

Sri Aurobindo College of Dentistry

Indore, Madhya Pradesh
INDIA



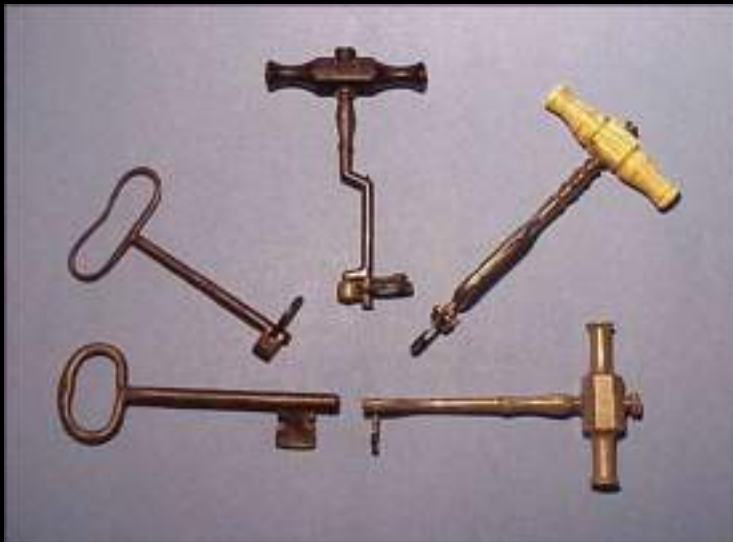
MODULE PLAN

- TOPIC : EXODONTIA
- SUBJECT: ORAL SURGERY
- TARGET GROUP: UNDERGRADUATE DENTISTRY
- MODE: POWERPOINT – WEBINAR
- PLATFORM: INSTITUTIONAL LMS
- PRESENTER:DR.NIKIT AGRAWAL





Pelican



Dental Key



Dr. William Morton

Ether Dome



Massachusetts General Hospital









Exodontia



- The ideal tooth extraction is the painless removal of the whole tooth, or tooth-root, with minimal trauma to the investing tissues, so that the wound heals uneventfully & no postoperative prosthetic complication is created.

Indications for extraction

- Common reasons for extraction are:
 - 1. Carious tooth that is non restorable
 - 2. Periodontally involved teeth
 - 3. Non treatable pulpal or periapical lesion

- **Common reasons for extraction are:**

- 4. To facilitate orthodontic treatment
- 5. Teeth involved in significant infection
- 6. Patients inability to afford more optimal treatment because of limited finances or time.

- **Uncommon reasons for extraction :**

- 7. Malpositioned & malopposed teeth
- 8. Cracked teeth
- 9. Fractured tooth which is nonrestorable
- 10. Impacted teeth

- **Uncommon reasons for extraction :**

- 11. Supernumerary teeth

- 12. Preprosthetic extractions

- 13. Teeth associated with pathologic lesions

- Esthetics

- Economics

Preradiation therapy



- Most feared side effect of radiotherapy is osteoradionecrosis.
- Should teeth be extracted ?
- Extraction may spare the patient, months or years of suffering from osteoradionecrosis

Preradiation therapy



Woman's head undergoing radiotherapy treatment for basal cell carcinoma

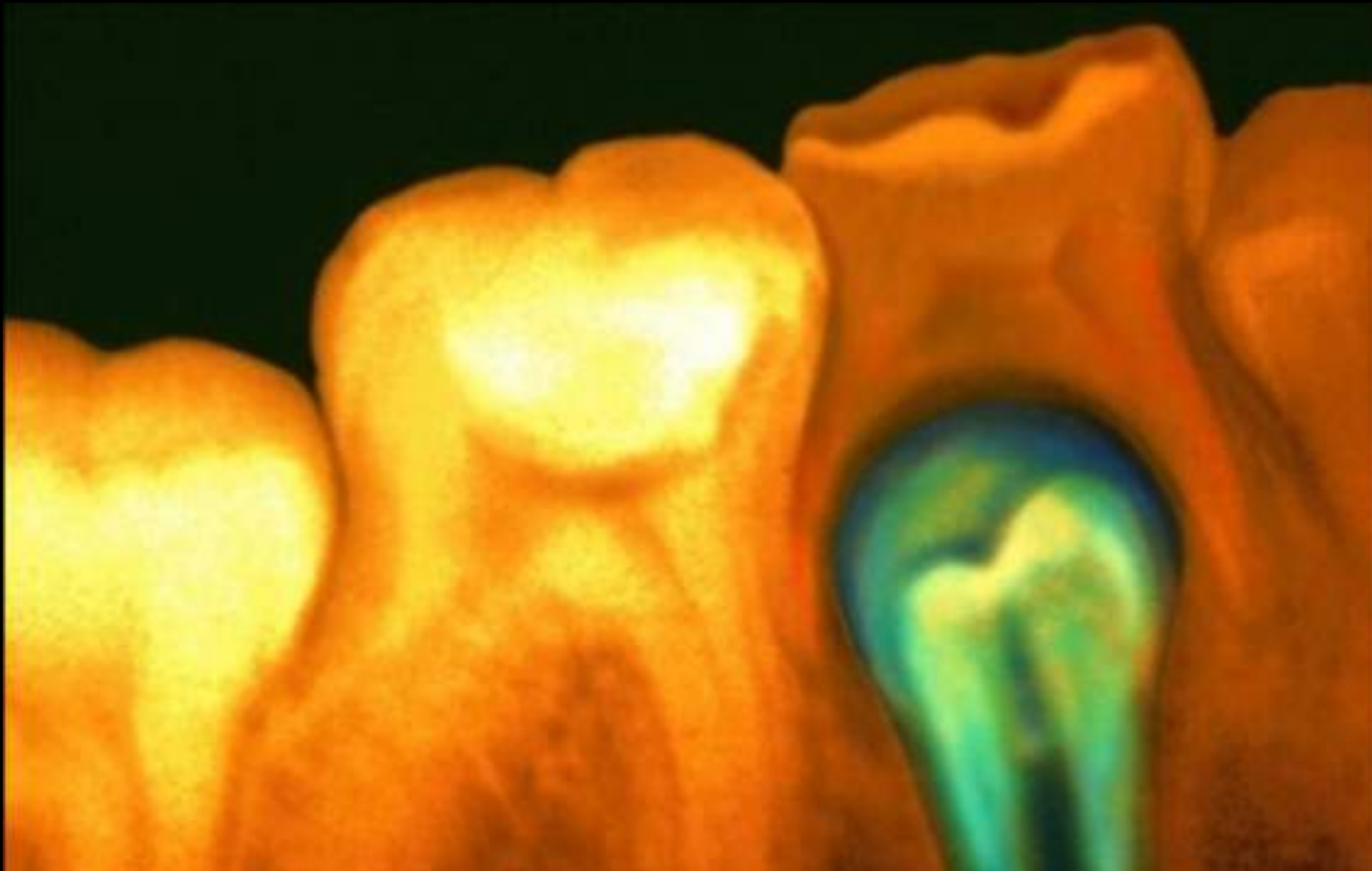
- Attempt is made to remove a good portion of the alveolar process along with the teeth & achieve a primary soft tissue closure
- Traditionally 7 to 14 days between tooth extractions and radiotherapy has been suggested
- Radiotherapy should be delayed for 3 weeks if possible to ensure sufficient soft tissue healing

Tooth associated with jaw fracture



- If tooth is grossly displaced, severely mobile, or grossly decayed – remove
- If tooth is non carious & appears secure in alveolar bone – retain

Over retained deciduous teeth



Contraindications for extraction

- **Systemic contraindications**
 - **Uncontrolled metabolic disease**
 - Diabetes
 - Hyperthyroidism
 - Osteoporosis
 - End stage renal disease
 - **Malignant disease**
 - Leukemia
 - Lymphoma

Systemic Contraindications for extraction

- Uncontrolled cardiac diseases
- Blood disorders
- Patients on medication should be treated with caution (corticosteroids, immunosuppressives, cancer chemotherapy drugs)
- Pregnancy is considered a relative contraindication

Local contraindications

- Previous radiation treatment
- Hemangioma
- Malignant tumours
- Acute oral infections
Acute pericoronal abscess or pericoronitis
AHGS , ANUG. A.periapical ,A.periodontal abscess.

