

Surgical Extractions

(Nearly no bone removal, timely surgery.)



Howard Farran, DDS, MBA
Dental Town

Don't plan on retiring at 55.

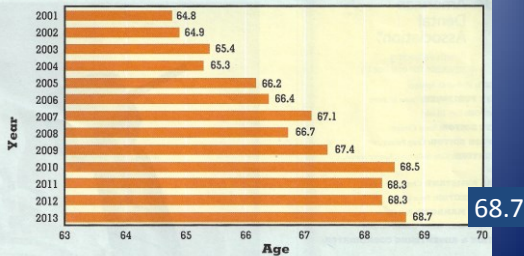


Probably not at 60 or 65 either.

ADA News
Nov. 2014.

Dentists' average age at retirement

The average age of a dentist at retirement has increased from 64.8 in 2001 to 68.7 in 2013.

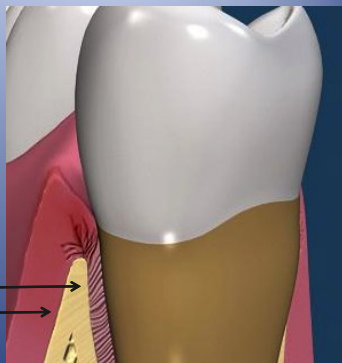


Source: American Dental Association, ADA Health Policy Institute Research Brief, "Supply of Dentists in the United States is Likely to Grow." Available from ADA.org/researchbriefs.

Answer to 'how to do better':

- Lower expenses
- Increase marketing
 - Have a good website and be "search engine optimized"
 - have a Facebook page
- Add new products and services
- Freeze wages (after all, yours is going down)
- Do root canals, crowns, and dentures
- **PDL teeth, even easier wisdom teeth**
- Join insurance plans
- Use 3D CBCT
- Don't do gold (overhead too high)
- Place single root-form implants
- Do simple ortho, Invisalign
- Treat sleep apnea and snoring
- Make mouth guards

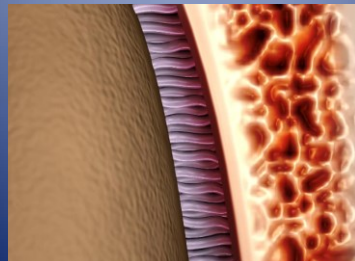
Extractions



Stretch ligament.
Expand bone.

Basics that are still valid!

- Sever gingival fibers attached to the root
- Luxate the tooth - stretch and snap PDL fibers
 - Place fingers of opposite hand on adjacent teeth to detect any unwanted mobilization



The basics are still valid:

- Use firm and deliberate movements with “sustained” pressure (8-10 seconds in each direction)
- Luxate tooth as much as possible BEFORE sectioning.
- Don’t take too long for an extraction
- Avoid excessive force
- Section teeth as needed
- Be aware of major nerves, blood vessels, and the maxillary sinus during the procedure



Avoiding Opioids

Moore PA, Hersh EV. Combining ibuprofen and acetaminophen for acute pain management after third-molar extractions: translating clinical research to dental practice.

JADA 2013 Aug; 144(8):898-908.

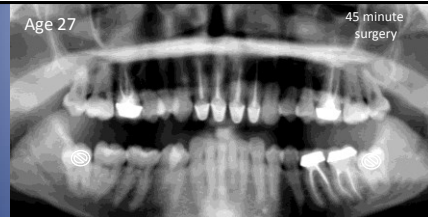
- For moderate to severe pain: 400 to 600 mg ibuprofen with 500 mg acetaminophen every 6 hours for 24 hours. Then 400 mg ibuprofen with 500 mg acetaminophen after the first day.
- It is important to avoid daily doses of more than 3000 mg acetaminophen or 2400 mg ibuprofen.



- In addition, they cited a [study](#) by Daniels et al comparing various combinations of ibuprofen, codeine, and acetaminophen for treating the pain of third molar extractions.

- Not only did the patients receiving the ibuprofen/acetaminophen combination experience less pain than those receiving codeine and acetaminophen but they also had fewer adverse reactions such as nausea, vomiting, headache, and dizziness.

- Previous research has shown that combining analgesics that work differently provides more pain relief than a single analgesic can provide on its own.



Wife: age 27

Husband: Emergency room physician

600 mg ibuprofen with 500 mg acetaminophen every 6 hours for 24 hours.

Then 400 mg ibuprofen with 500 mg acetaminophen after the first day.

Oxycodone (without acetaminophen) 5 mg X 12, 1 q4-6 h in case of "breakout" pain

Zofran 8 mg X 12, 1 tab tid in case of nausea.

Dexamethasone 8 mg IV or IM pre-op, 1.5 mg qid starting the next day for 10 doses (for swelling but also cuts pain in half).

Two sides of “minimally traumatic” extractions
(both with no buccal bone removal)

Principles of Hard Tissue Regeneration and Implant Therapy: A Complete Step-by-Step Guide

One side: very conservative.




Lee H. Silverstein, DDS, MS
David Kurtzman, DDS
Peter C. Shatz, DDS

Silverstein LG, Kurtzman D, and Shatz, PC
Principles of hard tissue Regeneration and Implant Therapy.
AEGIS Publications, LLC, Newtown, PA 2010.

