Extraction Site and Ridge Preservation: The Foundation for Dental Implants
Suzuki

1. Note preservation of surrounding soft tissue anatomy.
2. Thorough curettage of the extraction socket to remove debris, granulation tissue.
3. If no bleeding is present, perforate the socket walls with a small carbide bur.
   Place bone graft material up to the alveolar crest of the extraction socket.
Wound Healing: Extraction Sockets: “Bone resorption (40-60%) from facial in 3 yrs”

What is the new standard of care following extractions of teeth?
What bone graft materials should be considered? And in what priority?

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

Antimicrobials: Chlorhexidine, 0.12% (Peridex, Periogard, Oris)
Phenols/Essential Oils (Listerine)
Cetylpyridinium Chloride (Crest ProHealth)
   *FDA Approved
   *ADA Council of Scientific Affairs Accepted

Atraumatic Extractions
   New “minimum standard of care” in Dentistry
Ridge Augmentation (“Socket Preservation”) for all extracted teeth*
   *except presence of infection

Bone Grafts
What bone graft should you use? ...and in what order of preference?
Autogenous Bone
Xenografts: Bovine, Horse (2-2012)

GBR: Extraction Socket
GTR = Guided Tissue Regeneration (Teeth)
GBR = Guided Bone Regeneration (No Teeth)
Ridge Preservation
   D 7953 Bone replacement graft for ridge preservation – per site

Regeneration Surgeries
Bone Grafts
Guided Tissue Regeneration
Biologic/Molecular Approaches

Biologic/Molecular Approaches
Pepgen P-15 (Dentsply): Peptide of 15 amino acids; Mixed with Bovine Bone (particulate); Periodontal Regeneration, Also used for Spinal Surgery, Orthopedics, etc

Emdogain: Enamel Matrix Protein, From Hertwig’s Epithelial Sheath (Pigs), Stimulates Regeneration; Liquid applied to the root surface during periodontal surgery, Can be mixed with bone grafts (off-FDA)

Gem 21: Platelet Derived Growth Factor; A Cytokine; From Platelets; Stimulates Osteogenesis; Mixed with Synthetic Bone

BMP, Bone Morphogenic Protein (Medtronix); Liquid + Collagen strips; Stimulates Osteogenesis; Expensive

“Regional Acceleratory Phenomenon” (RAP)
Bone perforated with high speed round burs or curets
Bone is stimulated with osteogenic cells + osteogenic molecules
Bone Regeneration

Regeneration Surgeries
Bone Grafts
Guided Tissue Regeneration
Biologic/Molecular Approaches

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What approach do I use?
Posterior Extractions (with sufficient bone): Bone Graft
Posterior Extractions (w/out sufficient bone): Bone Graft + Membrane
Anterior Extractions (with sufficient bone): Bone Graft + Membrane
Anterior Extractions (w/out sufficient bone): Bone Graft + Membrane + Biologics
Bisphosphonate Patient? Caution

Post-operative management
Appts at 1, 3 wks
OHI, “ultra soft” brush, interprox cleaners
Antimicrobial rinse for 2-3 wks
Gently deplaque
CHX soaked swab
Curette, supragingival
Prophylaxis, rubber cup, no paste
Repeat at 5-6 wks (prn)

Post-surgical management
Hemostasis
Periodontal Dressing (optional)
Pain Control
Ice packs
Antibiotics
Antimicrobials
P.O. Instructions

Current Pain Meds for
Periodontal Surgery/ Extractions
   Ibuprofen, 200 mg
      Disp: OTC Bottle
      Sig: 3 tabs stat (or 30 min a procedure)
       2 tabs q 4-6 h prn pain

   Plus
   Tylenol 350 mg
      Disp: OTC Bottle
      Sig: 1 tab stat
       1 tab q 4-6 h prn pain (with Ibuprofin tabs)

   for Severe Pain
   Rx Percocet
      Disp: #12 (twelve)
      Sig: 1 tab stat
       1 tab q 4-6 h prn pain

PRE-OPERATIVE ANTIBIOTICS
Implant failure increases 2-3X if no antibiotics given
The procedure has significant risk of postoperative infection.
Adequate antibiotic tissue concentration must be present at time of surgery.
Amoxicillin 500mg or Clindamycin 300mg or Cephalexin 500mg
2 tabs 1hr prior to surgery, then 1 tab q8h until complete (x 3-7 days)

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

P.O. Instructions (oral + written)

Post-operative management
   Appts at 1, 3 wks
   OHI, “ultra soft” brush, interprox cleaners
   Antimicrobial rinse for 2-3 wks
   Gently deplaque
   CHX soaked swab
Curette, supragingival
Prophylaxis, rubber cup, no paste
Repeat at 5-6 wks (prn)
Hemorrhage control: “Bone Wax” warmed and squeezed into bleeding site

Ridge Augmentation Keys to Success
- Asepsis and pre-operative antibiotics
- Flap access (2 teeth anterior, 1 posterior)
- Complete degranulation of socket
- Atraumatic handling of flaps
- Decortication for RAP
- Graft and flap stability - suturing
- Spacing – do not overpack graft

Extraction + Bone Augmentation Surgical Steps/Technique Description:
sulcular incisions circumferentially around tooth
periotomes and elevators for minimally invasive extraction, consider sectioning tooth with handpiece
(before flap reflection if possible
extend incisions 2 teeth mesial, 1 tooth distal for access (retrace several times)
Orban knife and Molt curette (twisting motion) for buccal and lingual flap reflection (past MGJ)
curette (McCall) for degranulation
Barrier membrane (w/ sterile packaging) - absorbable or nonabsorbable
premeasure site with perio probe - can use template first, then shape membrane dry w/ scissors
-want to make sure it does not bunch up nor touch adjacent teeth
bone graft preparation - hydrated with saline or antibiotics -
revision of flap with submucosal releasing incision (2-3mm apical to MGJ); also release with surgical
scissors insert closed, open inside flap, withdraw and close extraorally
make sure socket is completely degranulated and irrigated
place particulate bone graft - can use molt curette, do not overpack nor compress - suction only with
gauze
placement of membrane - position several mm inside borders of flaps
suturing - prefer vicryl or monocryl sutures; interrupted sutures to reapproximate flap edges. Do not
want to overtighten but attempt for tension free/passive primary closure of as close to primary closure
as possible
surgeons knot 1-2-1 or 2-1-1 - reverse direction of knot tie each pass
position sutures ~3mm apart from each other and from edges of tissue flaps as sutures create a 1mm
circumferential devital/nerotic zone of tissue - to avoid tearing through
final gauze pressure for hemostasis and to minimize blood clot for 4-5 min