Contemporary Clinical Periodontics
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Patient Status
- Medical
- Medication
- Dental
- Psychological
- Financial
- Habits

American Society of Anesthesiology

ASA I: A patient without systemic disease:
   a normal healthy patient
ASA II: A patient with mild systemic
disease
ASA III: A patient with severe systemic
disease that limits activity, but is
not incapacitating
ASA IV: A patient with incapacitating
systemic disease that is a
constant threat to life

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Medications (examples)
- Blood thinners: Bleeding
- Steroids: Impaired wound healing
- Inhalants: Coughing during Sx
- Bisphosphonates (IV, Oral): ONJ
- Organ Transplant meds: Wound Healing
- Antineoplastic meds: Wound Healing
Primary Indications for Bisphosphonates

- Osteoporosis
- Osteopenia
- Multiple Myeloma
- Paget’s Disease
- Breast CA Therapies
- Prostate CA ADT

Osteoporotic Bone Loss

Normal

Osteoporosis

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Significance of Hip Fractures

- “1 out of 4 patients will die from a hip fracture within a year”
- “50% will die within 5 years after a hip fracture”

NIH 2000 Conference on Osteoporosis

Cooper. Am J Epidemiol. 1993

Risk factors for Osteoporosis

- Age (Older, higher the risk)
- Race (Caucasians and Asians have higher risk)
- Weight (small boned and thin women increase risk)
- Family (heredity)
- Lifestyle (Smoking, lack of exercise, alcohol increase risk)

Ref: National Osteoporosis Foundation, 2009

“T-Score” (Diagnosis of Bone Conditions)

- Indicates level of bone health (Using DXA)
- Normal scores (± 1.0 s.d of mean)
- Osteopenia (bet. minus 1.0 - 2.5 s.d of mean)
- Osteoporosis (below minus 2.5 s.d of mean)

Ref: National Osteoporosis Foundation, 2009

Osteoporosis Drugs- Oral

(FDA approved, 2010)

- Fosamax
- Fosamax with Vit D (approved 5-05)
- Actonel
- Actonel with Calcium (approved 9-05)
- Boniva (approved 5-05)
Osteoporosis Drugs - IV
(FDA approved, 2010)
- **Aredia** (30 mg iv/ mo)*
- **Zometa** (30 mg iv/ mo)*
- **Reclast** (5 mg iv/ yr)**, 2009

* Rx for Multiple Myeloma, Ca
** Rx for Osteoporosis

Bone Biopsy Data
- Alendronate (Fosamax) = 2-3 years normal mineralization
- Risendronate (Actonel) = 3-5 years normal mineralization

Erickson. Bone 2002; 15: 613
Roschger. Bone 2001; 29: 185

Incidence of ONJ
- IV = 20% (Boonyapakorn. Oral Oncol 2008; Feb 15)
- Oral = 0.34% (Mayrokokki. J. Oral Max Surg. 2007; 65: 415)

Potential “Co-morbidities” for ONJ
- A. Periodontitis (Oral Oncol. 2008; Feb 15)
- B. Extractions (Oral Oncol 2008; Feb 15)
- D. Diabetes mellitus (ibid 2007; 92: 1172)
- E. Smoking (Osteoporos. Int. 2007; June 28)

Case Report: Fosamax Rx
- Pt: 57 y.o. male
- CC: Pain upper front tooth
- Med Hx: Fosamax (bisphosphonate) q 7 d, 4 yrs
- Dental Hx: Missing teeth, Periodontitis
- Oral Implant: “Get me out of pain”

Suzuki, Jon. Temple University Grad Perio Clinic, Feb 15, 2009

“To date, no well-controlled prospective studies of treatment outcomes exist for ONJ”
"Odds ratios for ONJ increase with..."

- Hx of Oral Bisphosphonates (3+ yrs)
- Hx of IV Bisphosphonates (6+ mos)
- One or more Co-Morbidities

* Suzuki, J.B. Unpublished Data January 1, 2010

ADA Recommendations

- A. “Routine” Dental Tx is OK
- B. Dental Exams before or early in Rx Bisphosphonates
- C. OHI reduces risk
- D. CTX blood test is inconclusive
- E. “Drug Holiday” may not reduce risk

Fosamax has extended benefit for 5 years

- 1,100 female pts, 55-81 years
- 10 years on Rx Fosamax
- Osteoporosis protection for 5 years after stopping drug
- Conclusion: “Protective benefit for at least 5 years”

Black, D. J. Am. Med. Assoc 2006 (Dec)

