DENTISCOPE

THE SECRETS OF

Impacted teeth

Chapter 8 / page 140-155 : Miloro, M., & Peterson, L. J. (2004). Peterson's principles of oral and maxillofacial surgery. Shelton, CT: People's Medical Pub. House-USA.

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Development of the Mandibular Third Molar

Q1: What is the most commonly impacted tooth in the oral cavity?

Lower mandibular third molar

Q2: Mention the chronological developmental sequence of lower third molar ?

- 9 years first visibility
- 11 years crown mineralization.
- 14 years complete crown mineralization , position at the anterior border of the mandible.
- 16 years 50% of root formation occur. change position as mandible develops, and takes more horizontal position at the root of the second molar.
- 18 years complete roots formation with open apex .
- 24 years 95% of mandibular third molars will erupt .

Q3: Regarding angulation positions, mention normal course of mandibular third molar?

Horizontal - Mesioangular – vertical and it happens during root formation.

Indications for Removal of an Impacted Tooth

1. Periodontitis
2. Pericoronitis
3. Dental Caries
4. Orthodontic considerations
5. Prevention of Odontogenic Cysts and Tumors
6. Root Resorption of Adjacent Teeth, up to 7%
7. Teeth under Dental Prostheses
8. Prevention of Jaw Fracture

Q4: What are the most common bacteria involved in pericoronitis?

Peptostreptococcus, Fusobacterium, and Bacteroides (Porphyromonas)

Q5: What is the proposed types of management of pericoronitis?

Initial management : mechanical debridement, irrigation with hydrogen peroxide or chlorohexidine.
Surgical management: extraction of opposing third molar, or extraction of offending tooth.

Q6: Is ABX warranted for primary management of pericoronitis?

In case of systematic symptoms.

Q7: What is the best intervention to prevent recurrent pericoronitis?

Removal of the involved mandibular third molar

Q8: What is Operculectomy and is it efficient in management of pericoronitis?

Soft tissue redundancy that occur due to relation between anterior border of the mandible and partial or complete erupted lower third molar. it was found to be a promising and efficacious treatment modality for the management of pericoronitis when compared with the removal of mandibular third molar

Q9: What is the most common cause for removal of third molar after age of 20, and incidence for this cause?

Pericoronitis, indication incidence of 25-30% of lower third molar.

Q10: Where does caries develop and become an indication of extraction of third molar? and how common for caries to be an indication for extraction?

At the cervical line of distal aspect of 2nd molar, indication incidence is 15% of all impacted third molars.

Q11: Does the lower third molars cause anterior teeth crowding?

Controversial, but no data support that third molars cause anterior teeth crowding and its mainly related to deficient arch length.

Q12: What is the orthodontic indication for extraction of third molars?

For destalization of posterior segment.

Q13: In orthognathic surgery, which molars are indicated for presurgical extraction, and when should it be done?

- both upper and lower third molars
- especially in mandibular advancement surgery, substantially reduces the thickness and quality of lingual bone at the proximal aspect of the distal segment, where fixation screws are usually applied.
- both should be extracted 6-12 months prior to surgery.

Contradictions for Removal of Impacted Teeth

Q14: What are the contraindications for removal of impacted tooth?

mainly, advanced age, poor health, damage to adjacent structures.

Q15: What is the best age group for impaction removal and why?

- healthy young pt. as they show faster and complete healing ability

Q16: Is it indicated to extract third molar in 8 -9 years group, explain?

- not prudent approach, as it may erupt in normal position. controversial

Q17: Why is it contraindicated to remove impacted third molar in the older age group?

- slow healing, large postsurgical bony defect, dense bone, less tolerance to surgical insult.

Q18: When is it indicated to remove impacted third molar in the older age group?

- if signs of pathology develops.

Q19: What is the general rule in deciding the removal of impacted third molar related to a vital structure?

- Weighed risk
- Benefit

Determining Surgical Difficulty

Q20: What are the common classifications to determine surgical difficulty?

- Angulation of impacted tooth, distance between anterior border of ramus and 2nd molar, depth type of tissue covering impacted tooth.

Q21: Based on angulation of third molar, mention the angulations from the easiest and their prevalence?

- Mesioangular 45%
- Vertical 40%
- Horizontal 10%
- Distoangular 5%

Q22: Other than the classification for difficulty, what are the other factors to assess difficulty?

- Root configuration
- Age

Q23: In general what are the most important two factors to assess the primary difficulty for impacted third molar?