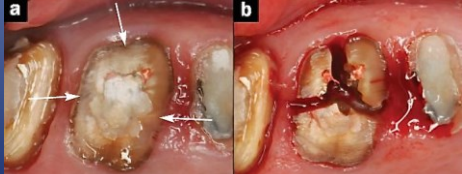
Two sides of “minimally traumatic” extractions (both with no buccal bone removal)

- Soft tissue elevation: periosteal elevator VS. Soft tissue elevation: #12 blade and periosteal
- Bisect the papillae (between buccal and lingual) with just the periosteal elevator VS. Bisect the papillae with a blade



Two sides of “minimally traumatic” extractions (both with no buccal bone removal)

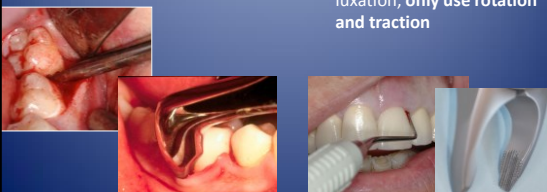
- Section teeth just as seems necessary VS. Section all multi-rooted teeth to remove roots individually



Cavallaro J, Greenstein G, & Greenstein B. Extracting teeth in preparation for dental implants. Dent Today (Peer reviewed article for CE credit). Oct. 2014. Pp 92-99.

Two sides of “minimally traumatic” extractions (both with no buccal bone removal)

- Luxate with an elevator and a regular forcep VS. Luxate with a periosteal down the PDL then rotate tooth out with a thin-beaked forcep
- Use buccal/lingual luxati, then traction VS. Avoid buccal/lingual luxation, only use rotation and traction



Flaps and Sutures

Surgeon's knot summary.

- 2 throws one way
- 1 throw the opposite way
- 1 throw the same way as how you started (optional)

Clockwise twice around

Counter-clockwise once around

Clockwise once around

Hupp J, et al. Contemporary oral and maxillofacial surgery, 5th ed. Mosby. St. Louis, MO. 2008.

A

B

Hupp J, et al. Contemporary oral and maxillofacial surgery, 5th ed. Mosby. St. Louis, MO. 2008.

Triangular flap:

- One release on side of a papilla
- Envelope flap can be converted to a triangular flap
- Sutures as needed: 3 mm apart AND to stabilize papillae
- Bone removal not appropriate any more

A

B

Hupp J, et al. Contemporary oral and maxillofacial surgery, 5th ed. Mosby. St. Louis, MO. 2008.



'Triangular flap'

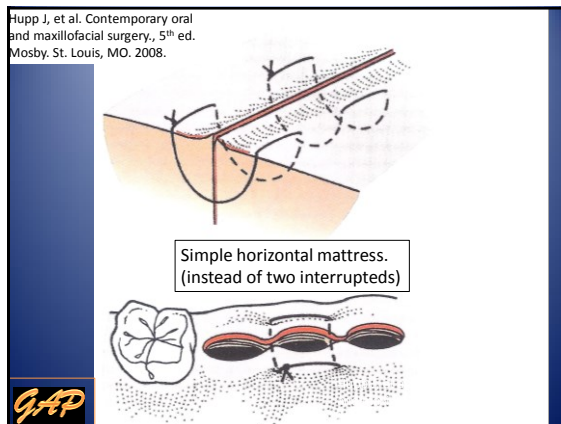
Angled release one tooth away from the one worked on.

Fold.

GAP

Triangular flap.

GAP



Bleeding Rate During Oral Surgery of Oral Anticoagulant Therapy Patients With

Assc

Purpose: C windows for upper lip as a blood drain for

Methods: or greater than OAT, and core of oral valve the OAT as a

Results: Ex active bleed (0.13%, P < mechanical 3 class with 0.11%)

Conclusions: windows up to be open, if to enter face

J Oral Maxill

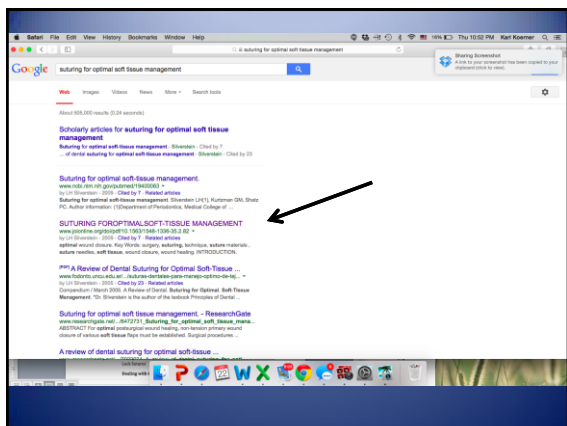
FIGURE 1. Typical evolution of a case with no adverse events. Extraction of 4 teeth was performed simultaneously in a patient with a mechanical heart valve.

Cicero et al. Bleeding During Oral Surgery of OAT Patients. J Oral Maxillofac Surg. 2014.

8 mm

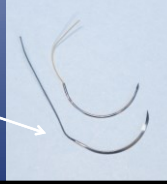
Horizontal Mattress

Silverstein, M, et al. Suture for optimal soft-tissue management. J Imp Dentistry. 35(2):82, 2009.



Suture Material

- Plain gut: tensile strength lasts **24-48 hours**. Need minimum of 5 days. Usually too short.
- Chromic gut tensile strength lasts **5 days**. Resorbs in 7-10.
- Polyglactin (Vicryl) absorbable but works like a non-absorbable. Tensile strength for **14 days** gone in 21-28.
- Non-absorbables: Silk, PTFE, polyester... have good tensile strength.
- Needle: 3/8 circle most common.



