


Avoiding or Managing Exodontia Complications, **PM**

By using the most efficient techniques, you avoid and manage complications.



1

Check List for Exodontia

- CHIEF COMPLAINT
- MEDICAL CONDITIONS
 - Physical appearance, mouth general health (good or bad)
 - Age, Medical history review, meds being taken
 - Recreational drugs
 - Vital signs (esp. HR, HTN, O2 sat), Functional capacity (flights of stairs)
 - Diabetes (blood glucose or A1c)
 - ASA Classification (healthy, health conditions controlled?)
- EMOTIONAL STATUS (need sedation – nitrous, oral, IV). Referral?
- DEGREE OF DIFFICULTY FOR ME (the operator)
- DIAGNOSIS
- TREATMENT PLAN


Additional:
 BLS Certified
 Emergency Kit
 AED
 Oxygen E-tank with +pressure O2 or ambubag
 Team training for emergencies.

2

| Class | Description | Example |
|-------|--|---|
| I | The patient was previously healthy and fit | Healthy, non-smoking, no or minimal alcohol use |
| II | The patient has mild systemic controlled disease | Mild diseases only without substantive functional limitations. Examples include (but not limited to): current smoker, social alcohol drinker, pregnancy, obesity (30 < BMI < 40), well-controlled DM/HTN, mild lung disease |

OK to accept as patients:
ASA 1 or 2


ASA



3

| | | | |
|-----|--|--|------------------|
| III | The patient has severe but not incapacitating systemic disease | Substantive functional limitations; one or more moderate to severe diseases. Examples include (but not limited to): poorly controlled DM or HTN, COPD, morbid obesity (BMI ≥40), active hepatitis, alcohol dependence or abuse, implanted pacemaker, moderate reduction of ejection fraction, ESRD undergoing regularly scheduled dialysis, history (>3 months) of MI, CVA, TIA, or CAD/stents | Be more careful. |
| IV | The patient has incapacitating systemic disease | Examples include (but not limited to): recent (< 3 months) MI, CVA, TIA, or CAD/stents ongoing cardiac ischemia or severe valve dysfunction, severe reduction of ejection fraction, sepsis, DIC, ARD or ESRD not undergoing regularly scheduled dialysis | |
| V | The patient is moribund and not expected to survive 24 hours | Examples include (but not limited to): ruptured abdominal/thoracic aneurysm, massive trauma, intracranial bleed with mass effect, ischemic bowel in the face of significant cardiac pathology or multiple organ/system dysfunction | |

4



Kit with

- Some 3cc syringes with 1 inch needle.
- Ampules of 1/1000 epi
- EpiPen or Auvi-Q or equivalent
- Emergency albuterol inhaler for asthma
- Glucose gel/juice for low blood sugar
- Ampules of diphenhydramine (Benedryl)
- 25 mg tablets of Benedryl
- Aspirin
- Nitroglycerine tabs or spray
- CPR face shield

Monitor for BP, pulse, and O2 saturation.

Able to check blood glucose.

Oxygen tank, Positive pressure oxygen mask or ambubag

5

Case Selection. Do I want to do these cases?



6

Uncontrolled Type 2 diabetic (Do you even have a glucometer?)

Undiagnosed Type 1 diabetic.

severe asthma, inhaled allergens, as well as intrinsic factors such as fear or anxiety.

HTN systolic 159, went to 183 during treatment. Caused by?

Anemic, oxygen saturation dropped to 55 during treatment. (Do you have a pulse oximeter?)

On drugs. Reaction with epinephrine?

Uncontrolled bleeding. Didn't reveal Plavix.

Evaluate the risks.

Stock photos from Shutterstock.

7

Apps to consider: (You and staff)

- Dental Drugs (Free)**
- Lexicomp (Cost) or Epocrates (Free version)**
Drug interactions, drug information
- ADSA's "10 Minutes Saves a Life!" (Free)**

8

Search results for **Antibiotics** showing **Metronidazole** selected.