- Depth with type of tissue covering, and age

Q24: What is winters classification, pell and gregory?

- Angulation by (**Archer (1975) and later Kruger (1984))**
- Relationship to the Anterior Border of the Ramus **by Pell and Gregory 1933**
- **Winter lines:** The position & depth of the mandibular 3rd molar can be determined using these line: a 3 imaginary lines (red, amber & white) “drawn” on the dental X-ray (normally an OPG).

Technique

Q25: What is the must common flap used in removal of third molar?

- Envelope

Q26: Which artery might be encountered when making a releasing incision?
- Buccal artery , (upper or lower molar)

Q27: Which vital structure might be encountered during the posterior extension of flab for lower third molar removal?
- Lingual nerve.

Q28 : Which instrument must commonly be used for sectioning of the third molar and why?
- bur , more predictable plane of sectioning.

Q29: Which angulation is the must difficult in lower impacted third molar?
- Distoangular

Q30: Which is more easier to remove, maxillary or mandibular third molar and why?
- Maxillary, thin and elastic bone .

Q31: What are the anatomical spaces that maxillary third molar might be displaced into?
- Maxillary sinus , infratemporal fossa.

Q32: What are the anatomical spaces that mandibular third molar might be displaced into ?
- Sublingual or Submandibular space (above or below mylohyoid muscle)

Use of Perioperative Systemic Antibiotics

Q33: What is the category of tooth extraction wound based on contamination?
- Clean - contaminated.

Q34: Is prophylactic ABX coverage indicated for the removal of the impacted tooth in healthy pt. ?
- NO. as abx are not more effective than local sterile measures.

Use of Perioperative Steroids

Q35: Why are steroids used in the removal of the impacted tooth?

- Help minimize swelling, truisms and pain.

Q36: What is the steroids protocol for Maximum control of swelling after removal of the impacted tooth?

- Dexamethason: presurgical 8-12 mg iv, stat. **/ post op** 4-8 mg, iv, 2-3 days
-**Methylprednisolone: presurgical** 125 mg, iv, stat. / **post op** 40 mg, po, TID or QID, 2-3 days

Q37: What are the most commonly used steroids for the removal of the impacted tooth?

- Dexamethazone and methylprednisolone.

Q38: Describe the recommended dose of dexamethasone and methylprednisolone to control post-operative trismus, swelling, and pain?

- Dexamethason: presurgical 8-12 mg iv, stat. **/ post op** 4-8 mg, iv, 2-3 days
-**Methylprednisolone: presurgical** 125 mg, iv, stat. / **post op** 40 mg, po, TID or QID, 2-3 days

Q39: What are the contraindications of steroids use?

- Gastric ulcer, active infection and certain types psychosis.

Expected Postoperative Course

Q40: What are the expected post removal complications of the impacted tooth?

- Pain, swelling, stiffness and mild bleeding.
more **severe** complications as inferior alveolar nerve anaesthesia and fracture of the mandible.

Q41: What are the most related factors that directly increase the post op complications?

- Related to depth of impaction and age.

Q42: What is the most effective way to achieve homeostasis?

- Pressure with wet gauze.

Q43: What are the methods to achieve homeostasis in pt. with non- stopping the bleeding?

- Over suturing, local thrombin, oxidized cellulose and micro fibrillar collagen.

Q44: Do ice packs reduce swelling?

- No, but it gives a comfort feeling to the pt.

Q45: When does the swelling and stiffness reach its peak and when does it resolve?

- Peaks at 2nd day, and resolves 5-7 days post op.

Q46: When does post op pain reach its maximum intensity?

- During the first 12 hours post op.

Q47: What is the best medication to control post op pain?

- Acetamenophen with codine and NSAID.

Complications of Impaction Surgery

Infection

Q48: What is the incidence of postoperative infection after removal of impacted molar? how and when does they occur? what is the management?

- Rarely, (1.7 - 2.7%) , 50% of them appear as localized subperiosteal abscess, and occur 2-4 weeks post op. managed by simple debridement and drainage .

Q49: What are the common spaces for the fractured root to be displaced?

- Submandibular, IAN canal, and maxillary sinus.

Q50: What is the management of uninfected displaced fractured root?

- Leave it in place, and follow up.

Q51: What is the management of infected displaced fractured root?

- If efforts of removal will be destructive to bone and vital structures, leave it in place, and follow up with radiographs.

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