Burs For Oral Surgery

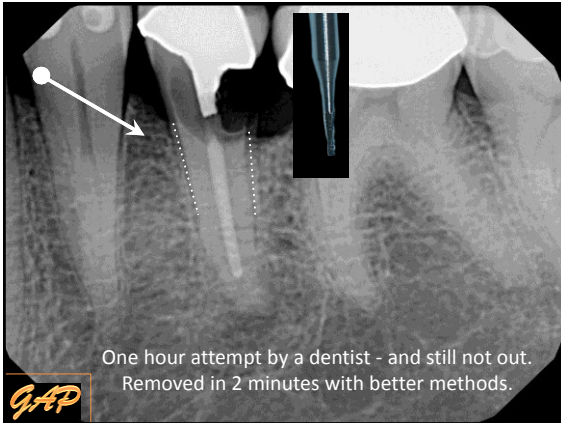
#10 round #703 #702 #700 (or 701)



- 3rd molar impactions
- Bulk buccal bone removal
- FG or straight
- 3rd molar impactions
- Troughing, section cuts.
- FG or straight
- Routine extractions
- FG or straight
- FG: 19,25,30 mm
- [30 mm FG from Sabra Dental]
- "Periotome" or "skinny" bur
- Routine extractions
- Down PDL at expense of root
- FG or straight
- FG: 19,25,30 mm
- [30 mm FG from Salvin]



For FG, recommend at least surgical length (25 mm).



One hour attempt by a dentist - and still not out.
Removed in 2 minutes with better methods.



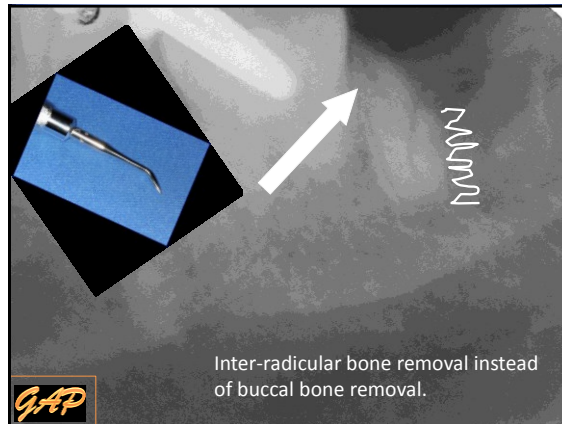
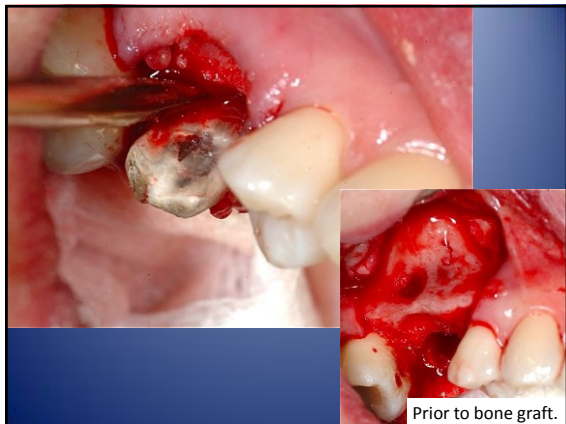
"Another technique is to take a **long, thin diamond [or carbide] and go around the tooth on the mesial, distal, and the palatal (if the bone is thick).**"

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



Cavallaro JS, Greenstein G and Tarnow DP.
Clinical pearls for surgical implant dentistry,
Part 3. Dentistry Today. Oct. 2010.





Starting today:
 Access to an additional surgical
 instrument worth hundreds of
 dollars.

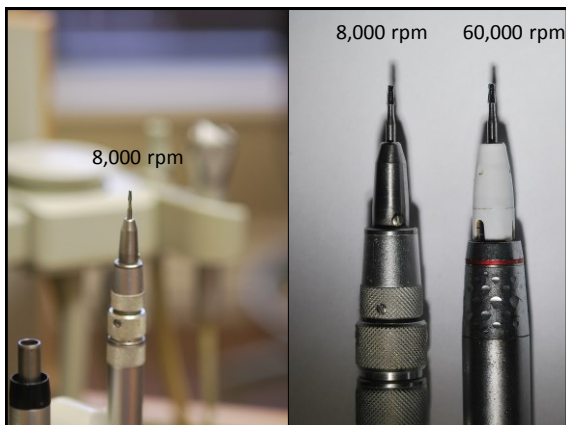
No extra charge.

Shaping Drill Speed:
 QSDs should operate between 1200 – 1500rpm.

QSDs cut efficiently; reducing the downward force will allow the drill to cut without detectable chatter.

Shaping Drill Technique:

- For either crestal or subcrestal implant placement, drill to the top of either the crestal or subcrestal depth landmarks on the QSD (full depth - see illustration to the right).



stryker®

85,000 rpm

Can drill bone with both Stryker and regular straight handpiece.

Both require irrigation. Monoject syringe (12cc) commonly used.

Dental slowspeed. About **8,000 rpm**.

Not for enamel. **Good enough for bone and roots.**

Increased effectiveness and production.

GAP

More length than a highspeed when needed.

