
- Upper lip



- **Anatomical landmarks**

- Infraorbital ridge

- Infraorbital notch

- Supraorbital notch

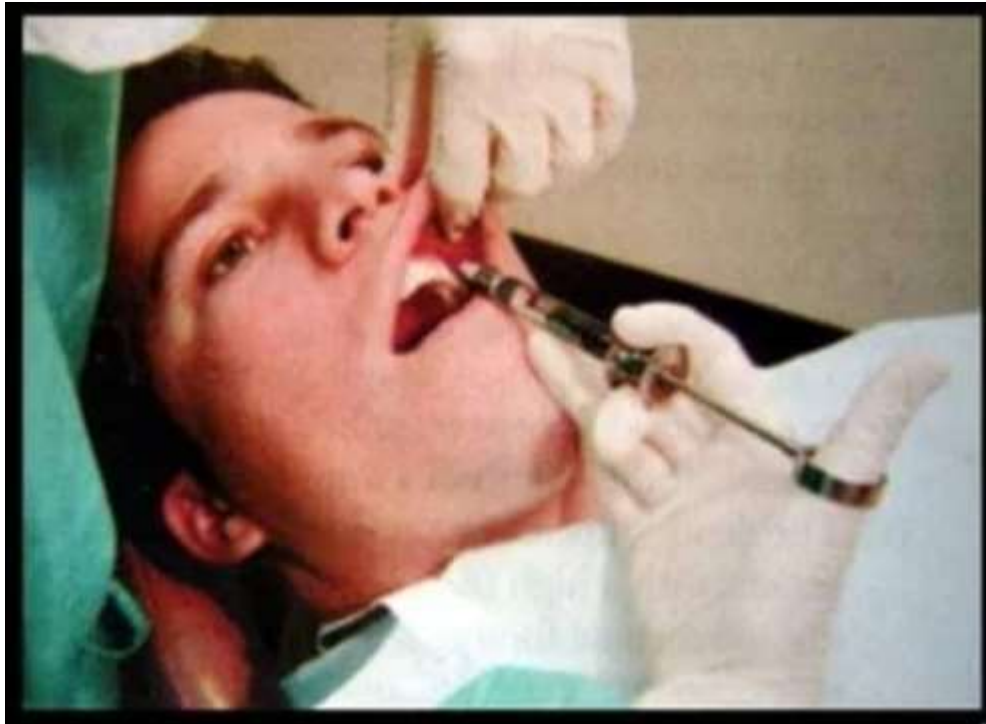
- Anterior teeth

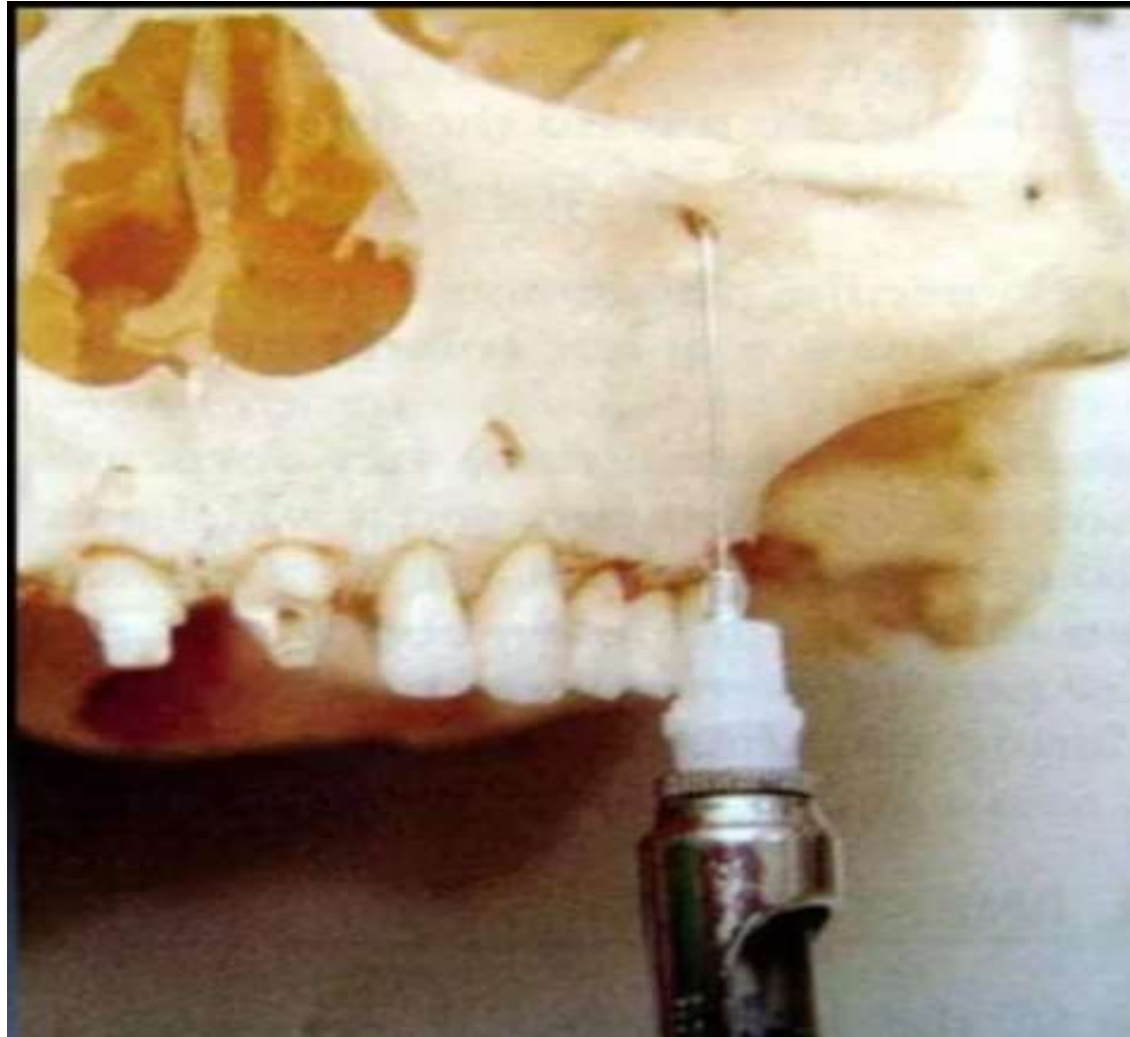
- Pupil of eye

TECHNIQUE

- Patient should be sitting comfortably in the chair and tilted so that the maxillary occlusal plane is at 45 degree angle to the floor.
- Patient is asked to look forward , then Supra and infraorbital notches are palpated.
- Imaginary straight line is drawn vertically which passes through the landmarks.
- When infraorbital notch is palpated finger should be moved 0.5cm where a shallow depression is felt. Infraorbital foramen is located within this depression.
- Suppose for Right Side tooth dentist should stand on the right side and partially facing the patient. Operator's thumb of left hand should be placed at previously located infraorbital foramen.

- A 1 5/8 inch (4.1 cm) length, 25 gauge needle is then inserted in the mucobuccal fold by any of the either approach-
- 1. Bicuspid approach- along long axis of second bicuspid.
- 2. Central incisor approach- bisecting the crown diagonally from mesioincisal angle to distogingival angle.
- Needle should not penetrate more than $\frac{3}{4}$ inch. Limited depth of penetration and palpating thumb prevents the needle from penetrating orbital cavity.
- 2 ml of solution is slowly deposited and the palpating thumb should be held in position.
- For left side patient stands slightly more in front.





