EXODONTIA

General Considerations

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What is Exodontia?

Exodontia means:

- **Exo** (out)
- **dontia** (tooth)

Extraction of tooth

- Painless removal of the whole tooth or tooth root with minimal trauma to the investing tissue, so that, the wound heals uneventfully and no post-operative prosthetic problem is created.

GEOFFREY L. HOWE
Since the earliest period of history, extraction of the tooth has been considered a very formidable procedure by the layman, & it is because of the horrifying experiences associated with the tooth extraction in the past that even today the removal of a tooth is dreaded by a patient almost more than any other surgical procedure.

Many patients suffer from extraction phobia & are often difficult to care for, despite modern methods of anesthesia.

Many dentists still believe that speed is essential when extracting the teeth.
History of Exodontia
The 1st dentist was an EGYPTIAN

– HESI RE (3100-2181BC)

The history of dental extraction forceps is very old and goes back to the time of Aristotle (384 to 322 BC) where Aristotle described the mechanics of oral surgery forceps. This was over 100 years before Archimedes studied and discussed the principles of the lever.
until the 16th century, dedicated dentists did not exist and dentistry was practiced by general physicians and barbers.

A number of tools were invented for performing this procedure.

Dental Pelican, which was invented in the 14th century by **Guy de Chauliac** and used until the late 18th century.
In the **20th century**, the key/pelican was replaced by the **forceps**, which are still in use today.
1. Intra-Alveolar extraction or Conventional extraction or Forcep extraction

2. Trans Alveolar extraction or surgical extraction

3. Stobie’s Technique
Indications For Removal Of Teeth

- In modern dentistry, all possible measures should be taken to preserve and maintain the teeth in oral cavity.

- Indications are just recommendation. There is no absolute rule.
1. **Severe caries**
   - most common and widely accepted reason
   - that is, severely carious, which is beyond scope of available conservative management.

2. **Pulp necrosis**
   - presence of pulp necrosis and irreversible pulpitis
   - not possible to do endodontic management (may be, patient declining endodontic treatment, tortuous or calcified root which is untreated by standard endodontic management)
   - endodontic failure
3. **Severe periodontal diseases**
   - severe periodontitis → excessive bone loss and irreversible tooth mobility beyond the periodontal management

4. **Orthodontic reasons**
   - orthodontic correction
   - extruded dentition

   to provide space for tooth alignment
Mal-opposed teeth

- mal-opposed teeth or mal-positioned teeth may be indicated for removal in severe situation
- some of these tooth could traumatized the soft tissue leading to ulceration, and which can not be repositioned by orthodontic management (example: severe buccally erupted maxillary third molar)
- loss of teeth especially in lower arch leading to supra-erupted tooth of upper arch which interfere prosthetic management
6. **Cracked tooth**

- clear but uncommon
- that is cracked or has a fractured root
- painful unmanageable by a simple conservative technique
- even complex restorative procedure cannot relieve pain of the cracked tooth
Pre-prosthetic extraction

- occasionally, some teeth interfere with the design and proper placement of prosthetic appliances

Impacted teeth

- should be considered for removal
- partially impacted tooth is unable to erupt into functional occlusion because of inadequate space or interfere from adjacent teeth
- contraindicated in patient’s age is more then 35 yr, which is fully bony impacted without any symptoms.
Supernumerary teeth
• usually impacted
• which interfere with eruption of permanent teeth (has the potential for causing resorption and displacement of permanent tooth)

Teeth associated with pathologic lesion
• may be required
• some of the tooth can be retained by complex endodontic therapy (example: small radicular cyst)
• maintaining the tooth compromises the complete surgical removal of the lesion, the tooth should be removed
Pre-radiation therapy

- to be considered for removal of bad or diseased tooth or teeth in the line of radiation therapy

Teeth involved in fractured jaw

- teeth involved in line of fracture can be maintained, except, the tooth is severely luxated or may be necessary to prevent infection
13 Esthetics

- severely stained (tetra; stained, fluorosis, severely protruded which too beyond the orthodontic management)

- also depend on the patient decision (after the explanation of detailed treatment plan)

14 Economic

- unwilling or unable financial support to maintain the tooth teeth

15 Prophylactic Extraction
Contra-Indications
For Removal Of Teeth

SYSTEMIC CONTRAINDICATION
LOCAL CONTRAINDICATION
Systemic Contraindication

- The patient’s systemic health is in an inability to withstand the surgical stresses
  a) Uncontrolled metabolic disease – such as D/M mild D/M and well controlled severe D/M can be treated
  b) Uncontrolled leukaemias and lymphoma – should not have removal of teeth until condition is controlled
- Infection because of abnormal WBC
- Bleeding disorder bleeding tendency with excessive bleeding, such as, in the case of platelet disorder
c) Uncontrolled cardiac diseases such as – IHD, valvular heart diseases, heart failure