Metronidazole

Indications: Dental infections, dental abscess, prophylaxis

Select drug strength (2 available): **500 mg**

Dose: 500 mg

Disp: 21 tablets

Instructions: Take 1 tablet 3 times per day for 7 days

Precautions: Warn patient that Metronidazole can interact with alcohol.

Notes/Hints: 200-500 mg 3 or 4 times/day for 8-14 days. Max dose: 4g/24 hours

9

Contraindicated
Avoid for breast feeding women

Avoid for pregnant women!
FDA category D-Human Studies demonstrate a risk.

Renal Precaution
There might be a need for caution or need for dose adjustment for patients with renal problems.

Hepatic Precaution
There might be a need for caution or need for dose adjustment for patients with hepatic problems.

10

Anesthetics

Intermediate Duration

- Articaine 4% (1:100,000 Epinephrine)
- Articaine 4% (1:200,000 Epinephrine)
- Lidocaine 2% (1:50,000 Epinephrine)
- Lidocaine 2% (1:200,000 Epinephrine)
- Mepivacaine HCL 2% (1:200,000 Levonordefrine)
- Prilocaine 4%** (1:200,000 Epinephrine)

Short Duration

- Mepivacaine HCL 3% Plain
- Prilocaine 4%** Plain

Long Duration

- Bupivacaine 0.5% (1:200,000 Epinephrine)

Prilocaine 4%

Cartridge: 1.8 ml | 2.2 ml | ADA Color Code: Prilocaine 4% Plain

Patient Weight: 165

Maximum recommended Cartridges: **5.6 cartridge(s) (of volume 1.8ml) for a 165 pounds patient.**

Total maximum dose: 400mg

Total mg/cartridge: 72mg

Estimated duration

| | Pulpal | Soft Tissue |
|------------------------|-----------------|-------------------|
| Maxillary Infiltration | 20 min (0.3 hr) | 105 min (1.75 hr) |
| Mandibular Block | 55 min (0.9 hr) | 190 min (3.2 hr) |

Anesthetic Brand Names:
- Citanest® Plain - Dentsply

11

Prilocaine 4% Plain

Patient Weight: **165**

Estimate

Maximum recommended Cartridges: 5.6 cartridge(s) (of volume 1.8ml) for a 165 pounds patient.

Total maximum dose: 400mg

Total mg/cartridge: 72mg

| | Pulpal | Soft Tissue |
|------------------------|-----------------|-------------------|
| Estimated duration | | |
| Maxillary Infiltration | 20 min (0.3 hr) | 105 min (1.75 hr) |


12

Dentist denies overmedicating boy who died
 By Kristina Davis
 The Arizona Republic

A dentist who treated a 4-year-old boy who died of a lidocaine overdose testified Friday that he administered only 100 milligrams of the drug, even though a toxicology report found nearly twice that amount in the boy's system.

It was the first time dental profession publicly about the events leading up to the death last Dec.

The dentist testified during a three-hour informal hearing in Phoenix before an Arizona State Board of Dental Examiners panel, which voted unanimously to charge him with unprofessional conduct and failure to maintain adequate records. The entire board now will convene



2 mg/lb., 40 lbs.
 80 mg max dose
 36 mg/cart.

Injected over 200.
 (About 5.5+ cartridges.)

13

| Estimated duration | Pulpal | Soft Tissue |
|------------------------|-----------------|------------------|
| Maxillary Infiltration | 60 min (1.0 hr) | 170 min (2.8 hr) |
| Mandibular Block | 85 min (1.4 hr) | 190 min (3.2 hr) |

Anesthetic Brand Names:
 - Xylocaine - Dentsply Pharmaceutical
 - Lignospan Standard® - Septodont
 - Lidocaine HCL 2% with Epinephrine 1:100,000 - Cook Waite (Carestream), Hospira

* As a safe rule, 1 anesthetic cartridge is given for each 20 pounds of patient's weight