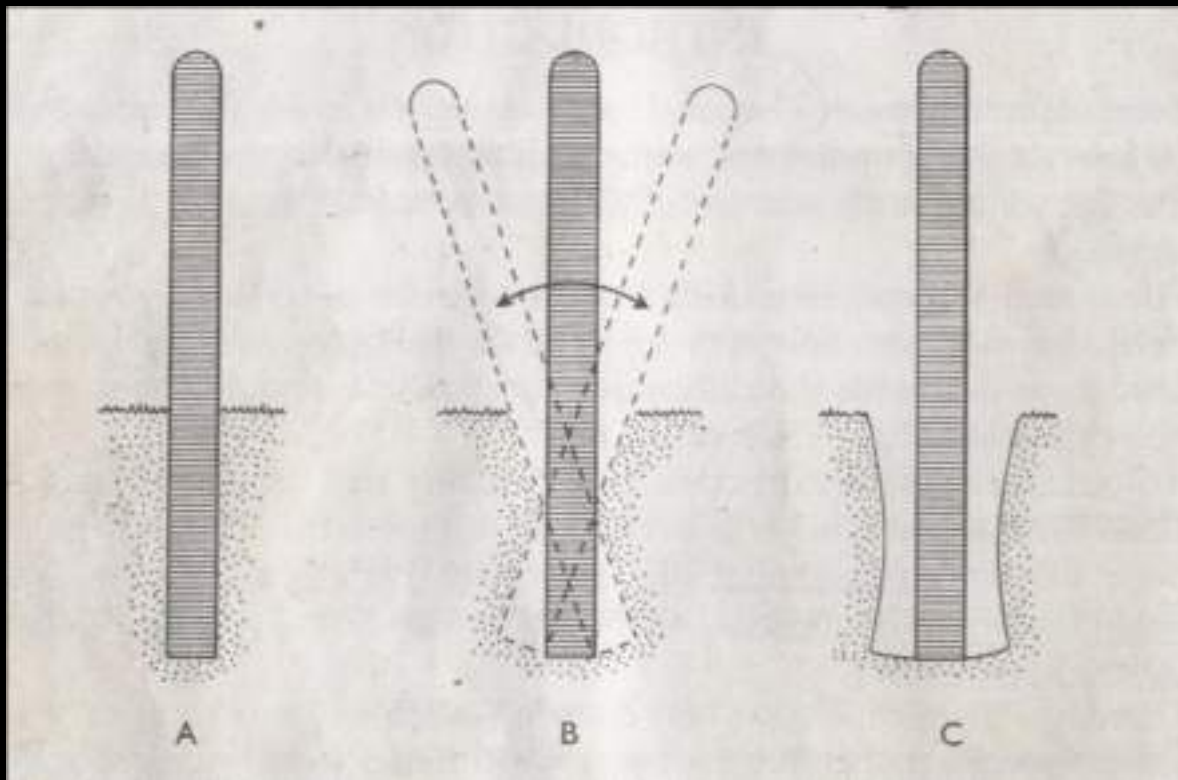
Basic Methods

1. Close / Forceps / Intra-alveolar method

2. Open/ Trans- alveolar method.

Mechanical principles of extraction

- Expansion of bony socket
- The use of lever and fulcrum
- The insertion of the wedge



SOCKET EXPANSION

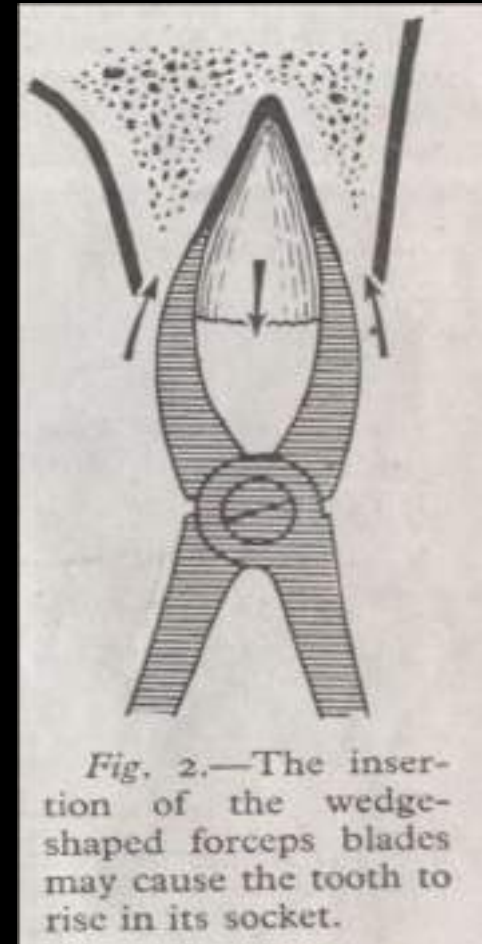


Fig. 2.—The insertion of the wedge-shaped forceps blades may cause the tooth to rise in its socket.

WEDGE

BASIC PRINCIPLES FOR FORCEPS TECHNIQUE

- ❑ Beaks should be seated as far apically as possible without compression of the soft tissues.
- ❑ Beaks of the forceps as parallel as possible to the long axis of the tooth.
- ❑ Application of excessive force should be avoided.

Presurgical assessment

- Medical history
- Dental history (history of difficult extraction)
- Patient's emotional maturity
- Clinical examination
- Radiographic examination

“Never treat a stranger” — *Textbook of practical O&MFS by Daniel Waite*

Clinical examination

- Presence of infection
- Restriction of mouth opening
- Condition of the crown of the tooth
- Tooth mobility
- Tooth alignment in the arch

Indications for a preoperative radiograph

- History of difficult or attempted extraction
- Tooth abnormally resistant to forceps extraction
- If a transalveolar approach is going to be used
- Teeth or roots in close relationship to maxillary sinus or inferior dental & mental nerves

Indications for a preoperative radiograph

- All mandibular 3rd molars, instanding premolars, or misplaced canines
- Heavily restored or pulpless teeth
- Tooth affected by periodontal disease accompanied by some sclerosis

Indications for a preoperative radiograph

- Tooth subjected to trauma
- Isolated maxillary molar
- Partially or unerupted tooth
- Retained root

Indications for a preoperative radiograph

- Any condition which predisposes to dental or alveolar abnormality
 - Osteitis deformans in which the roots are hypercementosed & there is predisposition to chronic osteomyelitis
 - Cleido-cranial dysostosis, for pseudo anodontia & hooked roots occur in this condition

Conditions predisposing to dental abnormality

- Patients who have received therapeutic irradiation to the jaws
- Osteopetrosis predisposes to chronic osteomyelitis

Relationship to Maxillary sinus



- If only a thin layer of bone is present between the sinus & the molar teeth, there is increased potential for perforation of the maxillary sinus during extraction