GAP

ce
Test 178
DentalCEToday.com

ORAL SURGERY

Extracting Teeth in Preparation for Dental Implants

John Cavallaro, DDS

The atraumatic removal of a tooth enhances patient comfort and preserves bone. Traditionally, the sequence for tooth removal after anesthesia consists of severing gingival fibers by raming a periodontal elevator in the sulcus. Then an elevator is used to loosen the tooth, and forceps are employed to luxate it buccolingually, thereby expanding the alveolar socket and facilitating its removal. However, a tooth may be difficult to extract due to root length, root dilation, gnarled or bulbous roots, and thickness of supporting bone, ankylosis, or subcrestal fracture. Furthermore, if a site to receive an implant, a tooth must be removed atraumatically to avoid fracturing walls of the alveolus, especially a thin buccal plane in the aesthetic zone. This article discusses tooth removal techniques which employ dental burs as adjunctive aids. In addition, various issues associated with extractions in preparation for dental implants are addressed.

Gary Greenstein, DDS, MS

Figure 1a. An extra-long carbide fissure bur (700XXL [Salvin Dental Specialties]) is very efficient for sectioning teeth prior to extractions (No. 859 [Brasseler USA]).

Figure 1b. A diamond bur is also an efficient rotary instrument for sectioning teeth prior to extractions (No. 859 [Brasseler USA]).

Cavallaro J, Greenstein G, & Greenstein B. Extracting teeth in preparation for dental implants. Dent Today (Peer reviewed article for CE credit). Oct. 2014. Pp 92-99.

GAP

Figure 1a. An extra-long carbide fissure bur (700XXL [Salvin Dental Specialties]) is very efficient for sectioning teeth prior to extractions (No. 859 [Brasseler USA]).

Figure 1b. A diamond bur is also an efficient rotary instrument for sectioning teeth prior to extractions (No. 859 [Brasseler USA]).

“Down three-quarters of the root length.”

GAP

Main surgical suction tip: 3.0 inside diameter.

“Special” surgical suction tip: 2.0 inside diameter.

GAP

Quality Aspirators

3.0 mm (15P3A)

2.0 mm (03EA)

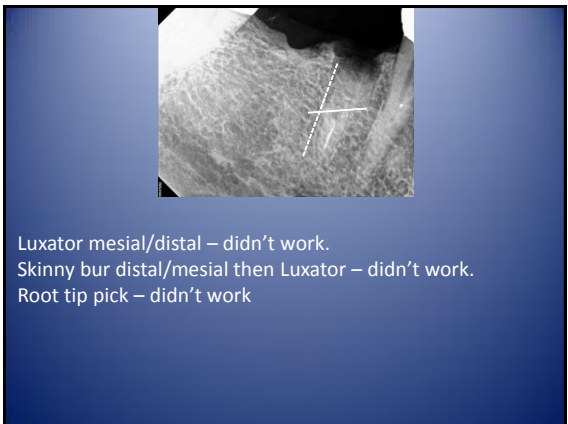
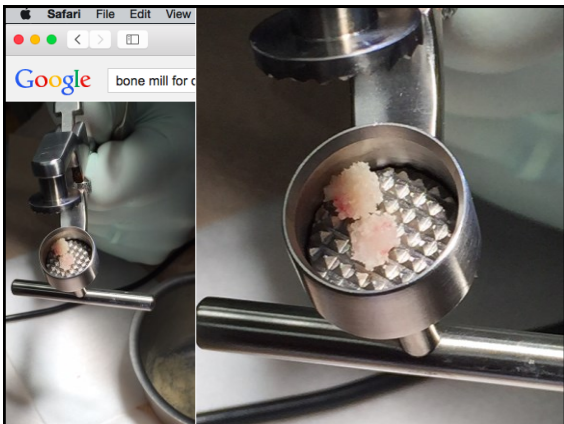
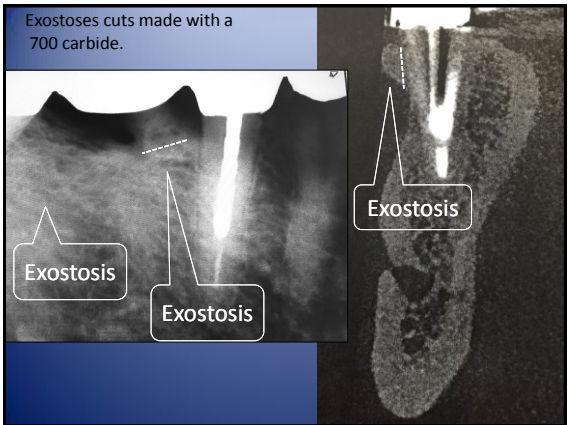
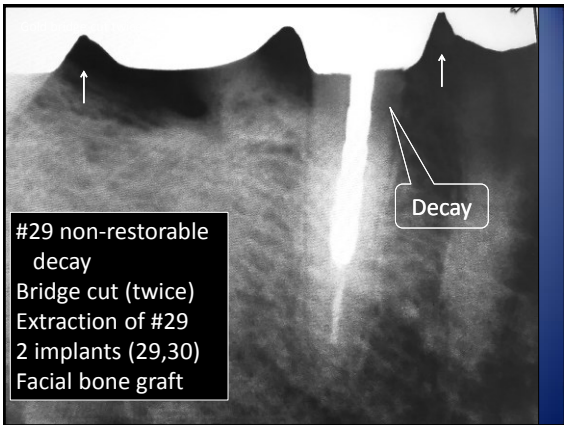
Wire to clean it out.