4:39 7

Anesthetics Lidocaine 2%

Weight Unit: lb kg

Cartridge: 1.8 ml 2.2 ml ADA Color Code

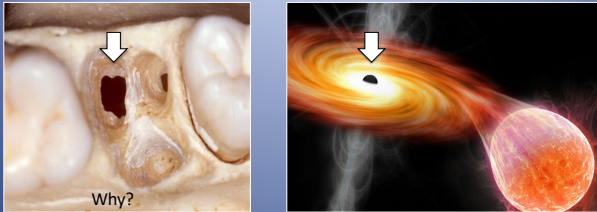
Patient Weight: 40 Estimate

Maximum recommended Cartridges: 2.2 cartridge(s) (of volume 1.8ml) for a 40 pounds patient.

Initial maximum dose: 80mg
 Total max cartridge: 36mg

14

MANAGING PROBLEMS WITH THE MAXILLARY SINUS



BLACK HOLES

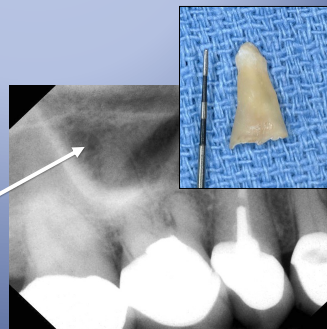
15

Work to Prevent Sinus Perforations

- Prevent buccal plate fracture
- Cut crown off (if present) THEN section between roots
- Careful with sectioning depth
- Use skinny bur/Luxator system
- Watch for lack of "apical stop" at root apices
- Avoid apical pressure on single roots if necessary
- "U" shape skinny bur trough around MB root if necessary
- M-D troughing of palatal root if necessary (unusually long)

16


The Maxillary Sinus



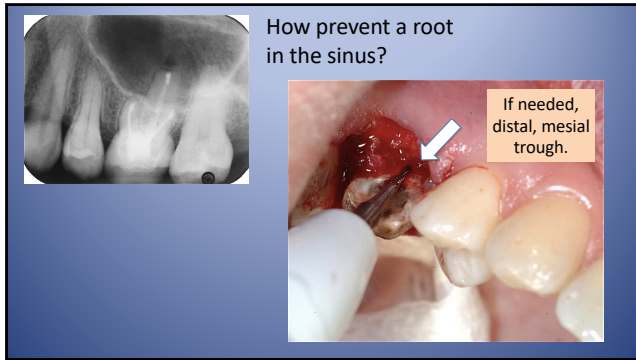
Dr. Karl Koerner

17

Very nice case, everything looks very clean and planned. That is exactly what I would do, from the semilunar incision, to the p.o. meds. It is nice that it is a denture case, so you probably won't have problems with the sinus opening.



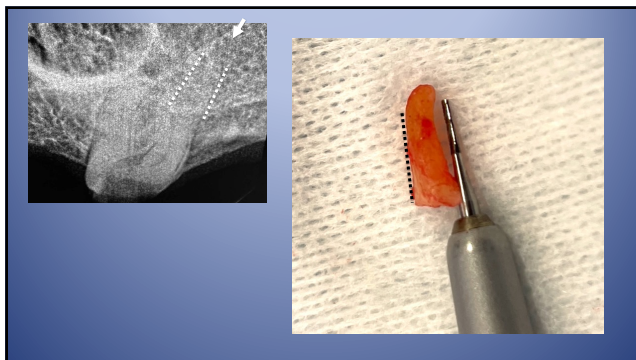
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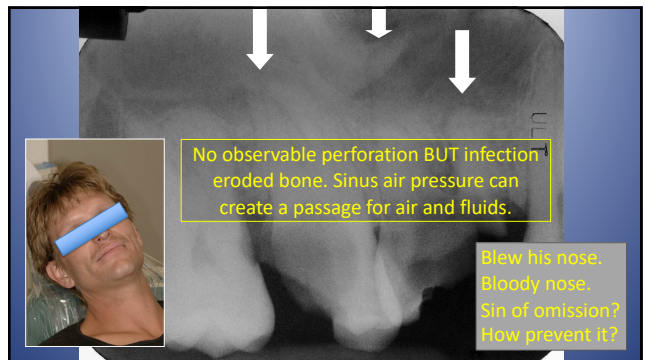
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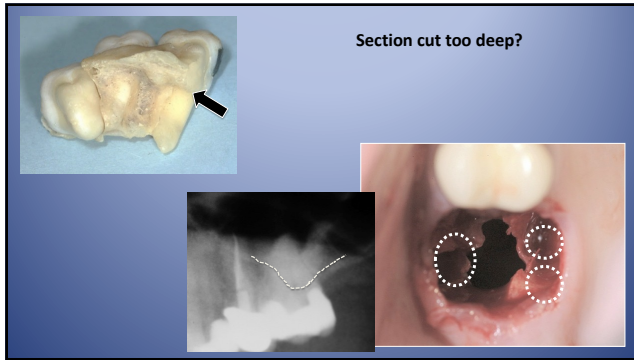
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23

