# Management of Impacted Third Molar Post-Operative Complications

## CDA Oasis Resource

*Adapted from: Manual of Minor Oral Surgery for the General Dentist*

# Damage to Soft Tissue

- In the form of a tear or puncture in the flap or an abrasion or laceration of the lip or mucosa during the course of the procedure due to excessive retraction of the flap.
  - Either extend the flap or make a releasing incision.
- Prevention by:
  - Placing one's fingers along the shank of an elevator,
  - Using finger rests when indicated, and
  - Having adequate jaw and facial support.

# Damage to Soft Tissue

- Retraction for a long period of time can cause splitting of the commisure of the lips.
- Heating of rotary instruments (the drill) can cause burns on the lips.
- Burns and/or abrasions must be treated palliatively with moisturizing ointments.
- Lacerations should be evaluated for the need of sutures.

# Pain and Swelling

- Swelling is often expected particularly when the procedure requires soft tissue manipulation, bone removal, and a significant amount of time.
- Persistent or increasing swelling beyond three days is reason for a re-evaluation.
- Approximately two to three days of narcotic analgesic medication followed by a brief course of over-the-counter analgesics are required.
- Possible to prescribe nonsteroidal anti-inflammatory medications like ibuprofen to decrease inflammation and provide analgesia, thereby decreasing narcotic use and potential abuse.

# Infection

- Whenever soft tissue flaps are elevated or bone is removed, the susceptibility to infection increases.

- Incorporate practices that will help minimize the risks:
  - Care not to tear a flap,
  - Thorough irrigation when removing bone with a drill, and
  - Copious irrigation prior to closure of the soft tissue.

- Signs for investigation:
  - Persistent or worsening edema, erythema, increasing tenderness, and onset of trismus.
  - Serious infection: fever, chills, and worsening trismus with dysphagia/ odynophagia.

- Unless there is a contraindication, empirical treatment of oral infections with an oral antibiotic (Pen VK or amoxicillin—clindamycin with allergies) should be initiated and continued for one full week.

- Patients should observed closely or referred to a specialist, if infections worsens.

# Alveolar Osteitis (Dry Socket)

- May be due to multiple factors including smoking, difficulty of extraction, bacterial contamination, birth control pills, and aberrant host healing.
- Examination of the socket shows an open socket with no clot present, with the area being extremely tender.
- To relieve pain: careful irrigation of the socket with saline an obtundant dressing inside the socket, and short-term use of a narcotic analgesic.
- See patient again 24 to 48 hours later for repacking. Many patients require two to three packings before experiencing complete relief.

# Bleeding

- Oozing beyond 72 hours may not be a benign finding, rather, it may be a sign of an underlying coagulopathy.
- Measures to control bleeding intra-operatively: use of direct pressure, sutures, local hemostatic agents like Gelfoam, Surgicel (regenerated oxidized cellulose), topical thrombin, and collagen.
- Replacement of sutures may be warranted if bleeding continues.
- Patients with systemic medical issues that predispose bleeding or are taking medication that prevents adequate hemostasis may require surgical intervention.

# Damage to Teeth and/or Adjacent Structures

- Third molar surgery is associated with the risk of damaging adjacent structures due to the nature of the luxating forces applied during instrumentation.

- It is important to carefully apply the necessary force and to examine the adjacent and opposing teeth for extensive caries, extensive restorations, and root canal therapy.

# Nerve Dysfunction

- Inferior alveolar or lingual nerve dysfunction is one of the most devastating complications.

- It is recommended to schedule a follow-up appointment one week postoperatively to evaluate nerve function:
  - In case of a sensory deficit, it should be noted and the patient should be referred to a specialist.

# Displacement of Teeth or Roots

- The tooth or fragment that is being extracted is no longer visible.
  - In the mandible, third molar roots can displace into the submandibular space or into the inferior alveolar canal.
  - Maxillary teeth or their roots can be displaced into the maxillary sinus, the infratemporal space, or the buccal space.
  - Mandibular teeth or their roots can be displaced through the lingual cortical plate into the submandibular space if there is a thin cortex and significant force.
- Management:
  - Review the previous condition of the tooth: if not infected and fragment is relatively small, consider leaving the root in place.
  - Larger fragments or those with preexisting apical pathosis require removal.
  - Obtain radiographs to ascertain position.
  - Irrigation and suction might flush the fragment out.
  - Oro-antral communication within the extraction socket should **never** be enlarged.

# Displacement of Teeth or Roots

- If patient is referred, patient should be placed on sinus precautions:
  - Avoid smoking and use straws for drinking.
  - Sneeze or blow nose with the mouth open.
  - Prescribe an antibiotic (amoxicillin, clindamycin, or a comparable cephalosporin) for approximately 10 days.
  - Prescribe decongestants along with nasal saline sprays to help maintain a patent sinus ostium.
- Displacement into the infratemporal space requires surgical retrieval and should be performed by a specialist in a hospital setting with specialized radiography and equipment.
- If a tooth or fragment is lost down the posterior oropharynx: patient should be placed mouth down and encouraged to cough.
- If violent coughing or difficulty breathing is encountered, it is likely the fragment was aspirated: EMS must be activated, and basic life support principles should be followed.

# Oro-antral Communication

- The integrity of the membrane lining of the maxillary sinus has been disrupted.
- Patients report congestion, diffuse face pain on the affected side, and the sensation of liquid entering the nose while drinking.
- Obstruct the patient's nose and ask the patient to gently express air through the nose with mouth open.
- Look for air bubbles and/or condensation of the reflective surface of the mirror and try to hear any passage of air.
- In case a perforation is suspected: place patient on sinus precautions and an antibiotic with sinus flora coverage.
- Small perforations (<5 mm) generally heal by themselves and large perforations require surgical repair and are best referred to a specialist.

# Jaw Fracture

## Risk Factors

- Difficult (deeply impacted teeth) extractions,
- Older-age patients,
- Atrophic jaws,
- Systemic disease affecting bones (e.g., osteoporosis),
- Associated jaw pathology causing weakening of bone (e.g., bone defect due to a cyst), and
- Use of inappropriate surgical technique (excessive extraction force or extensive bone removal).

- It is more common to see a jaw fracture post-operatively at 2-4 weeks rather immediately after the surgery due to the fact that the defect remodels for a few weeks before final bone deposition starts to takes place.

# Jaw Fracture

- Patients at high risk for post-operative jaw fracture (e.g., requiring extensive bone removal): follow closely and instruct to stay on a full-liquid diet or, preferably, put in maxillomandibular fixation (wiring of jaws) to decrease the chance of a jaw fracture.

- In case of a jaw fracture:
  - Take a baseline post-operative radiograph (panorex).
  - Inform the patient and instruct to stay on a liquid diet with minimal jaw function.
  - Refer immediately to an oral and maxillofacial surgeon for definitive treatment.
  - Prescribe antibiotics (penicillin or clindamycin) and chlorhexidine oral rinses.

- Maxillary fractures are generally limited to alveolar process fractures and can usually be managed with splinting of segments with composite-wire splints, with or without maxillo-mandibular fixation.

# Questions/Feedback?

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