Medical Concerns

Cardiovascular

- Antibiotic prophylaxis for Infective Endocarditis (AHA 2007)

* Amoxicillin 2gm po 1 hour before treatment

* Clindamycin 600mg po 1 hour before treatment

- Certain specific congenital conditions (cyanosis, mesh)
- Prosthetic Heart Valve
- Previous History of Infective Endocarditis
- Cardiac Transplant

Anticoagulation

* Coumadin – interferes with hepatic synthesis of Vitamin K- dependent clotting factors (II, VII, IX, X)

* Plavix – prevents binding of fibrinogen by blocking receptors...effects minimum 7-10 days

* Aspirin – inhibition of platelet-dependent thromboxane formation...7 - 10 day effect

* Pradaxa – direct thrombin inhibitor

* Xarelto, Eliquis - Factor Xa inhibitors

Coumadin (Warfarin) Concerns

* Cardiovascular Disease Advisory Group (Dec. 2005)

*Peri-procedural Anticoagulation Management

“Published literature suggests that the risk of thromboembolic events outweighs the risk for bleeding for most dental procedures, and most patients should continue with full therapeutic anti-coagulation (INR 2-3.5). Local hemostatic measures are advocated.”
Local hemostatic measures

- Application of pressure...Use of gelatin sponges...Additional sutures
- Use of antifibrinolytic agents (aminocaproic acid oral rinse/IV or tranexamic acid IV)

Musculoskeletal

- American Academy of Orthopaedic Surgeons 2009 Information Statement regarding Antibiotic Prophylaxis for Bacteremia in Patients with Joint Replacements
  
  **“Orthopaedic hardware not within a synovial joint are not at increased risk”**

- ADA & AAOS Consensus (published in JADA 2003)

- Mayo Clinic Study (2010)

- ADA January 2015

Bisphosphonates

- Preventive dental treatment

- Avoidance of dentoalveolar trauma

- Cessation of bisphosphonate (“drug holiday”)

*Informed Consent

* Prolonged use in humans (more than 3 years) may cause development of poorly functional, highly multinucleated osteoclasts with nuclear condensation and poor adhesion to the bone surface.

Dentoalveolar Surgery

- Basic Armamentarium

  * Local anesthesia

  * Suction

  * Mirror

  * Retractor

    - Minnesota
*Periosteal elevator
  - **Hourigan PH2** (Hu-Friedy)

*Elevator
  - **Luxator EL3S** (Hu-Friedy)

*Forceps
  - **Apical Retention Forceps** (A. Titan or Karl Schumacher)

- **Flap Armamentarium**
  - Needle Holder
    - **Crile-Wood**
    - Scissors
    - **Curved Kelly**
    - Scalpel handle
      - #15 blade
    - Irrigation syringe
    - Surgical handpiece (**Sabra OMS II**)
    - Surgical bur (**SS White 1703 for straight handpiece or 1702 FG for Sabra**)

- **Miscellaneous Armamentarium**
  *Silicone bite blocks
  *Elevators ("Root", aka root tip picks, “East-West” aka Cryers or Seldins)...
  *Rongeurs (**Blumenthal**)
  *Curette
  *Bone file
  *Upper root forceps (A. Titan)
  *Lower root forceps (A. Titan)
  *Molar Forceps...Upper Right - Upper Left - Lower (A. Titan or Karl Schumacher)
Principles of Exodontia

- Parallel/Axial Motion (new concept) versus Lateral Motion (traditional concept)

1. Separation of Sulcus Connective Tissues.
2. Luxation of Periodontal Attachment Apparatus.
3. Application of Rotational (Torque) Forces with Apical Retention Forceps to the Periodontal Attachment Apparatus.
   - Slow clockwise-counterclockwise...feel the resistance & hold.
   - Steady pressure disrupts fibers...bone doesn’t expand – it fractures.
   - Special universal and anatomic universal forceps have excellent "frictional values" and are designed for positioning on solid tooth and root structure.

Access

*Principles of Flap Design

- Large enough to see
- Full thickness
- Margins on bone
- No tension with retraction
- Release one tooth away

"Forces of Exodontia" ..."It's all feel"

- Apical
- Facial (Buccal/Labial)
- Lingual/Palatal
- Rotational
- Traction ("PULL")
**Routine Extraction**

1. Separation of Sulcus Connective Tissues with PH2.

2. Luxation of Periodontal Attachment Apparatus with EL3S...**parallel NOT perpendicular!**

3. Application of Rotational (Torque) Forces with Apical Retention Forceps.
   - Slow clockwise-counterclockwise...feel the resistance and hold.
   - Special universal and anatomic forceps have excellent "frictional values" and are designed for positioning on solid tooth and root structure.

4. Application of Forces with appropriate forceps.
   *Facial-Lingual/Palatal...Apical...Rotation...Facial-Lingual/Palatal...Traction.

   * Steady pressure disrupts fibers - bone doesn’t expand, it fractures!

5. Inspect root(s).

6. Debride socket(s).

7. Place gauze pad.

8. Have patient read post-op instruction sheet during initial 5 minutes of biting pressure.

9. Apply moist gauze pad.
**Surgical Extraction**

1. Separation of Sulcus Connective Tissues with PH2.

2. Luxation of Periodontal Attachment Apparatus with EL3S...parallel NOT perpendicular!

3. Application of Rotational (Torque) Forces with Forceps.
   - Slow clockwise-counterclockwise...feel the resistance and hold.
   - Special universal and anatomic forceps have excellent frictional values and are designed for positioning on solid tooth and root structure.