How sectioning maxillary molars can cause a sinus perforation.

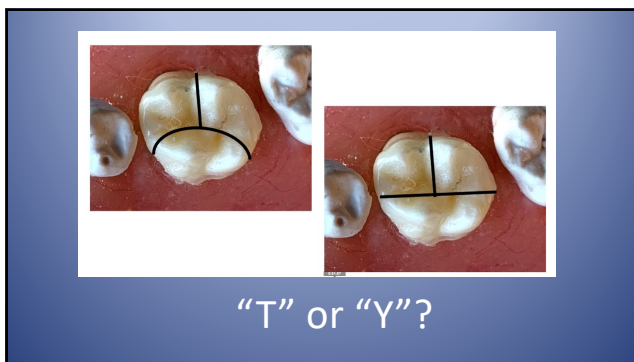
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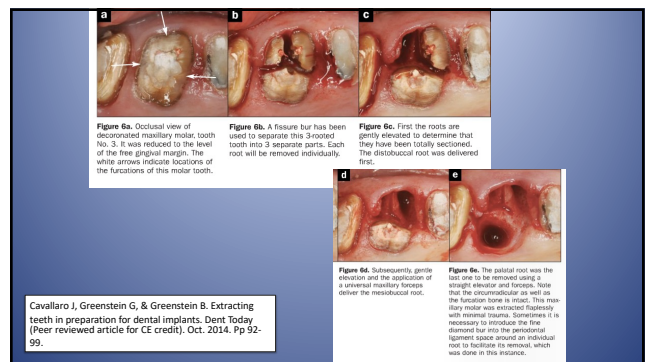
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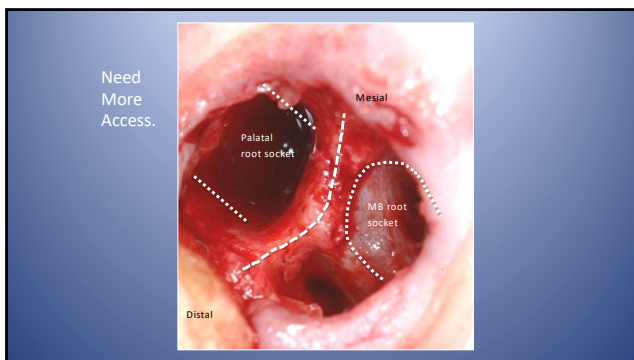
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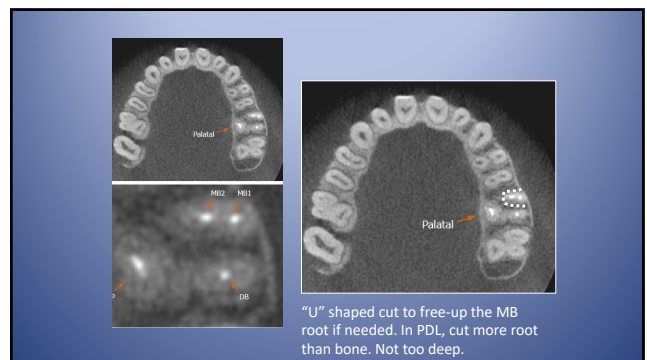
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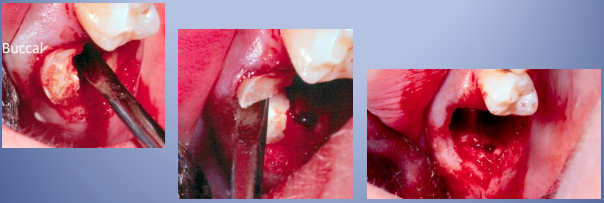
Upper molars: If crown present, why to remove it.