- ***Symptoms of anesthesia***

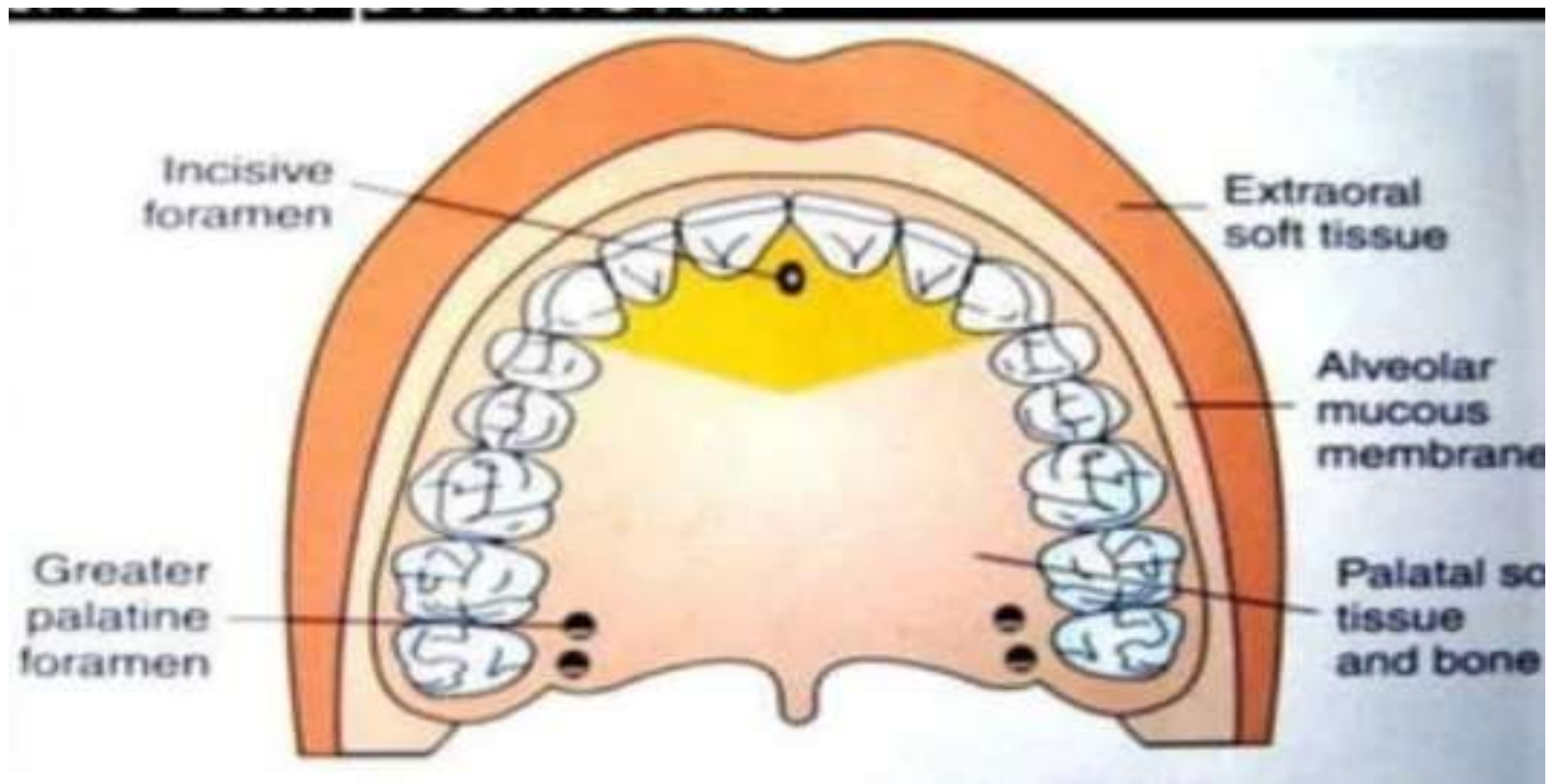
- **Subjective symptoms-** Tingling and numbness of lower eyelid, upper lip and side of nose on the side affected.
- **Objective symptoms-** Instrumentation will demonstrate absence of pain sensation.

