Atraumatic Oral Surgery for the General Dentist: Faster, Easier, and More Predictable

Dr. Karl R. Koerner

Purpose of this course:

- As a general dentist, do oral surgery:
  - Faster
  - More safely
  - More predictably
  - More easily
  - With less stress
  - Less trauma for the patient
Disclaimer

- Dr. Koerner does not receive money, services, or any other compensation from companies – Not Hu-Friedy, Schumacher, Bubba's Dental Supply, Zimmer, etc.

Manual of Minor Oral Surgery for the General Dentist
(Blackwell Publishing)

- "Surgical" extractions
- Third molar extractions
- Apicoectomy and retrofill
- Pre-prosthetic oral surgery
- Surgical crown lengthening
- Biopsy
- Management of bleeding problems
- Management of infection
- Patient evaluation
- Third world (volunteer) dentistry

800-862-6657, www.blackwellprofessional.com

Over the last 13 years...

- About 15,000 surgery patients
- Some cases with IV sedation using a nurse anesthetist
- Oral Sedation
  - Impacted wisdom teeth
  - Other extractions
  - Implants
  - Bone grafts
  - Apicos
  - Biopsies
The way it used to be…

Maxillary Pre-molar Area: 2 weeks post-extraction.

Impact-Air 45
Sabra
Impact-Air 45

Sabra

Medidenta.

702 surgical Length high-speed bur.

Aseptico AEU 17B with 2:1 increase Bien Air handpieces.

Electric: 30-60,000 rpm
Much easier for surgery
The operator will find that on numerous occasions the luxator can be inserted around the circumference of the root and enable dislodgment, dispensing with the need for making a flap to remove the root.
Fine Suction Tip
Quality Aspirators
800-858-2121

O2BA: 1 mm opening
Micro suction for endo
$72.

For small root tips in narrow sockets, like maxillary 1st premolars.

Surgical Extractions (includes local anesthesia, suturing, if needed, and routing postoperative care)

7140 or 7210?

Surgical or Routine??

“Surgical” extraction.

D7210  surgical removal of erupted tooth requiring elevation of mucoperiosteal flap and removal of bone and/or section of tooth

D7220  removal of impacted tooth – soft tissue

D7230  removal of impacted tooth – partially bony

D7240  removal of impacted tooth – completely bony

Max or all of crown covered by bone; requires mucoperiosteal flap elevation and bone removal.

Dr. Karl Koerner
Surgical removal of erupted tooth, 7210. (CDT 11-12)

Old: Surgical removal of erupted tooth requiring elevation of mucoperiosteal flap and removal of bone and/or section of tooth.

New: Surgical removal of erupted tooth requiring removal of bone and/or sectioning of tooth, and including elevation of mucoperiosteal flap if indicated.

Do not lose sight of the fact that in an extraction one has to sever, displace, cut, lacerate, amputate, section, divorce, or whatever word you choose, the periodontal membrane from the tooth.

This can only be for 3 or 4 mm with a luxator, so how does one detach the remaining periodontal membrane?

Dr. Dennis Tarnow: A periotome is time consuming and not always effective.
Quartz Crystal Piezoelectric Oscillating System.

Sword tips:
SD 70  0.5mm down
SD 71
SD 70Z
& Spoon tip for root tips

0.5mm to 0.8mm

Similar to the Piezetome: $2600 + tips (about $200 each.)

www.osadausa.com
Tip in use with active irrigation.

Patient (middle) with assistants on both sides. Immediate denture insertion.
Uses of Osada’s ENAC tips:

- **Perio**
  - Cleaning and scaling of periodontal tissues.
  - Can add medicaments to irrigation.

- **Endodontic**
  - Cleansing and shaping of canals.
  - Filing of canals.
  - Removal of gutta percha, silver points, posts, separated files, cement...

- **Apicoectomy tips**
  - Apical resection.
  - Retropreparation.

- **Implants**
  - Ridge splitting - removing an implant
  - Sinus graft procedures.

- **Surgical extractions**
  - Sever soft tissue attachments to tooth.
  - Minimally Invasive bone excision.
  - Tooth sectioning.

Brands of piezos...

- **Piezosurgery (Mectron)** $18,000
- **Piezotome (Acteon/Satelec)** 12,000
- **VarioSurg (Brasseler/NSK)** 8,000
- **Piezoart (DoWell)** 6,000
- **(Osada ENAC)** $2,600

Another technique is to take a long, thin diamond and go around the tooth on the mesial, distal, and the palatal (if the bone is thick).

To preserve bone, it is preferable when creating a trough around the tooth to cut slightly into the tooth rather than the adjacent bone.

This will provide room for a perirotome or a small-diameter elevator.
Ridge Preservation
(Socket bone grafting.)

How about an extraction with:

- no anesthetic
- no bleeding
- no sutures

- 10 patients
  - 8 on IV bisphosphonates
  - 2 on oral 10 years
  - As band moves, PDL destroyed
  - Results in extrusion
  - Added a new band/week
  - Occlusion adjusted as needed
  - Mean: 8 weeks (2-14)
  - No sutures or antibiotics
Atraumatic Teeth Extraction in Bisphosphonate-Treated Patients

Eran Regev, DMD, MD,* Joshua Lastmann, DMD,† and Rizam Nashof, DMD‡

Purpose: The purpose of this study was to suggest an alternative technique for atraumatic teeth extraction that would prevent bone exposure and the associated complication of osteonecrosis of the jaws in bisphosphonate (BP)-treated patients, without terminating the treatment.

Patients and Methods: A total of 10 patients treated with BPs for multiple myeloma, metastatic breast cancer, and osteoporosis, requiring dental extractions of not treatable teeth, were included in this study. The extractions were performed by means of orthodontic elastics placed around the roots, causing slow and gradual exfoliation of the teeth.