Occlusal to furcation: 13 mm
 Gumline to furcation: 7 mm


After luxating with elevator and forcep, section off the crown.
 Section between the roots.
 "Work the roots against each other".
 Then take out one root at a time.



31

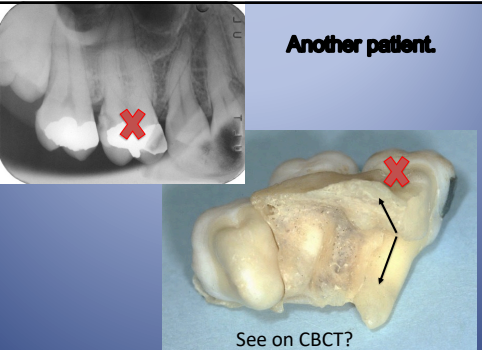


**T cut (or Y).... Both work.
 Both are half right.**



32

Another patient.



See on CBCT?

33

TAKING THE MYSTERY OUT OF
 SECTIONING MAXILLARY FIRST MOLARS:


DR. KARL KOERNER

Oral Surgery
 Education

34



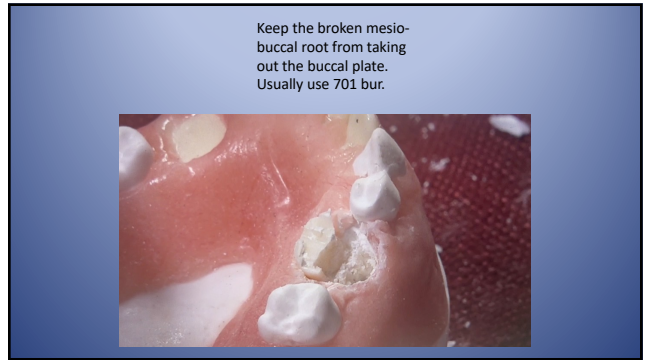
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36



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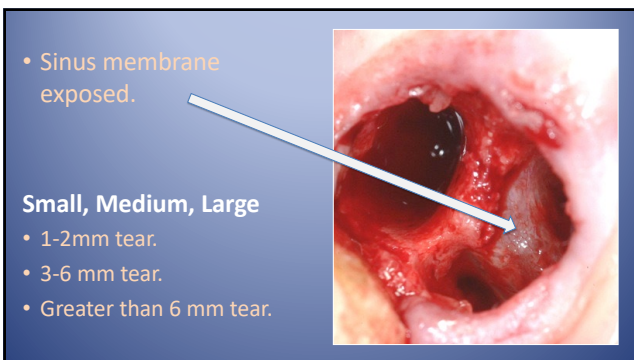
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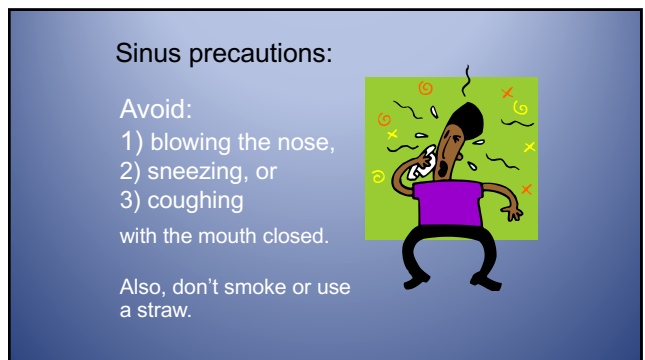
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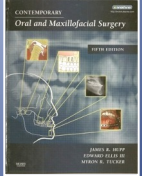
Medications (for 7-10 days):