- **Complications –**

- Hematoma
- Facial paralysis
- Diplopia

NASOPALATINE NERVE BLOCK

- The nasopalatine nerve block is an extremely painful injection.
- **NERVES ANESTHETIZED-** Nasopalatine nerve as it emerges from the anterior palatine foramen.
- **AREAS ANESTHETIZED-** The anterior portion of hard palate and overlying structures back to bicuspid area, where branches of anterior palatine nerve coursing forward to create a dual innervation.
- **ANATOMICAL LANDMARKS-** Central incisors and Incisive papilla of the palate.



- **TECHNIQUE-**

- Preparatory injection is made by inserting 1 inch, 25 gauge needle at right angle to labial plate and passed into tissue until resistance is met. 0.25 ml of solution is deposited.
- The needle is then withdrawn and reinserted on the crest of the papilla, and it should be in the line of labial alveolar plate.
- The needle is advanced slowly into the incisive foramen, 0.5cm into the canal.
- About 0.25-0.5ml should be injected very slowly to prevent distention of surrounding tissues.

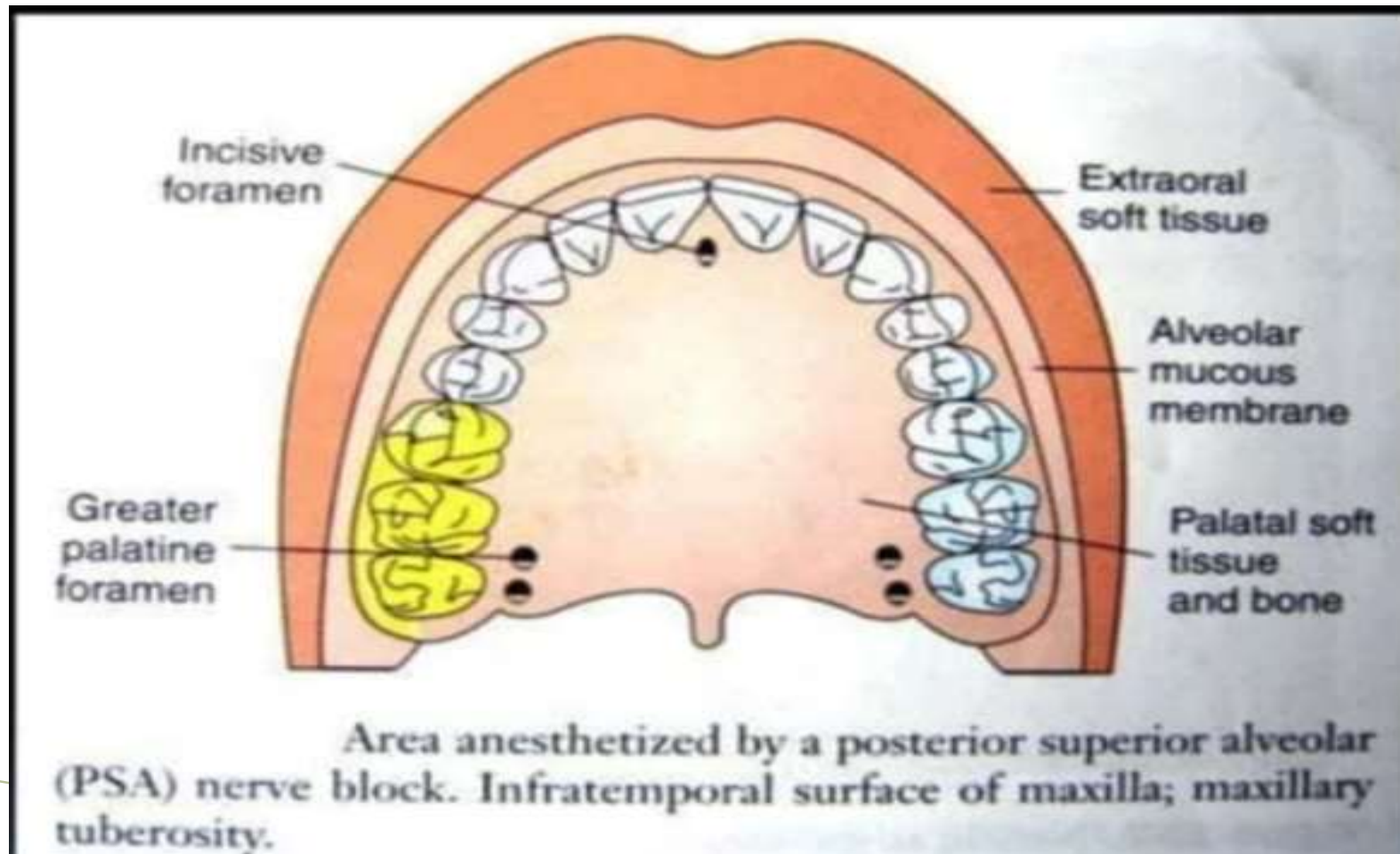


SYMPTOMS-

- **Subjective symptoms-** Feeling of numbness in palate when tongue contacted
- **Objective symptoms-** Instrumentation
- **Complications –** Necrosis of soft tissue due to highly concentrated vasoconstrictor solution

POSTERIOR SUPERIOR ALVEOLAR NERVE BLOCK

- Also called – **Zygomatic block/Tuberosity block**
- **Nerves Anesthetized-** Posterior superior alveolar nerve
- **Areas Anesthetized-**
- The maxillary molars with the exception of the mesiobuccal root of First molar.
- The buccal alveolar Process of maxillary molars including the periosteum, connective tissue and mucous membrane