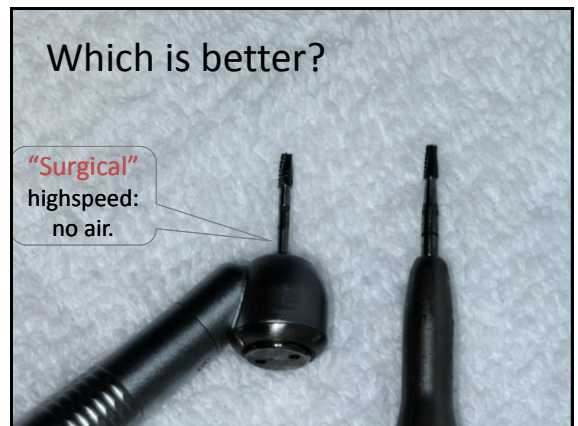
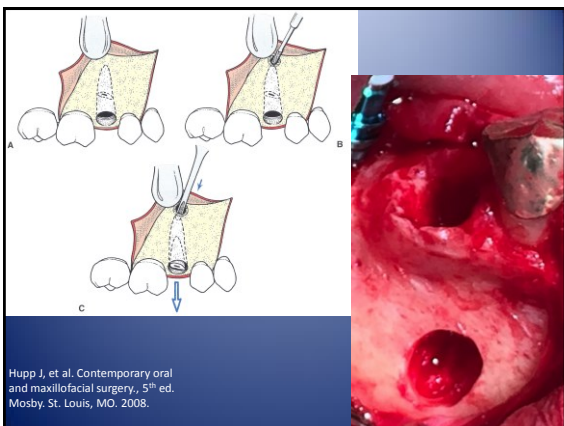
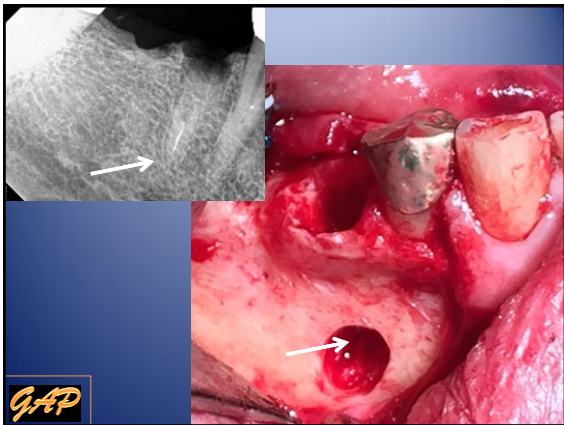
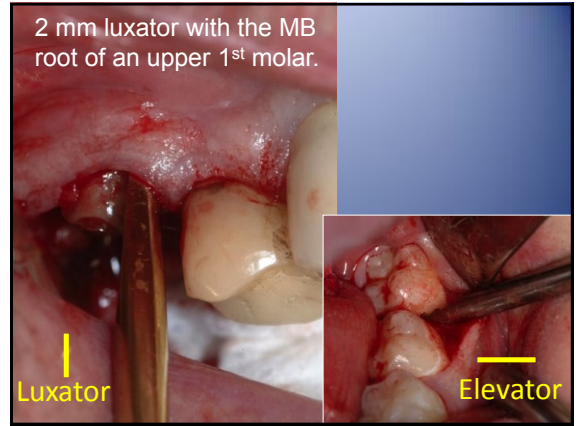
(Also 1.0 mm diameter: 02BA w/wire too.)

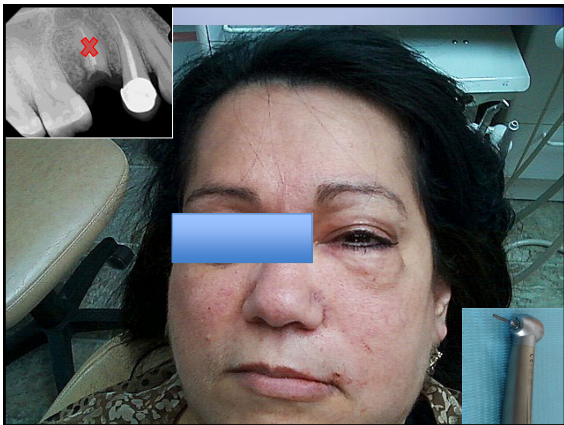
GAP



Case Report

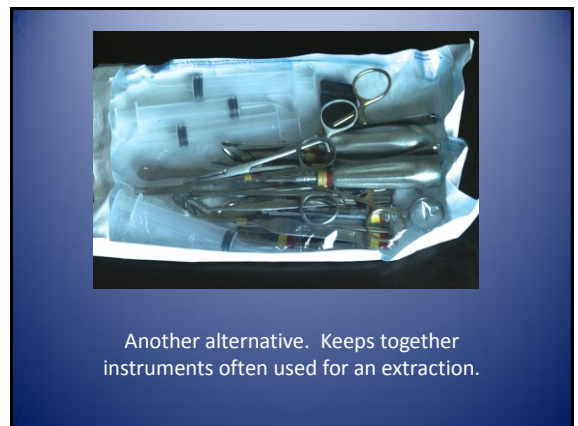






- Immediate air emphysema
 - Infraorbital area to anterior neck (subcutaneous)
 - Also to mediastinum and carotid sheath
 - Hard to breath
- Treatment
 - Steroids, oral antibiotics, pain meds (no decompression)

Stanton, DC & Yepes, JF. Subcutaneous cervicofacial emphysema and pneumo-mediastinum: A rare complication after a crown preparation. Gen Dent. Mar/Apr, 2005.