- Antibiotic
 - Example: **Amoxicillin 875 mg, bid**
- Oral decongestant:
 - Examples: **Sudafed 120 mg** sustained release, bid
 - Claritin D (alternative)

43

Gauge treatment according to the size of the opening:

- If 2 mm or less: no further treatment
 - than precautions and medications
- If 2-6 mm:
 - figure eight suture over socket
 - collagen plug could be placed in the socket
 - try to get better closure
- If over 6 mm: **get primary closure**
- With a chronic sinus condition, get primary closure regardless of size of opening.



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

44



Recommendations:

- If perforation suspected, don't enlarge probe, or irrigate.
- Less than 2 mm: suture to support clot, sinus precautions.
- 3-6 mm: Gelfoam, figure 8 suture, sinus precautions.
- Over 6 mm: tension-free primary closure.

Lam D and Laskin D. Oral and maxillofacial surgery review: A study guide. Quintessence Publishing, 2015.

45

Hedstrom File for Root Control


46

Application of Endodontic Files for the Extraction of Root Tips: A Biomechanical Investigation and Case Study

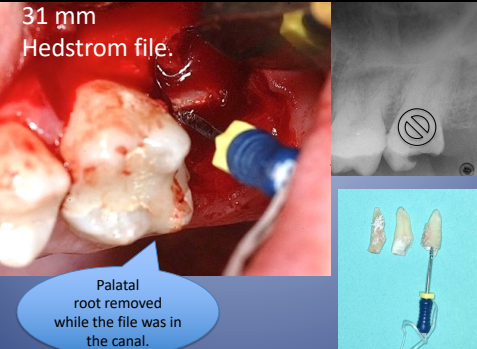
Junliang Chen, MDS,* Yun He, MDS,† Qin Pan, BMSc,‡ and Minhai Nie, DDS§

- Conclusion: The results of this study suggest that the application of endodontic files for the extraction of root tips is an acceptable technique. The size 25 Hedstrom file is the optimum choice for root extraction in most cases when using endodontic files.

Chen, Junliang, et al. Application of endodontic files for the extraction of root tips: a biomechanical investigation and case study. J Oral Maxillofac Surg. 74:2345-2350, 2016.



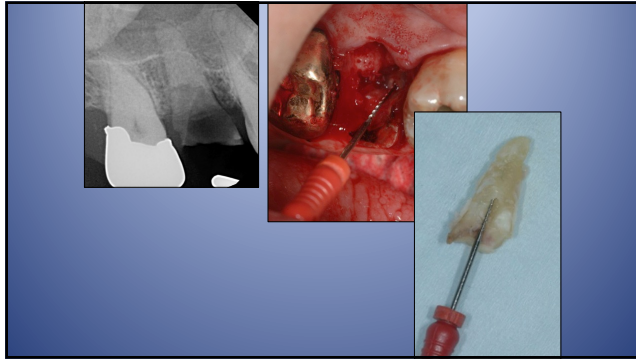
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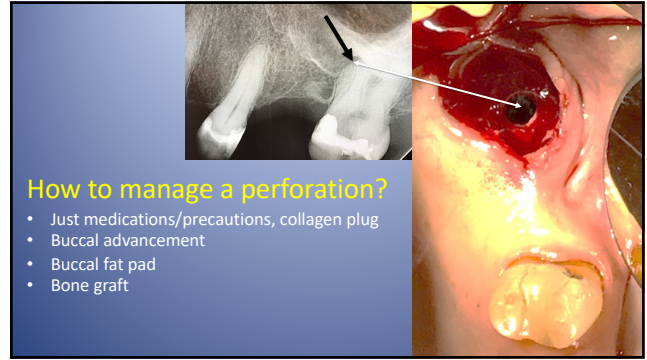
31 mm Hedstrom file.