Configuration of roots

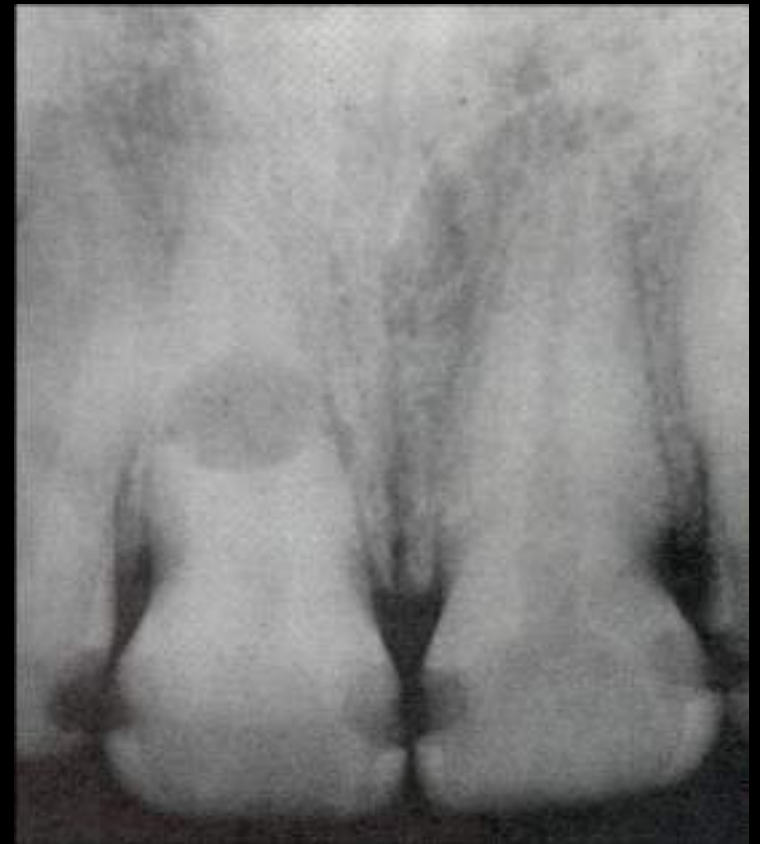


- First evaluate number
- Then
 - Curvature
 - Shape
 - Size
 - length

Root caries



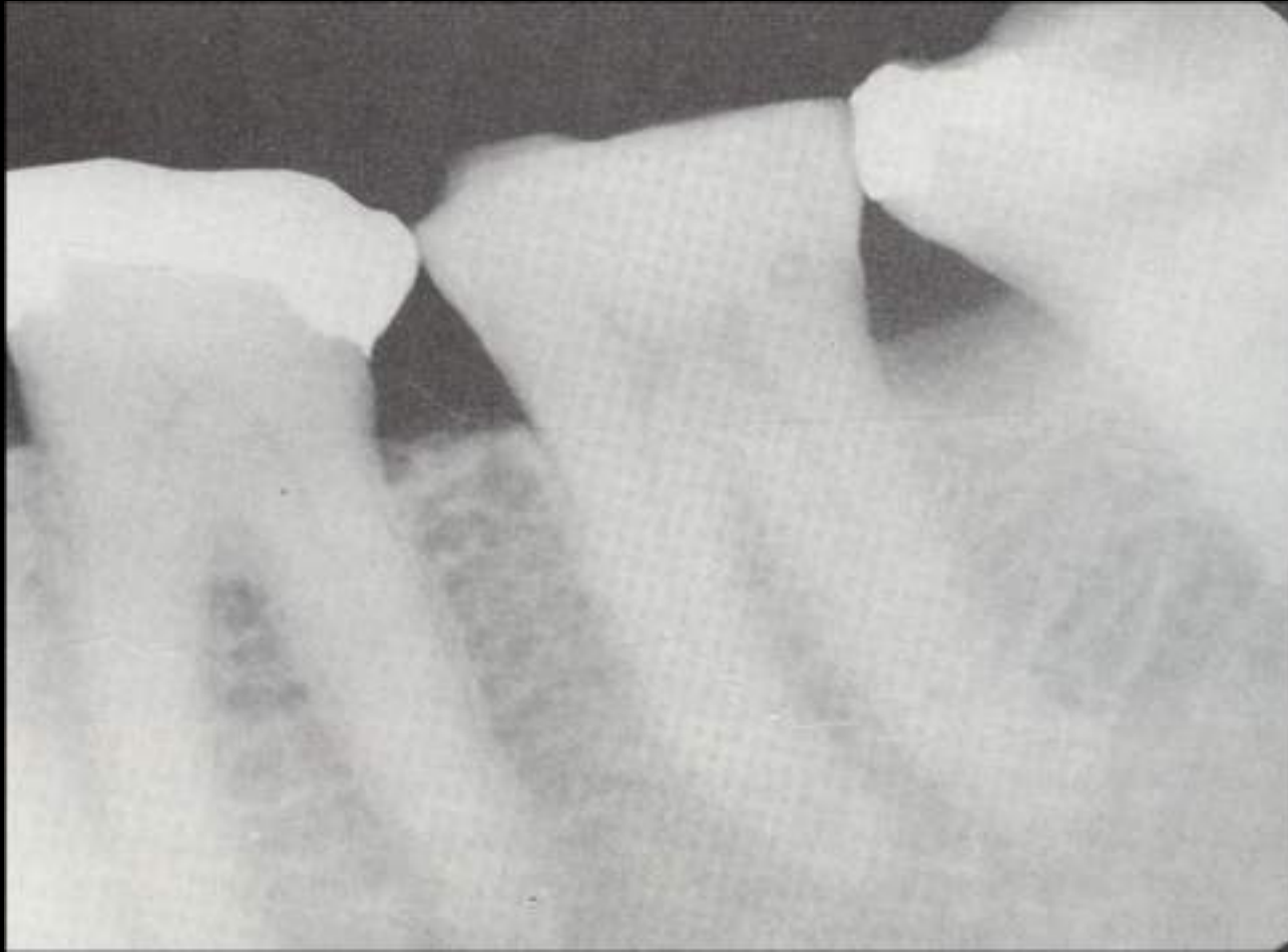
Root resorption



Previous Endodontic treatment



Condition of surrounding bone



“7 Minimum Essentials”



Sir Thomas Stamford Raffles
(1781 – 1826)
Founder of Singapore

- Radiograph
- Anesthetic
- Forceps & elevators
- Flap tray
- Light
- Efficient assistance
- Suction apparatus

Extraction Technique

- Adequate access to the tooth

“You have to see well what you do in order to do well what you see”