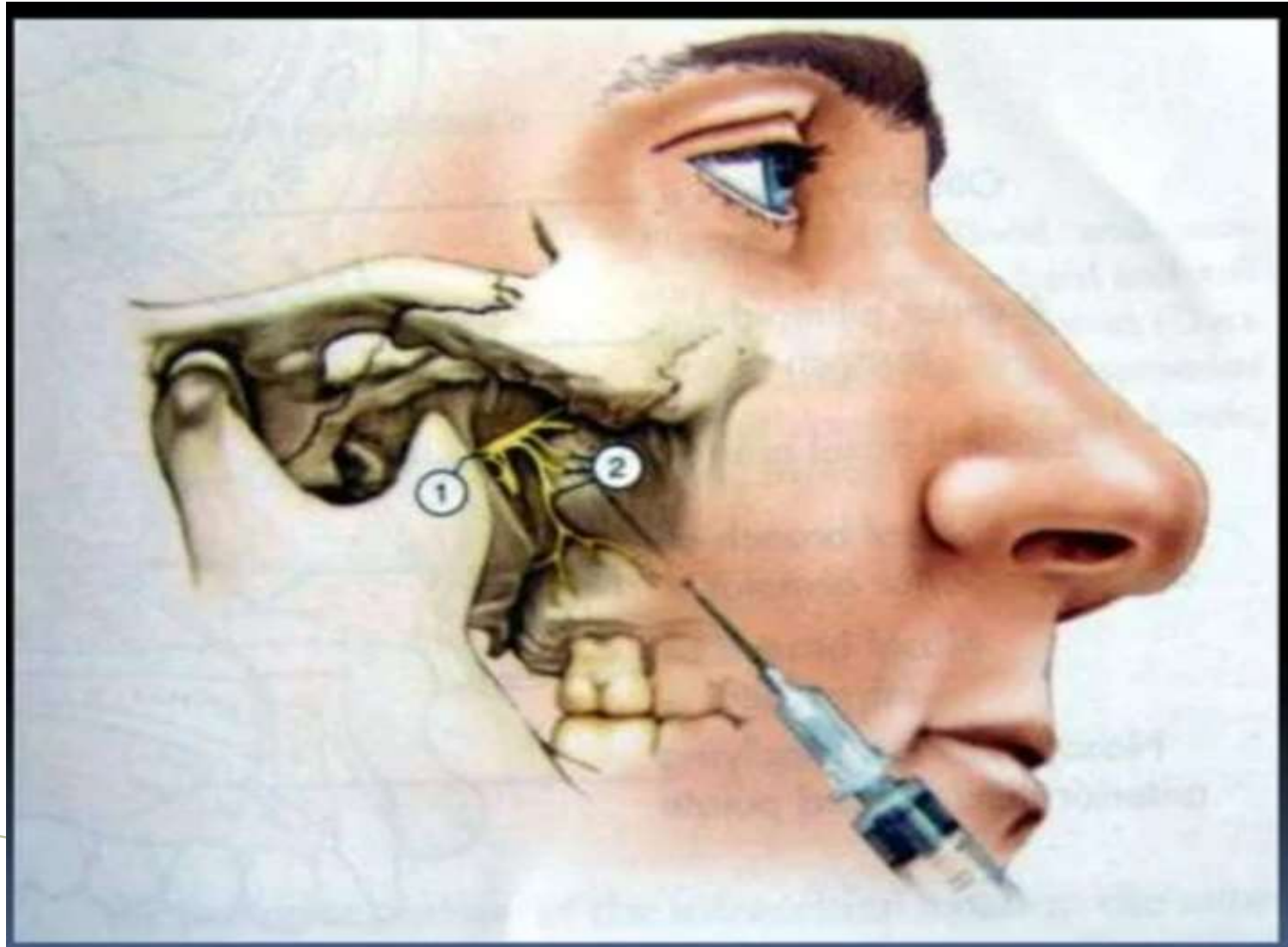


ANATOMICAL LANDMARKS

- Mucobuccal Fold and its concavity
 - Zygomatic process of maxilla
 - Infratemporal surface of maxilla
 - Anterior border and coronoid process of ramus of mandible
 - Maxillary tuberosity
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- **APROXIMATING STRUCTURES WHEN NEEDLE IS IN POSITION-**
 - Anterior to pterygoid plexus of veins
 - Anterior and lateral to anterior margin of lateral pterygoid muscles.
 - Posterior to posterior surface of maxilla.