Palatal root removed while the file was in the canal.

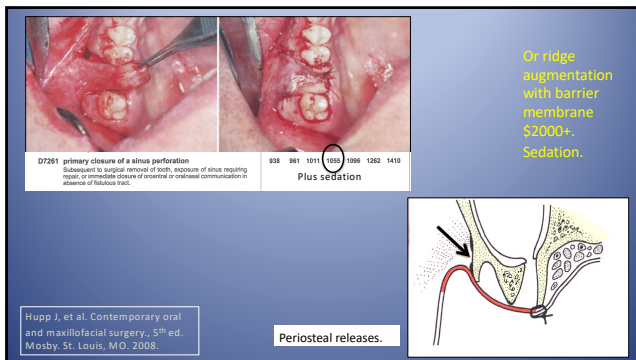
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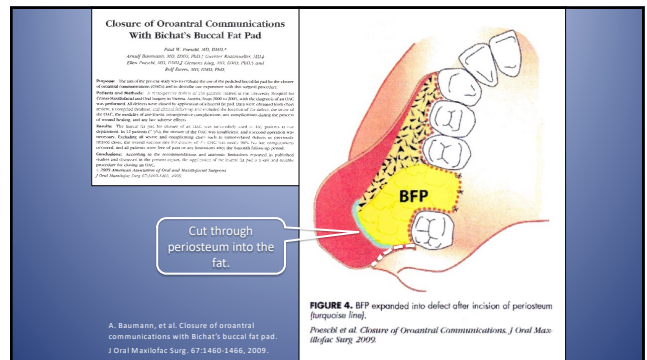
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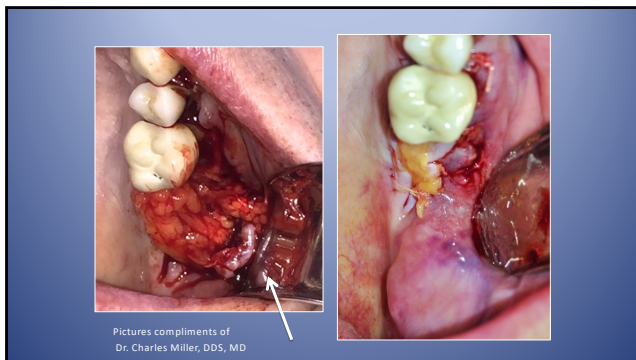
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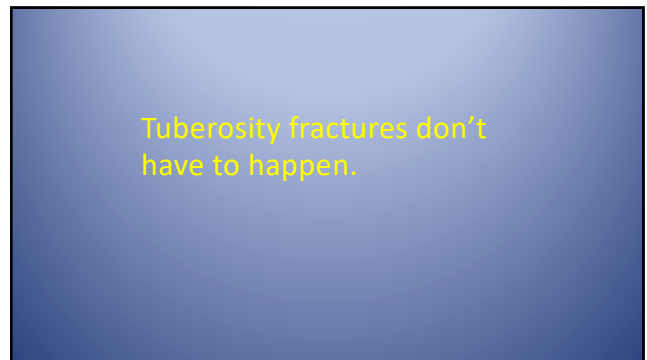
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52