G.C Ingham

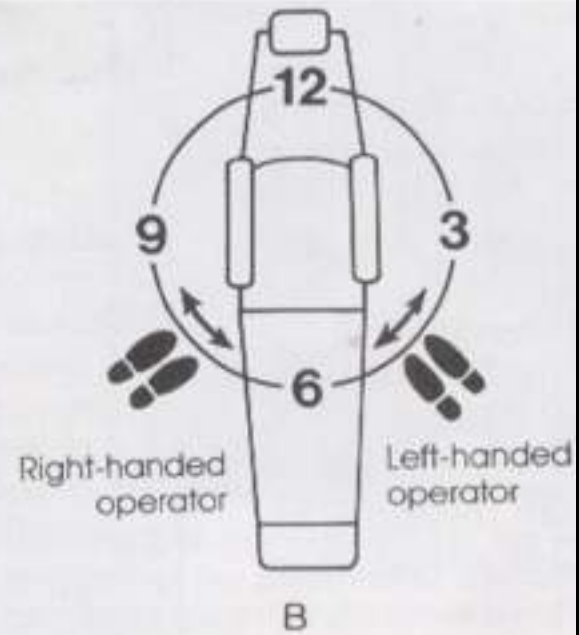
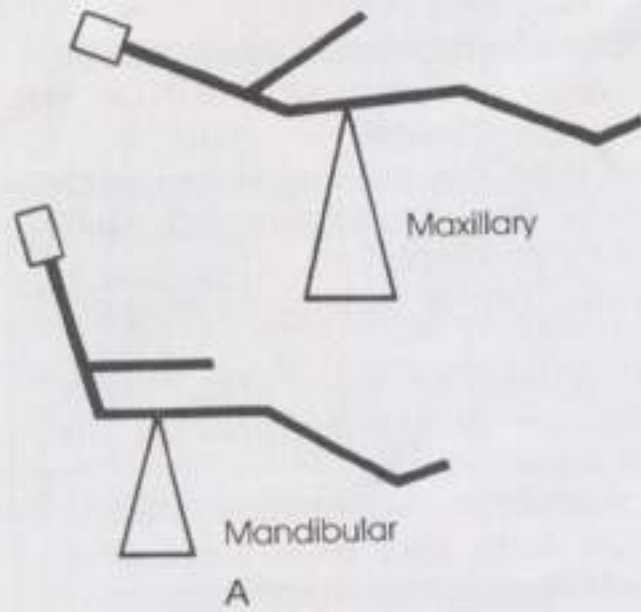
British Technique



- Forceps always held with palm of hand **above** the handles of the forceps
- Patient is inclined 15-20° for extraction in the lower left quadrant & 30 – 45° in the other 3 quadrants
- Dentist stands **behind** the patient for extraction in the lower right Q & in **front** of the patient for all other extractions