Readily available sterile 18 X 26 inch latex-free, plastic-lined, towel for placing under instruments or as a sterile bib for patients.

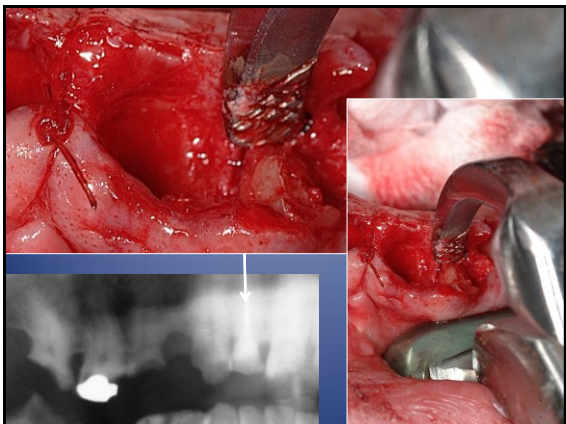
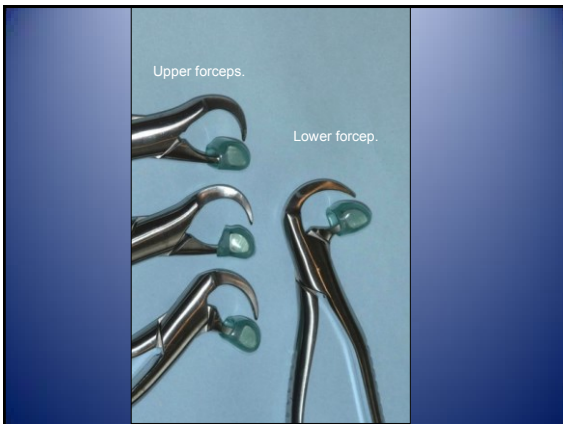
The Most Effective Instruments for Surgery: **Basic**

- Periosteal elevator
- Straight elevator
- Surgical scissors
- Needle holder
- Retractor (Seldin or Minn.)
- Apical forceps (2)
- Surgical spoon curette
- Scalpel handle (flat or round)
- Bite block (child)
- Suction tip

Periosteal Elevator – Forceps

Molt Periosteal Elevator

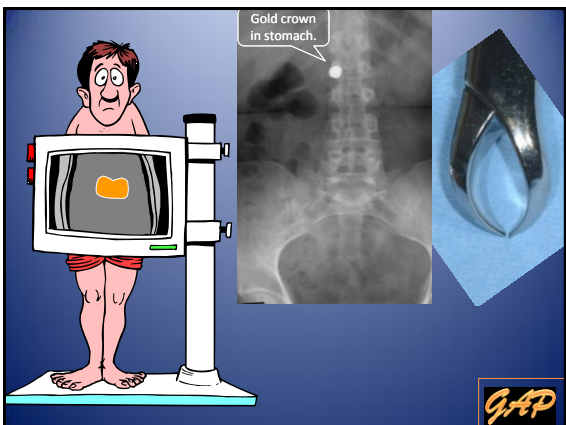
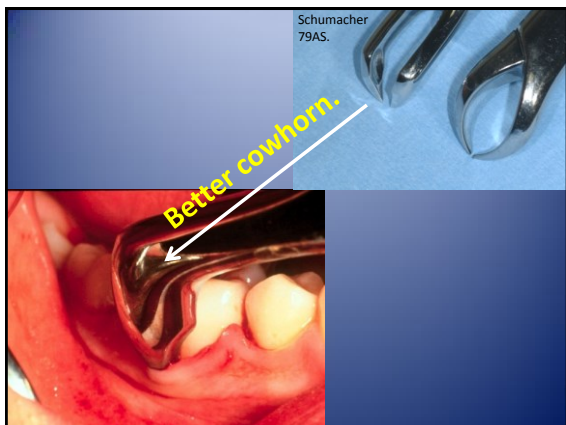
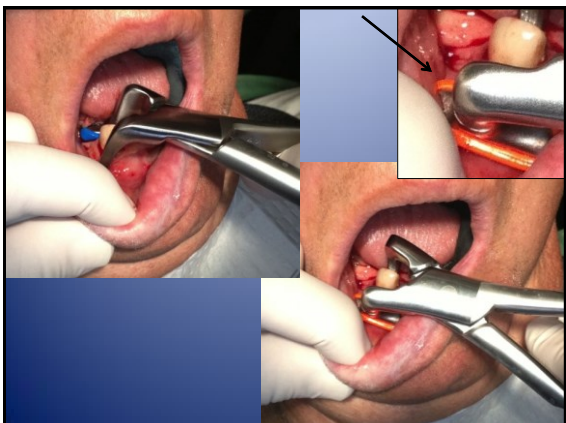
Apical Forceps