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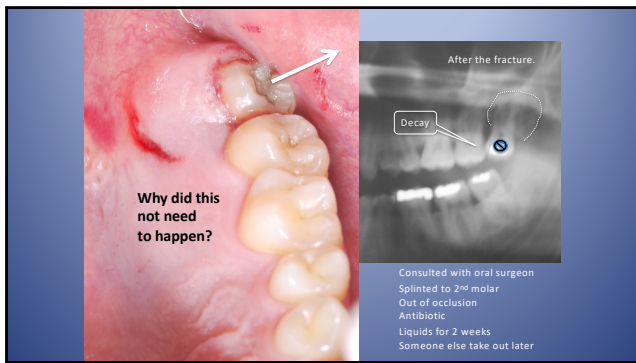
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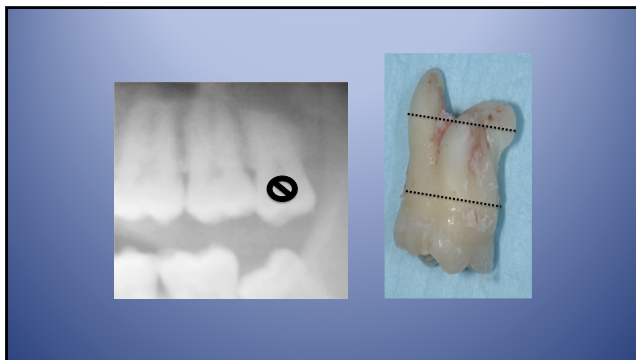
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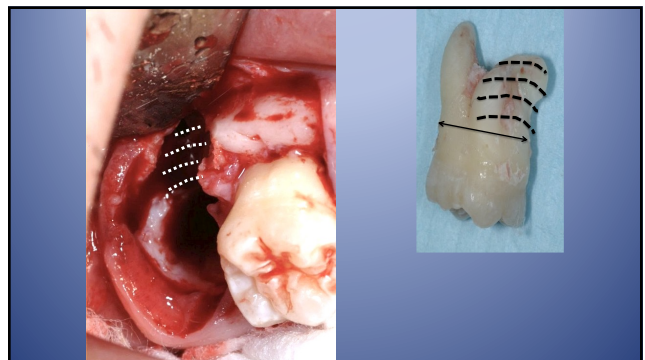
57

Preventing
tuberosity fractures
that could open up
into the SINUS.

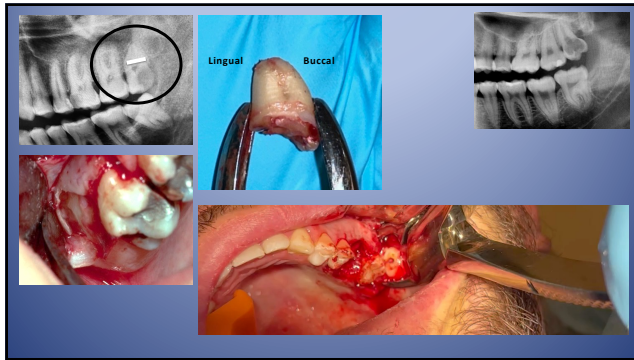
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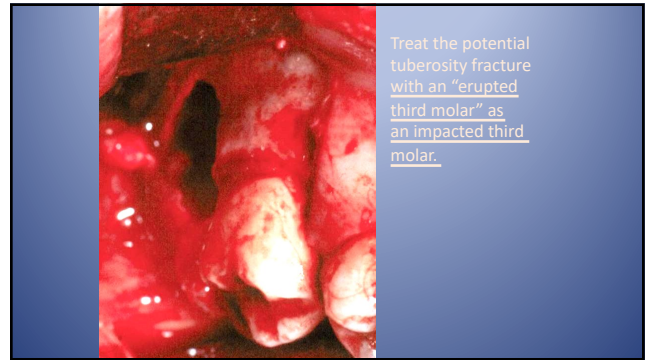
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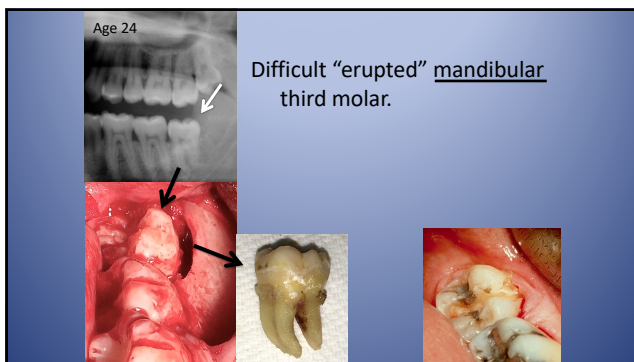
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61



62



63



64