Position of Operator

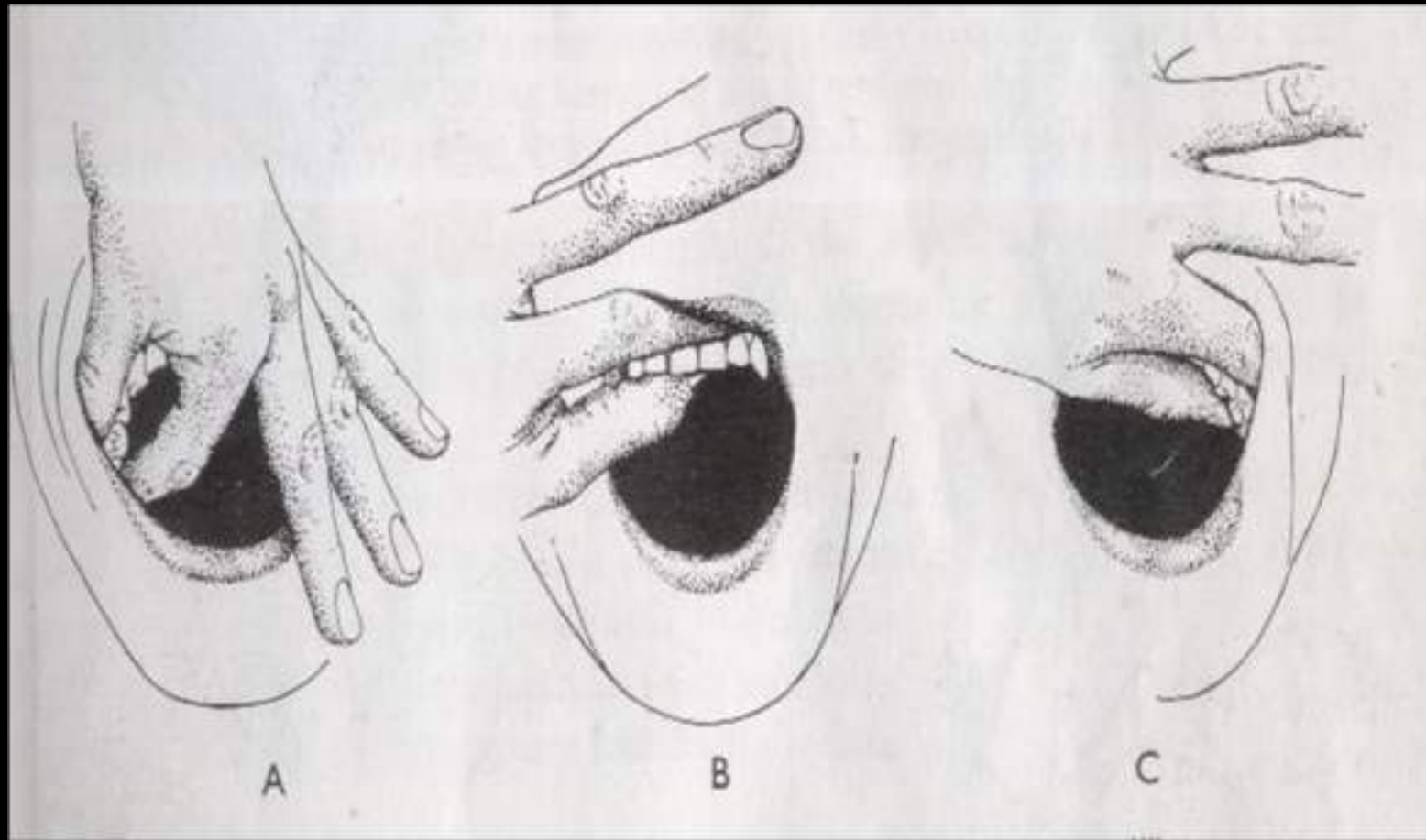




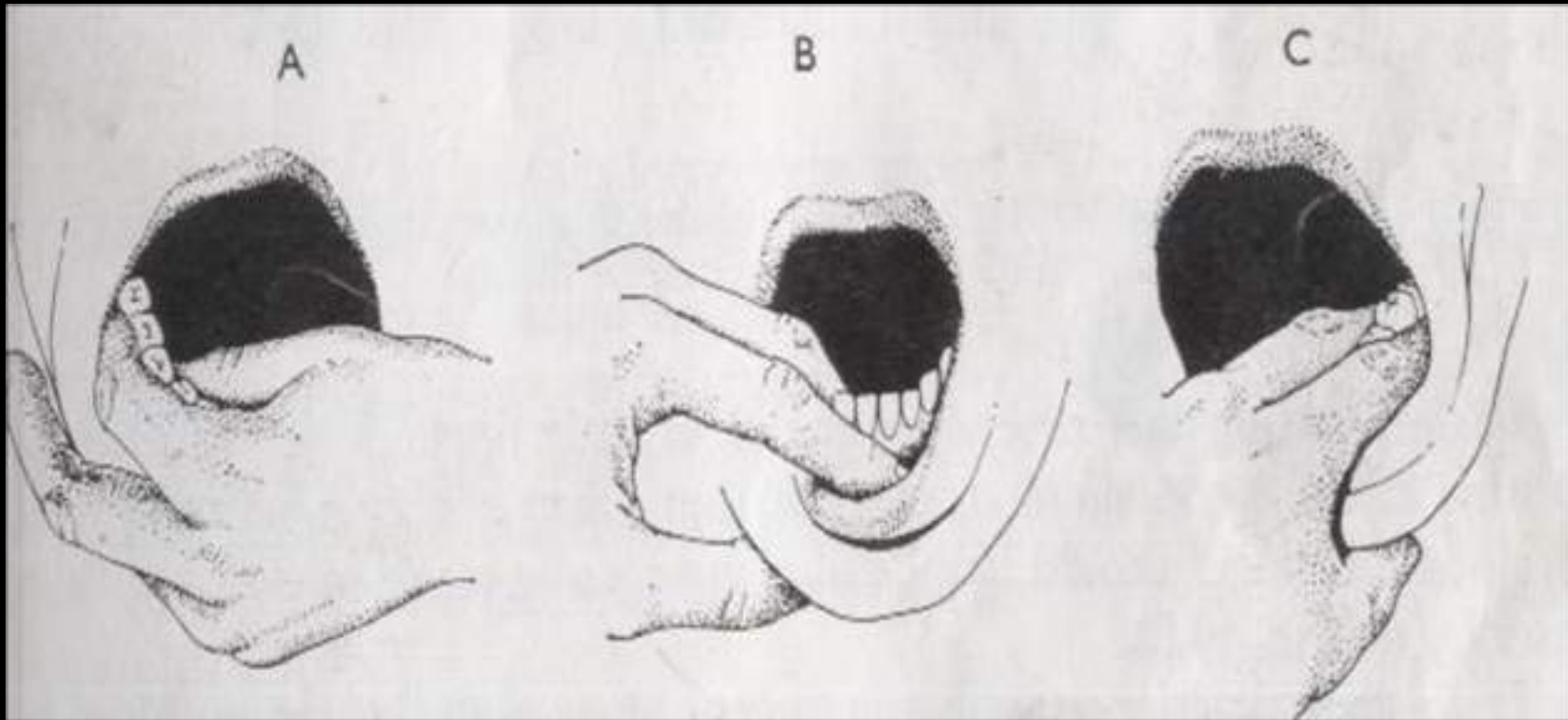
Position of supporting hand



SUPPORTING HAND POSITION MAXILLA



SUPPORTING HAND POSITION MANDIBLE



North American Technique

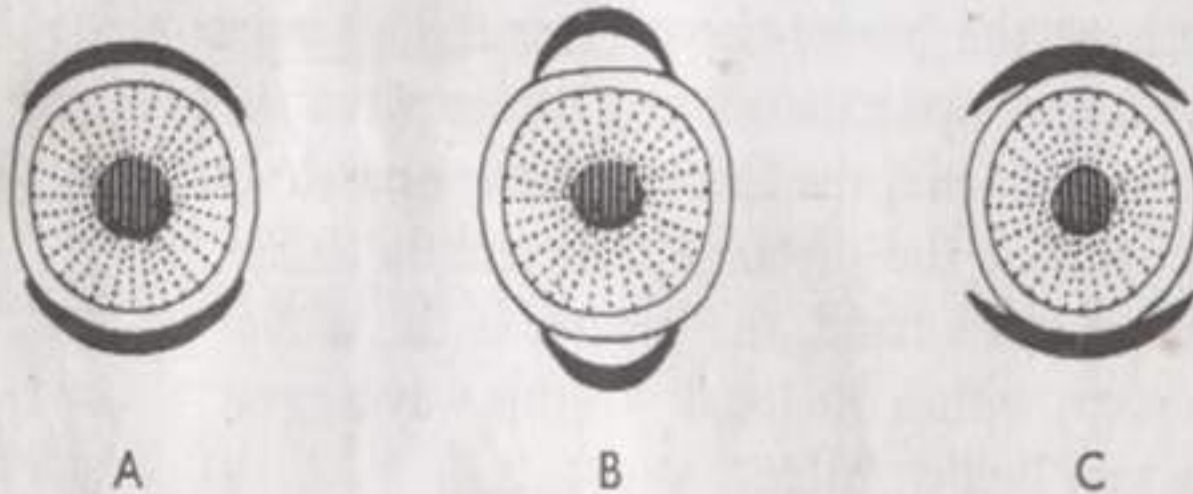
- Forceps are usually held with the palm of the hand *below* the handles of the forceps
- The patient is usually inclined 30-45 degrees for *all* extractions
- The dentist normally stands *behind* the patient in all extractions



Basic steps in Forceps extraction

- Grasping the tooth – engaging the beaks 1-2 mm beyond the CEJ
- Expansion of the bony socket
- Mobilization of the tooth
- Delivery of the tooth

APPLICATION OF FORCEP BLADES



—Cross-sections of root with forceps blades applied to it. A, Ideal fit.
B, 'Two-point contact'. C, 'One-point contact'.

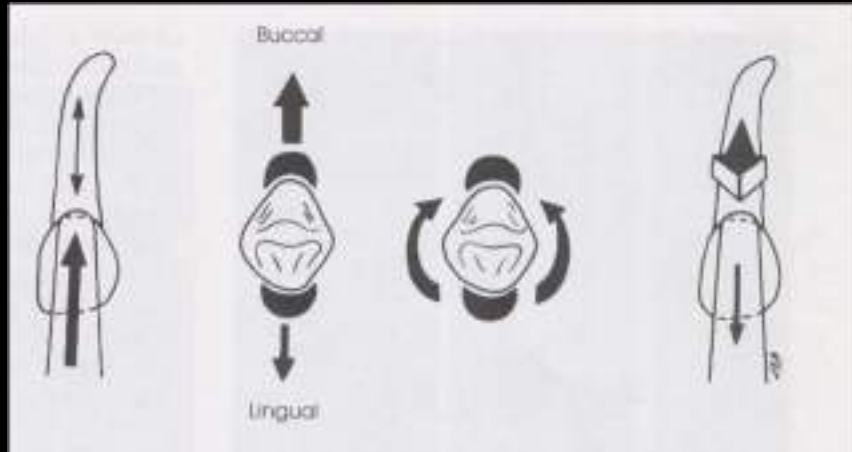
Basic forces used to mobilize the tooth

- Apical pressure
- Buccal force
- Lingual force
- Rotational force
- Traction force

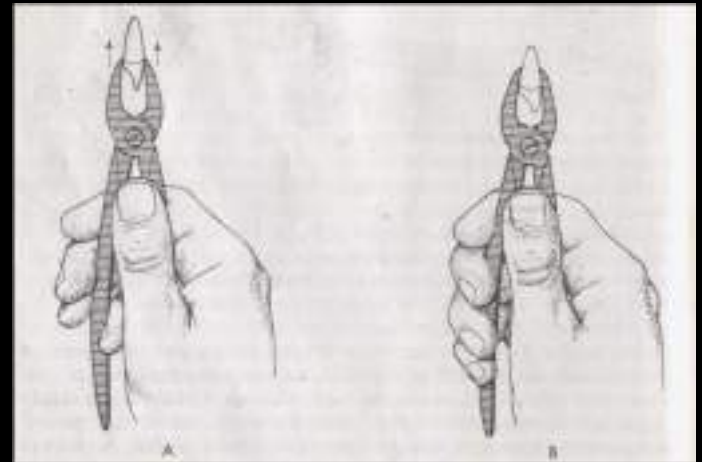
Application of force related to tooth morphology