Dental Tx for Rx Bisphosphonate Patients

- 1. Observe wound healing in 1 tooth or sextant (2 mos)
- 3. Tx ASAP Endo, Sinus tracts, purulence, severe Periodontitis, Abscess
- 4. Non Sx perio tx with limited flaps
- 5. Regeneration (?); no evidence
- 6. Implants (?); caution

Rx Antibiotics (Begin 1-2 days a dental appt)

- Rx Amoxicillin, 500 mg, #24, tid
  OR (if pen allergy)
- Rx Metronidazole, 500 mg, #24, tid
- Rx Clindamycin, 150 mg, #16, bid
- Rx Ciprofloxacin, 500 mg, #24, tid
- Rx Azithrocin (“Z Pack”), 5 days x 2

ADA Council on Scientific Affairs.
"In general, oral and iv bisphosphonates have a distinct benefit to health and improvement of mineral bone density."

"Dental professionals should not recommend discontinuation of these medications for any reason."

Jon B. Suzuki

Risk Management in Dental Treatment Planning
- Medical Hx (annual, update each appt, ink, signed)
- Vital signs (BP, resp optional, temp optional)
- BWs (q 18 mos) ; FMX (q 4-5 yrs) ; pan optional
- Consent form (signed, witness, ink)
- Treatment Options (Best, Conservative, None)
- Consequences of “no tx”

Treatment Plan
1. Review Med/Dental Hx
2. Dx: Periodontitis / Insurance Codes
3. Initial Tx:
   - OHI
   - Occlusal Control
   - Rx CHX, phenol, Cetylpyridium rinses
   - Ultrasonics Scaling/ RP/ Polish
   - Evaluation (4-6 weeks)
4. Periodontal Surgery
5. Maintenance (q 3 mos)

Antimicrobials*
- Chlorhexidine, 0.12% (Peridex, Periogard, Oris)
- Phenols/ Essential Oils (Listerine)
- Cetylpyridium Cl (Crest ProHealth)
- Stannous Fluoride

*FDA Approved

PATIENT PREPARATION
PRE-PROCEDURAL RINSING
- Safety for both Patient and Clinician
- A “pre-procedural” rinse reduces risk of SBE
- Reduces airborne oral microbes.

Office Periodontal Emergencies
- Head and Neck Exam: Palpate for Submandibular Lymphadenopathies
- Temperature
Why Ultrasonics First?

1. Monitor wound healing
2. Monitor OH
3. Antibiotics (prn) work better
4. Accurate probing (code 4355)

Full Mouth Debridement

- Ultrasonic debridement of entire mouth (20-60 minutes)
- Followed by quadrant Scaling and Root Planing (60 minutes each)

Full Mouth Disinfection

- Quirynen. J.Dent.Res 1995; (Aug) 74, 1459-1467
- Mongardini. J.Perio 1999; (Jun) 70: 632-645

Full-mouth disinfection and Diabetics

- Reduces Plaque Index
- Reduces Bleeding on Probing
- Reduces Pockets
- Gain of attachment (3-9 months)
- Significant reduction in serum HbA1c (full mouth disinfection must be q 3 mos)

Schara. J.Int.Acad Periodontol 2006; 8: 61

“Non-Surgical Periodontal Therapies”

Curettes
Col 13/14
McCall 17S / 18S
Curettes
Graceys 1/2, 5/6 (Ant)
Graceys 11/12, 13/14 (Post)

www.Hufriedy.com

“Thought Leaders”
“Dr. Suzuki”
“Instrument Lists”
**DIAGNOSIS**

- Initial Therapy
  - S/RP (2-4 Appts)
- Surgery
- Non-Surgery*
- Maintenance*
*Possible applications of local drug delivery

**Local Drug Delivery**

- Periochip* (CHX), Omnii-3 M
- Atridox* (Doxycycline), Tolmar
- Arestin* (Minocycline), J & J Orapharma

(*) FDA approved in USA

**Arestin**
- Polymer microspheres
- Resorbable
- Minocycline (Tetracycline)

**Insurance Code: Local Drug Delivery**

- D 4381

Localized delivery of antimicrobial agents via a controlled release vehicle into diseased crevicular tissue, per tooth, by report

(nomenclature and descriptor revised)

**New Classification System for the Periodontal Diseases**

1. Gingival Diseases
   - Plaque induced
   - Nonplaque induced
2. Chronic periodontitis
   - Localized
   - Generalized
3. Aggressive periodontitis
   - Localized
   - Generalized
4. Periodontitis as a manifestation of systemic diseases
   - Associated with systemic diseases
   - Associated with genetic disorders
   - Not otherwise specified

**Dental Plaque, Inflammation, and Systemic Diseases**
**Clinical Implication**

- Periodontitis, as an oral infection, may contribute to risk factors for Systemic Diseases
- Periodontal therapy should reduce the risk for selected systemic diseases