d) Uncontrolled hypertension persistent bleeding can be occurred CVA as a result of stress

e) Pregnancy especially first and last trimester later part of first trimester and first month of last trimester are as safe as middle or 2nd trimester if possible, deferred until the child has been delivered
f) Severe bleeding diathesis
   - haemophilia, platelet disorders, coagulopathy

g) Medications
   - such as corticosteroids, immunosuppressive, cancer
     chemotherapeutic agents, long term use of low dose
     aspirin

h) Organ failure
   such as liver failure, renal failure
   some renal and liver diseases
i) Respiratory Disorders
   – Asthma, COPD, Chest Infection

j) Extraction during menstruation period
   – Painful stressful condition + mood swings and
   High levels of estrogen lead to excessive bleeding

k) Extreme old age
   – neurologic evaluation (must)
Local Contraindication

a) History of therapeutic radiation for head and neck cancer

b) Tooth or teeth located within tumour especially malignant tumour. (hasten the metastatic process and disseminate cells)

c) Severe pericoronitis (ANUG)

d) Acute dentoalveolar abscess

e) Acute infection especially with an uncontrolled cellulitis
PRE OPERATIVE ASSESSMENT

A. History Taking

1. Medical History :
   (i) H/O Hypertension
   (ii) H/O Jaundice
   (iii) H/O Kidney diseases
   (iv) H/O Rheumatoid arthritis
   (v) H/O Cardiac diseases
   (vi) H/O Asthma
   (vii) H/O Bleeding disorder

2. Dental History
   (i) H/O Extraction
   (ii) H/O Uncontrolled bleeding

B. Clinical Examination :
   (i) Accessibility (mouth opening)
   (ii) Tooth mobility
   (iii) Crown Condition of the tooth (G. Caries, large restoration, fracture, cervical caries)
   (iv) Oral hygiene status
   (v) Presence of infection at the site of injection

C. Radiographic Evaluation
Access to the tooth

- Mouth opening (any limitation-?)
  Trismus – limitation of the opening of the mouth due to the spasm of muscle of mastication (most likely causes are – infection, TMJ dysfunction, muscle fibrosis)
- Location and position of tooth
  - normal or crowded dentation, ant. or post.
- Partially erupted or unerupted
• Mobility of the tooth
  - usually greater than normal mobility is frequently seen in severe periodontal disease
  - less than normal mobility – presence of hypercementosis or ankylosis of root (retain root, endodontically treated tooth)

Condition of crown
• - large caries or heavy restoration - crushing the crown
  forceps be applied as far apically as possible - so as to grasp the root portion of the tooth, in stead of the crown.
• - condition of adjacent tooth - any heavy restoration?
Radiographic evaluation of tooth for removal

- The most accurate and detailed information concerning the tooth, it’s root and surrounding tissue.

- Radiographs that are taken but not available during surgery are not valuable.

(1) Relationship of associated vital structure

- Aware of the proximity of the maxillary molar's root to the floor of the maxillary sinus
- Inferior alveolar canal - injury to nerve
- Mandibular premolar – mental foramen especially surgical flap

(2) Configuration of root
- Number of root
- Curvature of root and degree of divergence
- Size and shape of root
- Eg. Short and conical shape root – easy flat root - quite difficult
- Condition of root - hypercementosis, internal resorption, ankylosis

(4) Condition of surrounding bone
- Periapical radiograph indicates density of surrounding bone
- Radiographically more opaque indicate more density of bone
- Periapical radiolucency?
Steps To Remember

- Surgical plan
- Anaesthesia
- Asepsis
- Proper instrument
- Surgical assistance
- Light
- Atraumatic surgery
- Haemostasis
- Wound care
- Postoperative regimen
SURGEON PREPARATION

1. Wear of Hand gloves
2. Mask
3. Head cap
4. Eye Wear with sidesheild
5. Surgical Gown
6. Sterilization of above mentioned items
PATIENTS PREPARATION

1. Prophylactic Antibiotics

2. Prophylactic Mouth cleansing
   (i) Scaling
   (ii) Polishing
   (iii) Brushing
   (iv) Rinsing with antiseptic mouth wash
   (v) Placement of a towel on the patients chest
   (vi) Eye wear
POSTIONING OF THE PATIENTS

- For a **MAXILLARY TOOTH EXTRACTION** the chair should be tipped backward and maxillary occlusal plane is at 60 degrees to the floor.
- The height of the dental chair should be 8cm below the shoulder level of the operator.
- For **EXTRACTION OF MANDIBULAR TEETH**, the patient should be positioned such that the mandibular occlusal plane is parallel to the floor.
- The chair should be 16cm below the level of operators elbow.
SURGEON’S POSITION

• For all maxillary teeth, anterior mandibular teeth & teeth of the 3rd quadrant: Right front position

• For teeth of the 4th quadrant: Right back position
THANK YOU!