- **Maxillary anteriors**

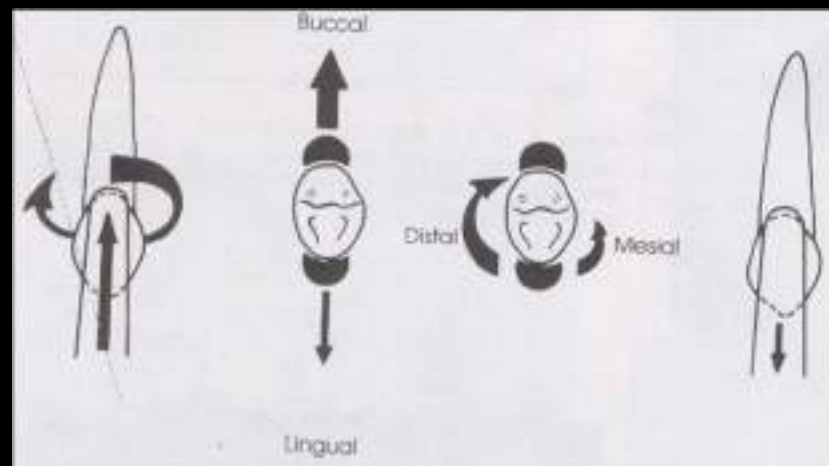
- Have conical roots
- Lateral incisors being slightly longer & slender
- Canine usually the longest
- Alveolar bone thin on the labial side
- Initial movement in labial direction, a less vigorous palatal force is then used, followed by rotational force



INCISOR



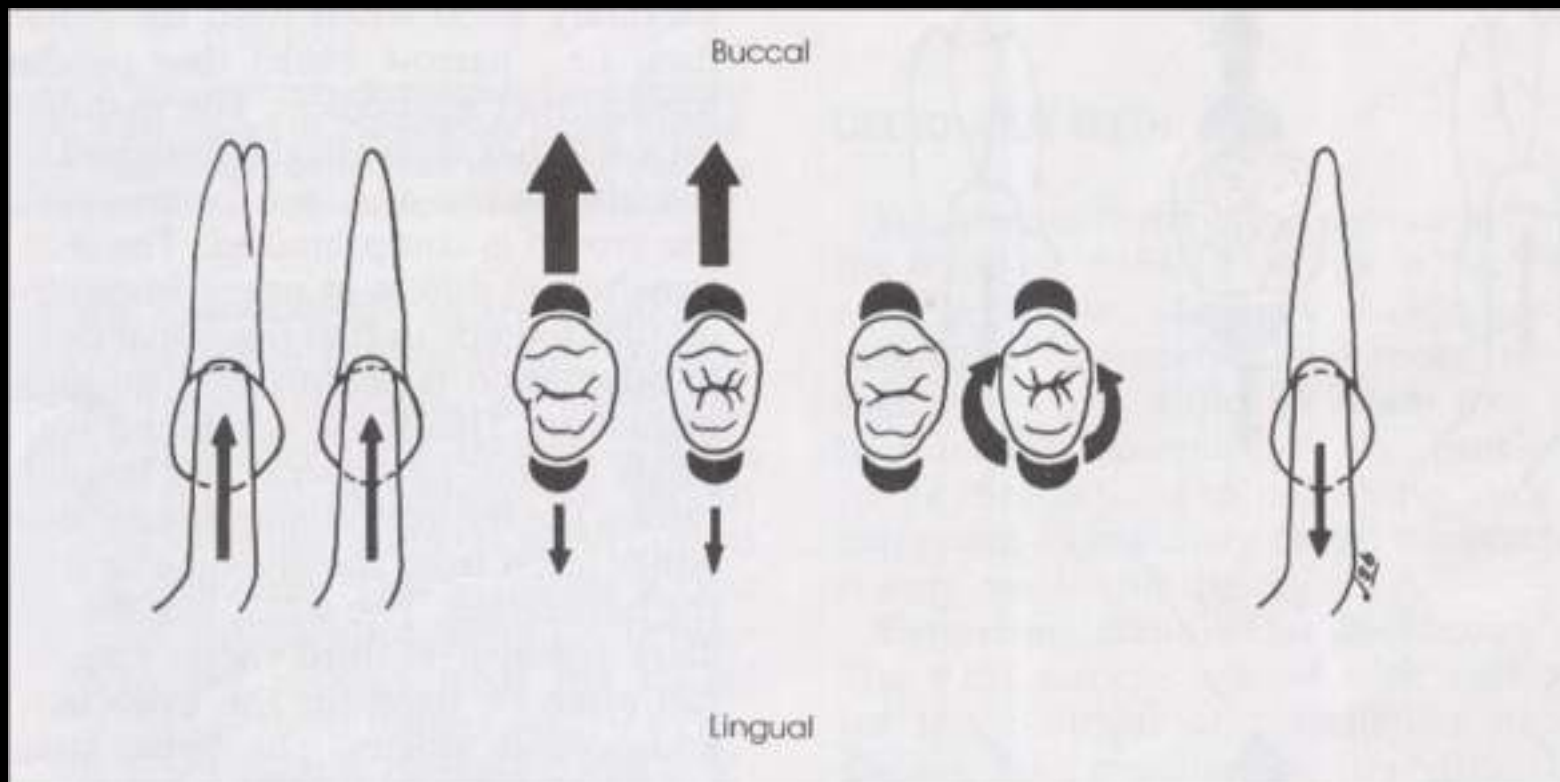
FORCEP APPLICATION



CANINE

Application of force related to tooth morphology

- Maxillary first premolar
 - Bifurcated usually in the apical $\frac{1}{3}$ to $\frac{1}{2}$
 - Roots extremely thin & subject to fracture
 - Buccal pressures should be greater than palatal pressures
 - Rotational force should be avoided



Maxillary premolar

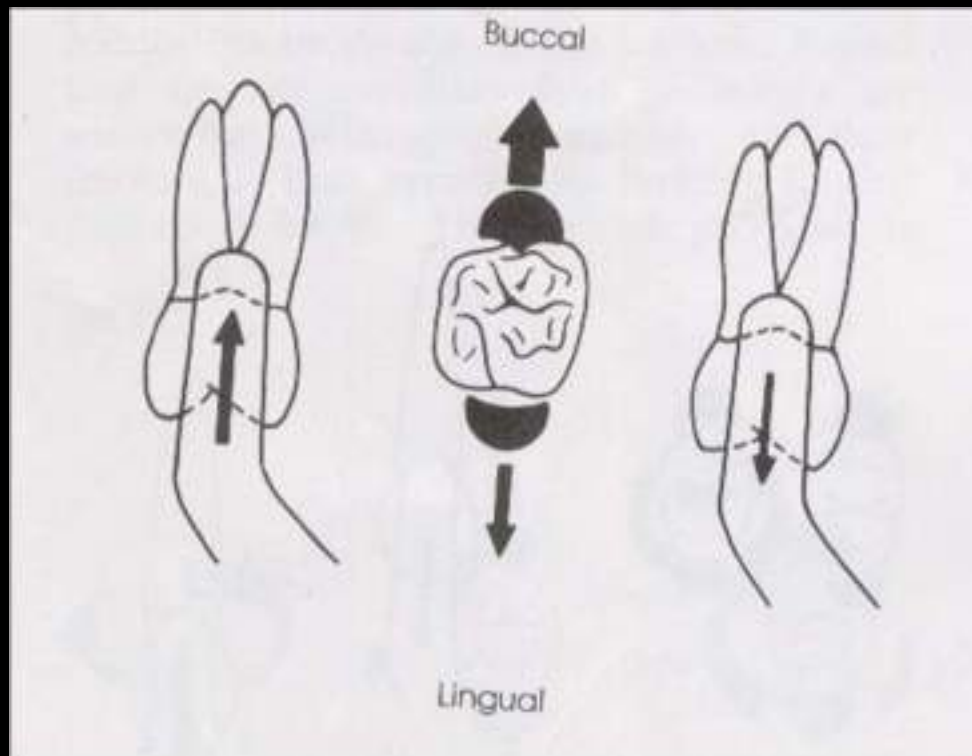
Application of force related to tooth morphology