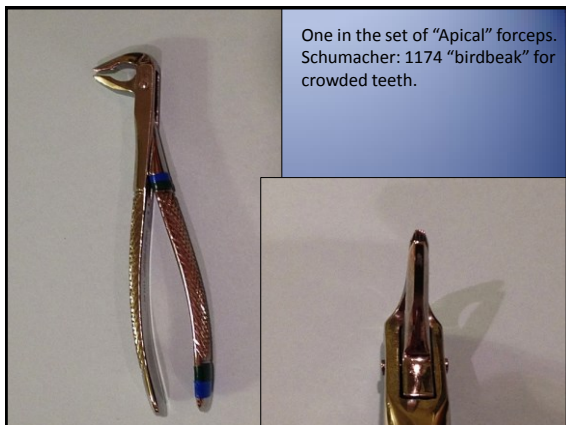
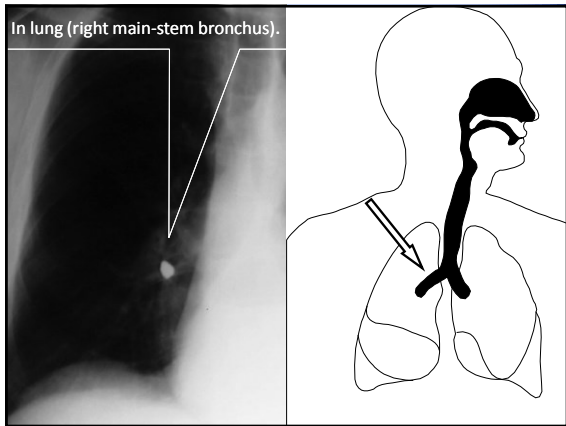




My evaluation for CR:

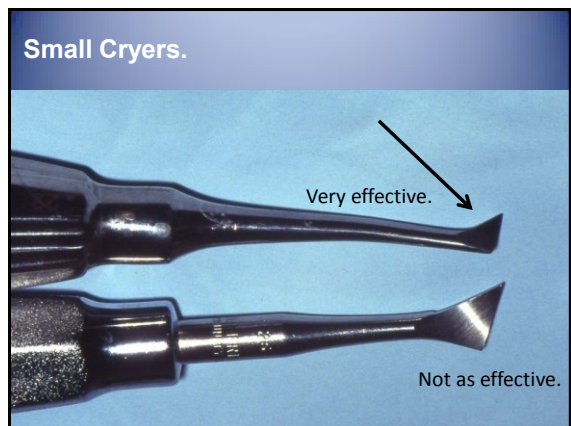
- Good
 - Generally, they do work.
 - They conserve bone by pushing the tooth coronally enough to snap the ligament.
 - It is a faster extraction.
 - Patients are impressed by the ease and quickness.
- Challenges
 - Need to be careful in the mental nerve area.
 - Harder for 2nd molars because of the cheek.
 - Steep learning curve, especially not to squeeze.
 - Need to section lower molars.
 - Gauze in undercuts
 - Fairly expensive.

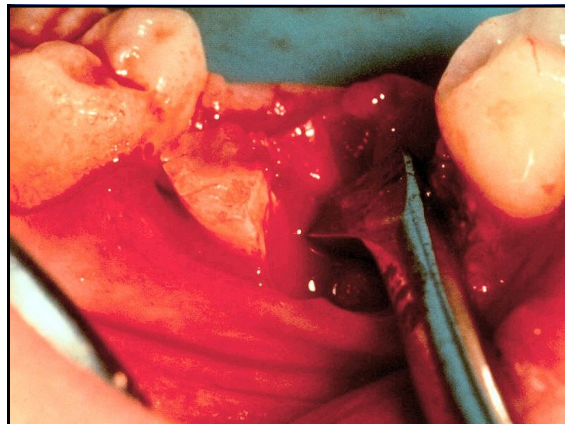
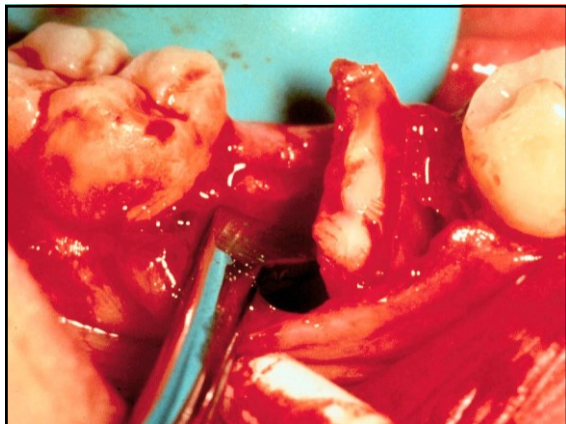




Some of the best instruments:
Supplemental

Root tip pics (2)	Tissue pickups
Small Cryers (2)	(for bone grafting)
Periotomes	Curved Kelly Hemostat
Luxators	Peet Forcep
Cogswell B elevator	Bone file (2X)
Other special elevators	Ronguer (Blumenthal 30°)
	Other forceps





What happens when you "slip" with a Luxator or elevator?