4. Application of Forces with appropriate forceps.
   *Facial-Lingual/Palatal...Apical...Rotation...Facial-Lingual/Palatal...Traction

5. Section molars...Flap elevation and reflection if necessary.

6. Root luxation with PH2 and/or EL3S.

7. Root forceps.

8. Inspect root(s).

9. Debride socket(s)...3-0 Plain Gut Suture.

10. Place gauze pad.

11. Have patient read post-op instruction sheet during initial 5 minutes of biting pressure.

12. Apply moist gauze pad.

**Implant Site Considerations**

**Alveolar Bone Loss...**

*First few months following extraction
  - 1-3 mm loss of height
  - 3-5 mm of width
  - Questionable density
  - Soft tissue issues
- Socket Management...Socket Preservation Graft (CDT - D7953)
- Allografts
  - Demineralized Freeze-Dried Bone
    - From licensed tissue banks
    - Donor is screened for malignancy, Hepatitis & HIV
    - Harvested aseptically under OR conditions
    - Cut into blocks, strips or ground to a specific particle size range (200-500 mcg ideal for intraoral use)
    - Process includes steam, ethanol immersion, hydrochloric acid immersion, freeze-dried, then sterilized by ethylene oxide or gamma radiation

- Complications
  - Antral communication
    - * Intact membrane
    - * Membrane perforation
    **Allow for normal clot...if tooth was abscessed OR when not and symptoms develop...Rx Antibiotic
      - * Amoxicillin or Clindamycin if allergic
      - * NeilMed® Sinus Rinse
        - Introduced ~ 2000...over the counter...patient compliance is key!
  - Bleeding
    - * Gauze and pressure
    - * Curettage and pressure
    - * Cautery (chemical, laser, electrical)
    - * Gelfoam®, Surgicel®, ActCel®, BloodSTOP®, CollaPlug®, HemCon®, CELOX®
    - * QuikClot® **NOT RESORBABLE**
    - * Bone Wax
Anxiety & Pain Control

Oral ("Conscious") Sedation

**Triage** 0.125-0.25mg

*rapid onset
*peak ~ 1-2 hours
*t ½ ~ 1.5-5.5 hours
*No active metabolites
*anterograde amnesia...MUST OBTAIN PRE-TREATMENT CONSENT
*occasional paradoxical reaction (seen with higher dosing 0.5mg)

**Sublingual administration increases bioavailability/anxiolysis by 28% (OOO-1997 NIH)

***Dispense two...take one at bedtime night before then dissolve one under tongue 90 minutes before appointment time***  MUST HAVE DRIVER!

Flumazenil 0.1 mg/mL (5 mL vial)

*Imidazobenzodiazepine that competitively inhibits the benzodiazepine site on the receptor complex
*0.5 mg required to occupy 50% of the receptors
*onset ~ 1-3 minutes
*peak ~ 6-10 minutes
*t ½ ~ 40-80 minutes

*re-sedation in 60-90 minutes; level of re-sedation is 13-30%

**contraindication: Seizure disorder
### NSAID’s

- **Ketorolac** (Toradol) 10mg

  * indicated for the short-term... **not to exceed 5 days** management of moderately severe acute pain that requires analgesia at the opioid level
  * Onset ~ 10 minutes
  * Peak ~ 30-60 minutes
  * Duration ~ 6 hours
  * t½ life ~ 2-8 hours

**Dispense: #20**

**Sig:** 10mg po q6h for pain

**No Refill**

***useful in patients who cannot tolerate narcotics or those with a history of narcotic abuse

### Non-narcotic Analgesic

- **Tramadol** (Ultram) 50mg

  * centrally acting analgesic compound chemically unrelated to opiates
    - binding at *mu* receptors
    - inhibits reuptake of norepinephrine and serotonin **blocking ascending pain pathways**
    - no histamine release
  
  *50-100mg po q4-6h prn pain

  - analgesic equivalency to codeine
**Infections**

**Antibiotic Therapy**

* narrowest spectrum
* least toxic – side effects
* bactericidal
* cost
* compliance

**Penicillin is drug of choice**

* ~3% of population is allergic
* **500mg q6h** for 7 days
* **Amoxicillin 500mg q8h** is acceptable first alternative (“Trimox”)

**Metronidazole** (Flagyl)

* enters cell of anaerobic gram (-) bacilli, particularly Prevotella and promotes unstable compounds which bind to DNA and inhibit cell synthesis
* good tissue penetration
* warn patient about alcohol consumption
* **250-500mg q6h with PCN**

**Cephalosporins (1st generation)**

* Cephalexin (Keflex) - 500mg q6h
  - ineffective against gram negative cocci
  - consider adding Metronidazole to regimen
Cephalosporins (2\textsuperscript{nd} generation)

Cefaclor (Ceclor) - 250-500mg q8h
- effective against Prevotella

Cephalosporins (3\textsuperscript{rd} generation)

Cefdinir (Omnicef) - 300mg q12h

Clindamycin (Cleocin) - 150-300mg q6h
* significant tissue penetration
* serum levels exceed Minimum Inhibitory Concentration at least 6 hours after recommended doses
* effective against Prevotella