- **Maxillary 1st & 2nd molars**

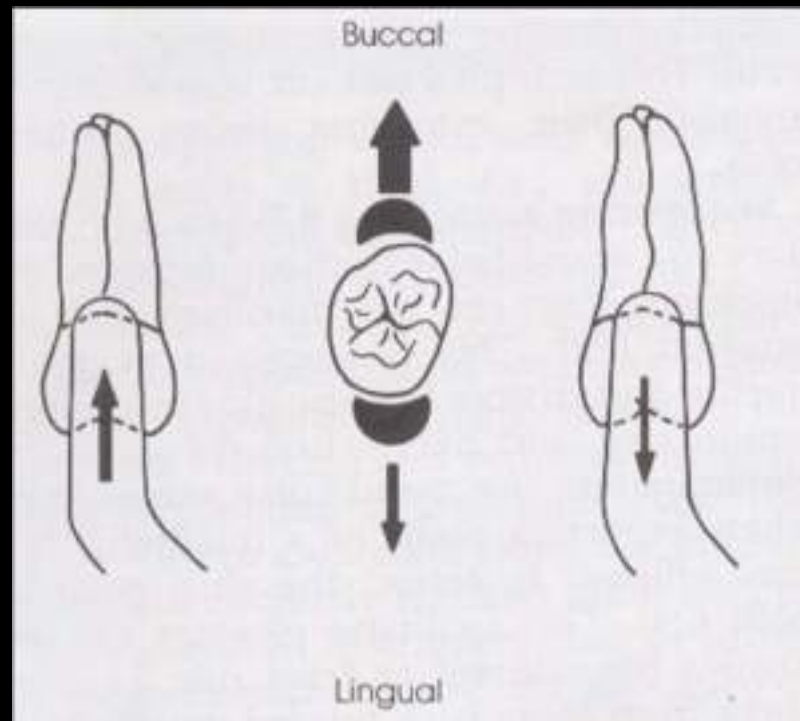
- Have 3 large roots

buccal roots are relatively close together
strong buccal force is used with minimal
palatal forces

Maxillary 1st & 2nd molars

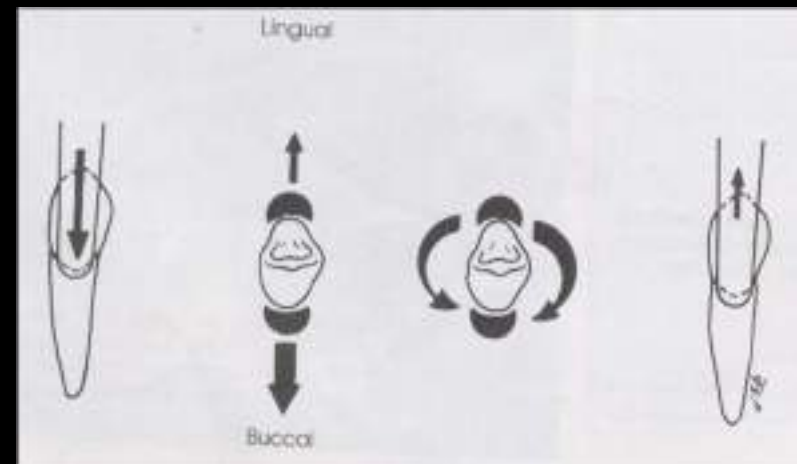
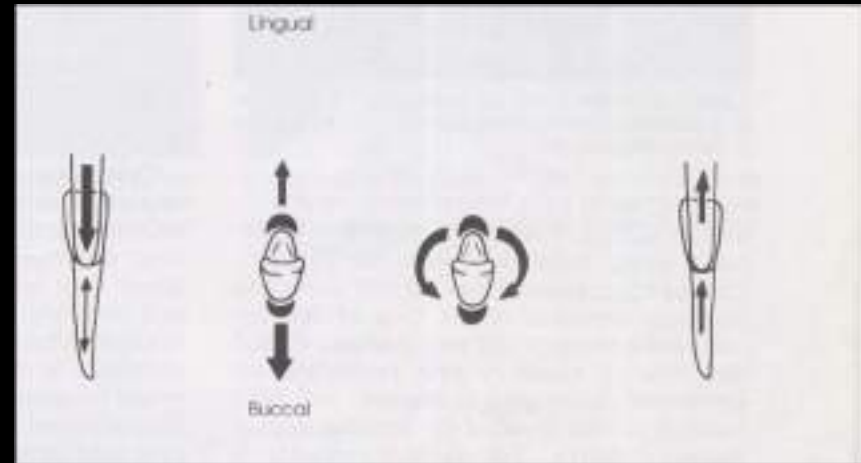


Maxillary 3rd molars

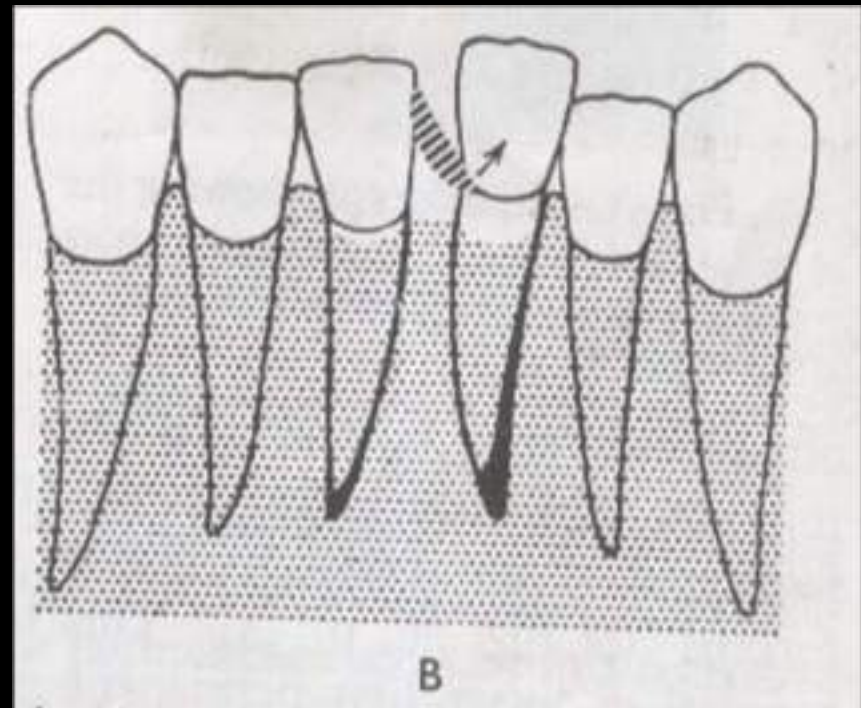
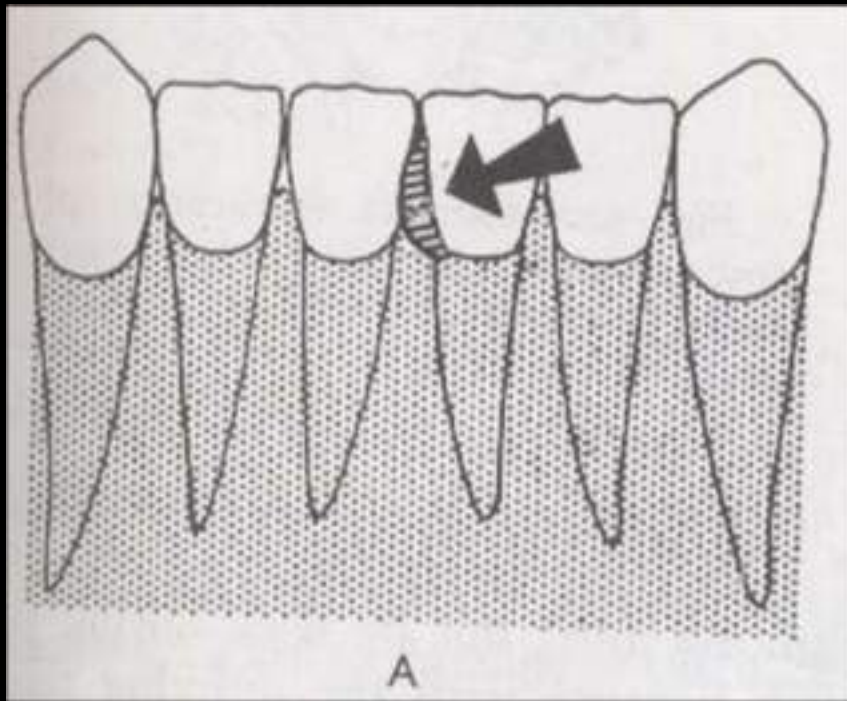