Results: The technique was applied to 21 roots of 15 teeth. A total of 10 roots extruded spontaneously. Two roots had to be removed with minimal manipulation by forceps. The mean time required for exfoliation was 5.6 weeks. All sockets showed soft tissue healing, and there were no signs of exposure of exposed bone during the 9-month follow-up.

Conclusions: Atraumatic extraction by use of elastics is a safe technique that may be used in BP-treated patients to prevent osteonecrosis of the jaws.

*2007 American Association of Oral and Maxillofacial Surgeons

When might extensive buccal bone removal be acceptable?

Buccal bone removal for erupted maxillary thirds.
3rd Molar

51 year old woman.

(Case submitted by an anonymous practitioner.)

Missing Premolars

Sinus
Apical Retention Forceps.

Schumacher: 1107, 1121
Hu-Friedy: FAF 150, FAF 151

New and improved.

…..the further toward the apex that the forceps blades can go, the more periodontal membrane is detached.

New 150  Old 150

Key points:
• Slow pressure
• Rotation if possible
• B-L pressure
• Apical pressure
• Hold for 10 sec. at a time

Myer on the extraction of individual roots:
‘An extraction’ is accomplished by rotating the tooth (once the forceps are placed on the tooth) and pushing apically for 10 seconds then, gripping the forceps, the wrist and hand are turned 15°.

This is a small amount, but it puts a lot of the periodontal membrane on stretch and it will rupture. (Ten seconds has been used in the clinic and seems a reasonable period, and all the operators have a clock to help us keep to that time. Without the clock, the period of 10 seconds will be greatly underestimated.)

This position is held for a further 10 seconds, and then the wrist is turned in the opposite direction, thus stretching the previously compressed periodontal membrane, and it too will now rupture.
After an extraction, the socket should be compressed so that any microfractured cervical bone can be digitally approximated.

**Inter-radicular Bone Removal**

Inter-radicular bone removal.
No buccal bone lost. Age 45.
Cowhorn
Luxator
Small Cryer
Bur
Inter-radicular bone removed

Sectioning Teeth for Removal

Prevent Buccal bone loss
Tuberosity fracture

Large Cryers for maxillary molars.
Small Cryers for mandibular molars.

Schumacher #21-22

Luxate with Cowhorn or this Schumacher 79AS ....

301... then small Cryers

301 Small Cryers Luxators Inter-radicular bone removal VS. Buccal bone removal
1. No triangular flap (releasing incision)
2. No bone removal
3. No trauma to adjacent teeth
4. Not a long time to do the procedure

Better?

My evaluation for CR:

- **Good**
  - Generally, they do work.
  - They conserve bone by pushing the tooth coronally enough to snap the ligament.
  - It is a faster extraction.
  - Patients are impressed by the ease and quickness.

- **Challenges**
  - Need to be careful in the mental nerve area.
  - Harder for 2nd molars because of the cheek.
  - Steep learning curve, especially not to squeeze.
  - Need to section lower molars.
  - Fairly expensive.

Carl Misch:

No squeezing pressure is applied to the handles or to the tooth. Instead, the handles (once in position) are rotated as one unit for a few degrees, and then the action is stopped for approximately 1-2 minutes.
More vertical (occlusal) “lift” than buccal displacement.

Only need about 0.2 to 0.6 mm of vertical lift (twice its length) to “snap” the ligament.

“Creep” is a phenomenon whereby a material continues to change shape over time under a constant load. In a tooth extraction, creep may occur in bone and the periodontal ligament.

Once creep has expanded and weakened the periodontal ligament and bone, the handle of the extraction device may be slowly rotated another few degrees for 10 to 30 seconds.

This action contributes to the creep rupture of the ligament and usually elevates the tooth a few millimeters from the socket.

At this point the tooth is loose and ready to be removed.

Age 87. Patient on Coumadin.

Four maxillary teeth to be removed.

Gauze rolled up and placed in undercut.

Dead tooth. Some bone ankylosed on the buccal.
All extractions took 1-2 minutes. No flaps, no suturing, minimal bleeding.

Secret: Stabilize with your other hand. Some ankylosed bone.

Another Patient

Lingual beak.

Wrong
There are other methods that can be used to manage intact and broken teeth.

If the crown is intact, cut it off at the osseous crest. **Drill into the pulp chamber with a high-speed, long, thin, pointed diamond (10 mm long) (No. 859 diamond [Brasseler USA]) and section the tooth mesiodistally.**

Then, remove the sections. This avoids destroying any bone.
Cutting a root in half lengthwise.

Slowly Disrupting the PDL -- 2 Devices.

Courtesy of Home Depot

Sapien Root Remover System

Elevate Your Practice Standards

The Sapien Root Remover System is an important addition to any dentist's office.

$1695
Use root drill.

Ratchet in the appropriate self-threading screw.

Screw head sticks through.

Place the Protector filled with impression material. (Distributes pressure over a wide area.)

Place the X-tractor against the protector plate and turn the handle screw.

Remove the tray and then the tooth.

Pictures: Dr. Singh, Canada

The X-Trac Extraction System

www.atitan.com

$2499
Bone can only be dilated if the bone is elastic enough to permit such expansion.

Root removal by attrition

Ankylosis?

Is it malpractice to leave a root?
Not if..

1. The root is small (5 mm or less) not loose, and not infected.
2. You feel that it is in the best interest of the patient to leave it.
3. The patient is informed.
4. The occurrence is recorded in the patient's chart.
5. An x-ray is taken for documentation.
6. Follow-up is scheduled.