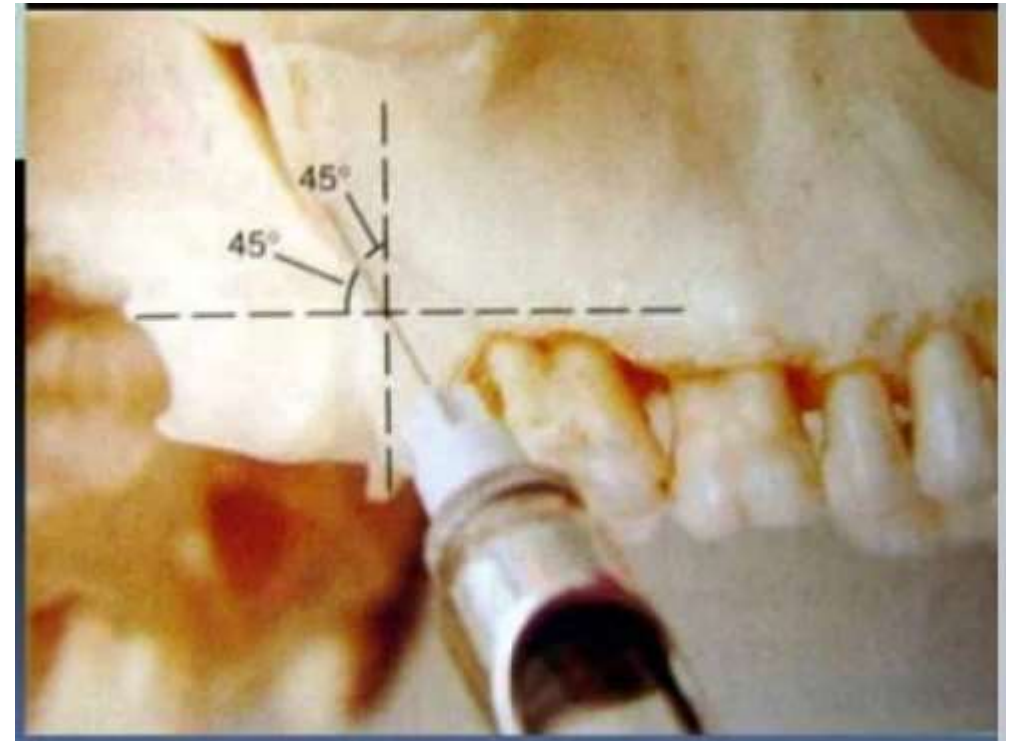
TECHNIQUE

- For Right side, operator stands on right side of the patient.
- Operator moves his left forefinger over the mucobuccal fold in a posterior direction from the bicuspid area until the zygomatic process of maxilla is reached. At its posterior surface of fingertip will rest in concavity in mucobuccal fold.
- At this particular point the forefinger is rotated so that fingernail is adjacent to the mucosa and bulbous portion still resting on posterior surface of zygomatic process.
- Forefinger should be pointing in the exact direction to follow needle.
- A 1 5/8 inch, 25 gauge needle is held in pen grasp and inserted into tissue in line parallel with index finger bisecting the finger nail. 1/2 to 3/4th inch should be inserted upward, inward and backward.
- Aspiration and slowly inject 1.8 to 2ml of the contents.





Posterior superior alveolar (PSA) nerve block.
Tissue retracted at the site of penetration. Notice orientation of
needle: inward, upward, backward.



- **Symptoms-**

- Subjective symptoms- None
- Objective symptoms- Instrumentation.

- **Complications – Hematoma- pterygoid plexus of veins**