Application of force related to tooth morphology

- **Mandibular anteriors**
 - have fine roots with flattened sides



Stobie's technique



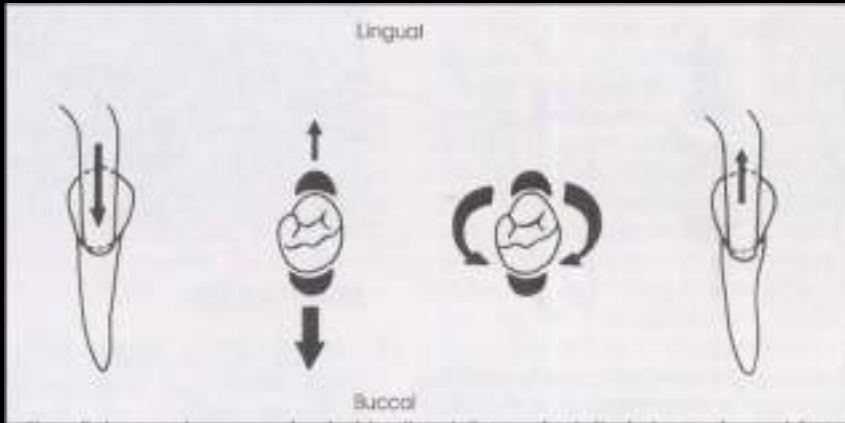
Application of force related to tooth morphology

- **Mandibular Premolars**

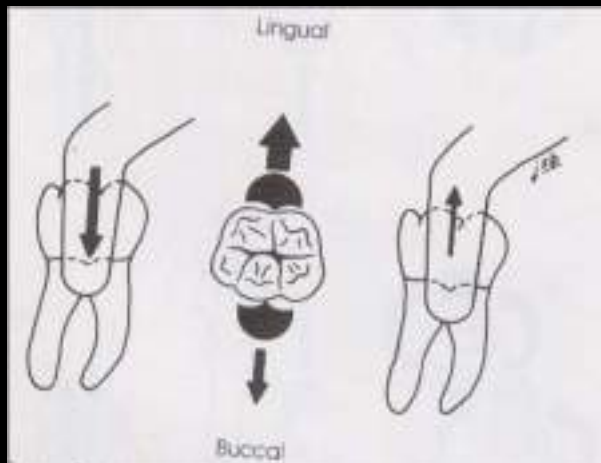
- Have tapered roots and their apices may be distally inclined
- Extracted with lateral movements
- Only in the case of the 2nd premolar can initial movements be rotatory

- **Mandibular molars**

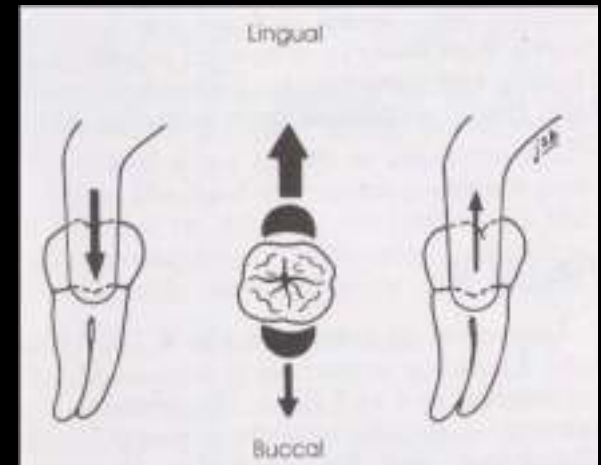
- Have 2 roots flattened mesiodistally
- Figure of 8 with strong buccal and lingual motion is used to expand the socket & the tooth is delivered in the buccoocclusal direction



PREMOLAR



MANDIBULAR 1 & 2 MOLAR



MANDIBULAR 3 MOLAR



Extraction forceps. Left to right: Upper straights, side view upper straights, upper premolars, upper molars, side view upper molars, lower straights, lower premolars, lower molars.



Elevators. Left to right: Couplands 1, 2, and 3, Cryers left and right, Warwick James left, straight and right.

Policy for leaving root fragments

- 3 conditions must exist for a tooth to be left in the alveolar process
 - Root fragment must be small
 - Root deeply embedded in bone
 - Root must not be infected

Risks is considered greater when

- Removal of root will cause excessive destruction of surrounding tissue
- Removal of root endangers vital structures
- Attempts of recovering the root can displace it into the maxillary sinus or tissue spaces

Surgical plan for full mouth extraction

- The ideal tooth extraction is the painless removal of the whole tooth, or tooth-root, with minimal trauma to the investing tissues, so that the wound heals uneventfully & no postoperative prosthetic complication is created
- Maintain the anterior teeth
- Maintain the vertical dimension
- Best to perform surgery in opposing quadrants

Multiple extractions – Order of Extraction

- Maxillary teeth should be removed first
 - Infiltration anesthesia has more rapid onset
 - Debris may fall into empty sockets of lower teeth
 - Teeth removed with a major component of buccal force
 - **Disadvantage** – hemorrhage may interfere with visualization

Multiple extractions – Order of Extraction

- Extract the most posterior teeth first
- 2 teeth most difficult to remove are the first molar and canine

Transalveolar Extraction

- General guideline
- **Indications :**
 1. Attempts at forceps extraction have failed



Forceps extraction of these teeth resulted in removal of bone & tooth instead of just tooth

Transalveolar extraction - indications

2. Retained roots, especially those in close proximity to the maxillary sinus
3. History of difficult or attempted extractions
4. Heavily restored tooth
5. Hypercementosed & ankylosed teeth

Transalveolar extraction - indications

6. Geminated & dilacerated teeth
7. Teeth shown radiographically to have
 - Complicated root patterns or
 - Roots with conflicting lines of withdrawal
8. When inserting immediate dentures

Transalveolar extraction - indications



- Heavy buccal plate suggests difficult forceps extraction



- Teeth exhibiting bruxism may have denser bone & stronger PDL attachment

Transalveolar Extraction

- 6 Fundamental steps
 - Raising a flap
 - Removal of bone
 - Tooth division
 - Removal of tooth
 - Wound toilet
 - Primary closure

References

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THANK YOU!!!