**Heart Disease and Periodontitis**

- 25% incr. risk for MI
- 9760 pts, 14 years
- Periodontitis - yes assoc.
- Gingivitis - no assoc.
- Caries - no assoc

*DeStefano, Br. Dent. J., 1993; 306:688*

**Periodontitis → Stroke (CVA)**

NHANES I Sample, 9,962 pts*

* Hx MI, CVA, Cancer excluded

“2 x Risk of CVA with Periodontitis”

Plaque:

a. Cytokines↑, Inflamm↑,Clotting↑ → Thromboembolism
b. Platelet aggregation → Thromboembolism
c. Lipids↑,Fibrinogen↑,C-reactive protein↑→ CVA/ CVD

*Wu, Arch.Int.Med. 2000; 160: 2749*

**Meds contributing to Osteoporosis**

- Glucocorticoids (tx allergies, inflammation, autoimmune)
- Anti-cancer drugs
- Thyroid hormones
- Immune-suppressive drugs (Cyclosporine A)
- Antacids

**Heartburn meds increase risk for Osteoporosis**

- 1 year on meds
- 44% Increased Risk for Hip Fractures
- 1 year + on meds
  (Biol. Gradient longer on meds increases risk)
- 2 ½ X risk of Hip Fractures
- Gastric pH ↑ Calcium absorption ↓

*Yang, X. J.Am.Med Assoc 2006 (Dec)*

**Recommendations for Patients on Heartburn Meds**

- Monitor meds closely
- DXA of bone annually
- Calcium-rich Diet
- Periodontal Exam

*Yang, X. J.Am.Med Assoc 2006 (Dec)*
Meds contributing to Osteoporosis

- Glucocorticoids (tx allergies, inflammation, autoimmune)
- Anti-cancer drugs
- Thyroid hormones
- Immune-suppressive drugs (Cyclosporine A)
- Antacids
- Antidepressants
- Diabetes meds

Periodontitis: Gastric Ulcers and Gastric Cancers

- 4,504 patients, NHANES III
- 20-59 years of age
- H. pylori seropositivity

Conclusion: Pockets > 5mm Increase risk for H. pylori seropositivity

Dye, Amer J. Public Health 2002; 92: 1309

Oral Bacteria (C. rectus) and H. pylori

- Cross reactivity antigens between: C. rectus and H. pylori
- Induce Immune Rxs in periodontium and stomach

Conclusion: “Relationship between bacteria in stomach and oral cavity”

Okada, J Periodontol 2001; 74: 123

Pancreatic Cancer and Periodontitis

- 51,000 male physicians
- Periodontitis increases risk for Pancreatic Cancer by 64%
- “Periodontitis infections may trigger generalized inflammation”


Wound Healing: Extraction Sockets

“Bone resorption (40-60%) from facial in 3 yrs”
Labial Plate (less than 2 mm thick)=) = Matrix Plug, DFDBA
Labial Plate (2 mm or greater)= Collagen Plug

Ridge Preservation following Extractions

- Allograft* (Grafton, MineralOss, Biohorizons)
  * Non-radiated, non-ethylene-oxide sterilized
- Collagen Plug w/ or w/ out sutures
- Do Nothing
**Extraction Sockets**

- I. Bone + Soft tissue
- II. No Bone + Soft tissue
- III. No Bone + No Soft tissue

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**What bone graft should you use?**

**...and in what order of preference?**

<table>
<thead>
<tr>
<th>Graft Type</th>
<th>Source</th>
<th>Preference</th>
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<tbody>
<tr>
<td>Autograft</td>
<td>Same Human</td>
<td>Highest</td>
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<tr>
<td>Allograft</td>
<td>Different Humans</td>
<td>Second</td>
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<tr>
<td>Xenograft</td>
<td>Man : Animal</td>
<td>Third</td>
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<tr>
<td>Alloplast</td>
<td>Man : Synthetic</td>
<td>Lowest</td>
</tr>
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</table>

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**Implacare™**

Unreinforced resin curettes produce the least alteration of the titanium implant surface following instrumentation, while gold plated metal and reinforced resin curettes significantly alter the titanium surface.

*SEM Study of Titanium Implant Surfaces Treated with Implant Curettes. University of Colorado, Denver, Colorado, USA*

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**Periimplantitis**

- 1. Check Occlusion of Implant
- 2. Ultrasonic debridement with “specialized tips”
- 3. Scale with Implant Scalers
- 4. CHX Irrigation of Implant
- 5. Rx Arestin therapy (Off-FDA Label)