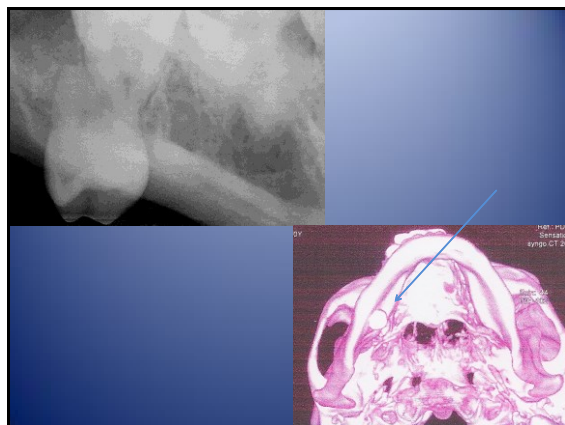
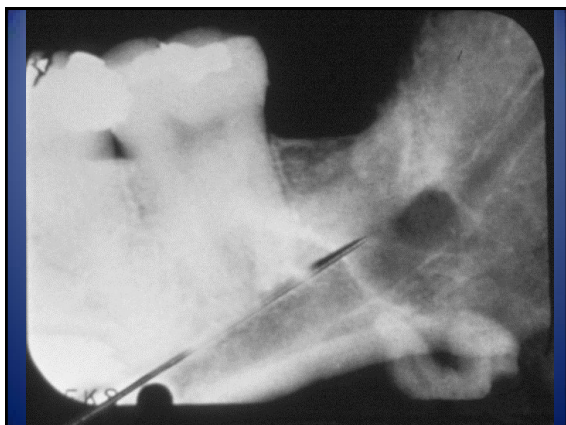
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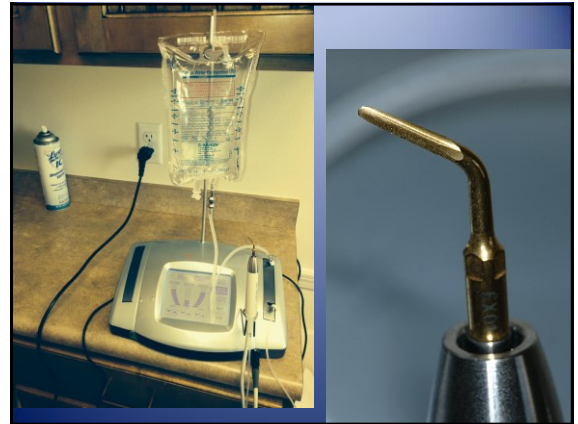
1 Facial artery

Slipped to buccal

An anatomical diagram of the human head and neck, showing the facial artery. The diagram is labeled with '4' and '1 Facial artery'. To the right of the diagram are two photographs of a patient's face. The top photograph shows a white arrow pointing to the chin area with the text 'Slipped to buccal'. The bottom photograph shows bruising on the chin and neck area.

Prevents slipping.

A diagram illustrating the correct use of a luxator or elevator instrument. The diagram shows a hand holding the instrument and applying it to the teeth. Below the diagram is the text 'Prevents slipping.'. To the right of the diagram are two photographs of a patient's face, showing bruising on the chin and neck area.



Four Osteotomy Methods With Piezosurgery to Remove Complicated Mandibular Third Molars: A Retrospective Study

Jing Ge, MD, PhD,* Chi Yang, MD, PhD,† Jia-Wei Zeng, PhD,‡ Dong-Mei He, MD,§
Ling-Yan Zeng, MD,|| and Ying-Kai Hu, MS¶


J. Oral Maxillofac Surg.
Volume 72, Issue 11,
November 2014,
Pages 2126–2133.

A



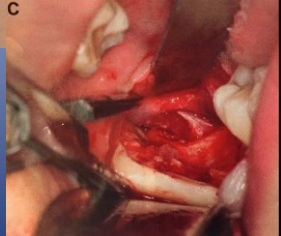
An intraoperative photograph showing a surgical site in the lower jaw. A piezosurgery handpiece is being used to perform an osteotomy on a mandibular third molar. The surgical field is exposed, and the bone is being cut.

B



An intraoperative photograph showing a surgical site in the lower jaw. A piezosurgery handpiece is being used to perform an osteotomy on a mandibular third molar. The surgical field is exposed, and the bone is being cut.

C



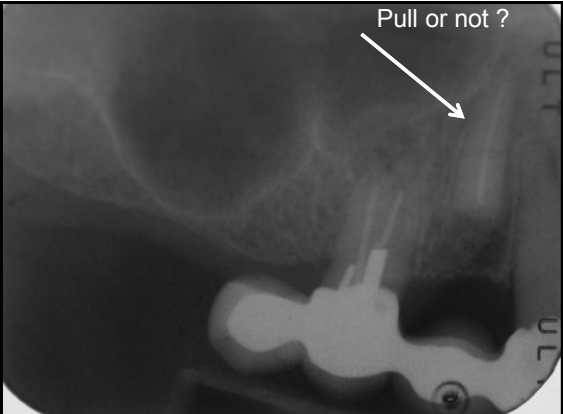
An intraoperative photograph showing a surgical site in the lower jaw. A piezosurgery handpiece is being used to perform an osteotomy on a mandibular third molar. The surgical field is exposed, and the bone is being cut.

Is it malpractice to leave a root?



A cone beam CT scan showing a mandibular third molar. A white arrow points to the root of the tooth, which appears to be partially embedded in the bone. The question asks if it is malpractice to leave this root in place.

Pull or not ?



A cone beam CT scan showing a mandibular third molar. A white arrow points to the root of the tooth, which appears to be partially embedded in the bone. The question asks if it is malpractice to leave this root in place.



Not malpractice 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.