- **Mandibular anesthesia: The mandibular division of the 5th cranial nerve is located lateral to the PSA nerve. Deposition of LA lateral to the desired location may produce varying degrees of mandibular anesthesia.**

GREATER PALATINE NERVE BLOCK

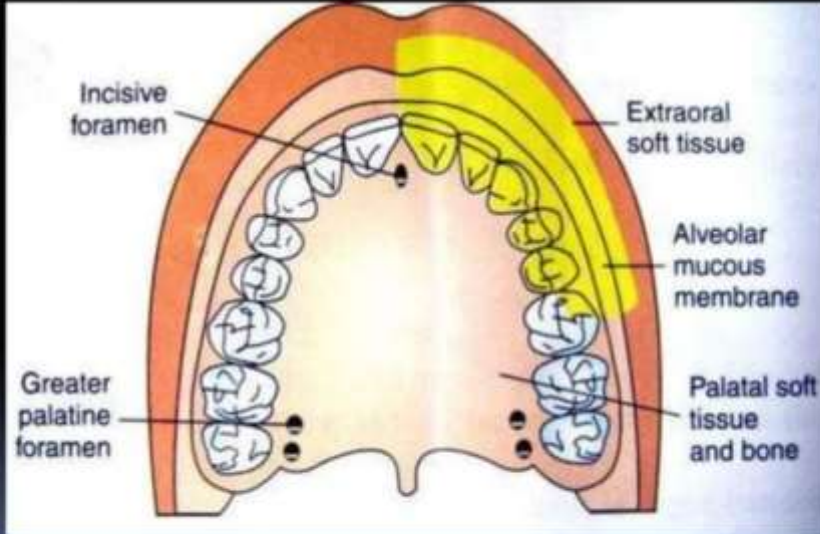
- **Nerves Anesthetized-** Greater palatine nerve as leaves the greater palatine foramen.
- **Areas Anesthetized-** Posterior portion of hard palate and overlying structures upto the 1st bicuspid area on the side injected..

- **Anatomical landmarks-**

- Second and third maxillary molar.
- Palatal gingival margin of 2nd and 3rd max. molar
- Midline of the palate.
- Line approximately 1cm from the palatal gingival margin towards the midline of palate

- **Technique**

- Greater palatine foramen is approached from the opposite side with 1 inch 25 gauge needle which is kept as near to a right angle as possible with the curvature of palatal bone.
- The needle is inserted very slowly until the palatal bone is contacted. The anesthetic solution 0.25-0.5ml is injected very slowly



- **Symptoms-**

- Subjective symptoms- Numbness of posterior palate
- Objective symptoms- Instrumentation

- **Complications-**

- Intravascular injection
- Nasal bleeding (epistaxis)/penetration of nasopharynx