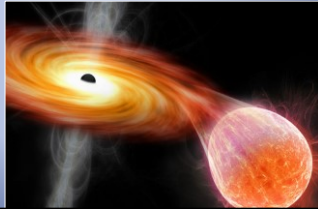
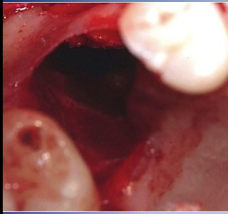


## Extractions and the Sinus

Dentistry's Black Hole.



## Detecting a sinus perforation.

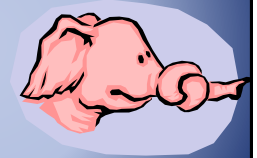
How to know when you have a small perforation?

Need:

- Adequate light (headlight preferred)
- Small suction tip (2 mm diameter)
- Carefully use the nose-blowing test

With a suspected sinus perforation:

- Don't poke into it !
- "Nose blowing" test:
  - have patient pinch the nose and blow "softly"



Sinus precautions:

Avoid:

- 1) blowing the nose,
- 2) sneezing, or
- 3) coughing

with the mouth closed.



Also, don't smoke or use a straw.

Medications (for 7-10 days):

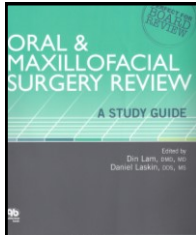
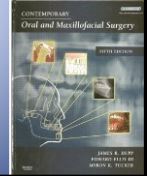
- Antibiotic
  - Example: Amoxicillin 875 mg, bid
- Oral decongestant:
  - Examples: Sudafed 120 mg sustained release, bid
  - Claritin D (alternative)

# Treatment based on the size of the sinus perforation.

## Gauge treatment according to the size of the opening:

- If 2 mm or less: no further treatment  
– than precautions and medications
- If 2-5 mm:  
– figure eight suture over socket  
– collagen plug could be placed in the socket  
– try to get better closure
- If over 5 mm: get primary closure

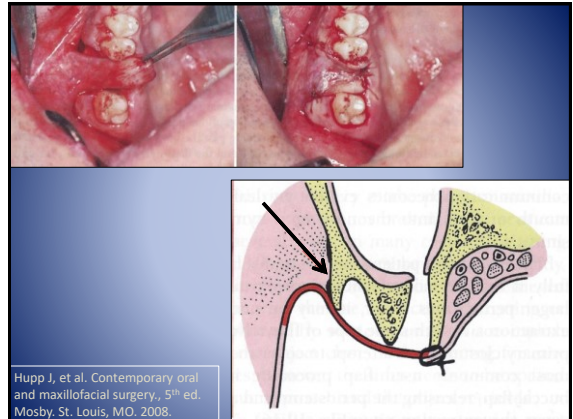
Hupp J, et al. Contemporary oral and maxillofacial surgery, 5<sup>th</sup> ed. Mosby, St. Louis, MO, 2008.



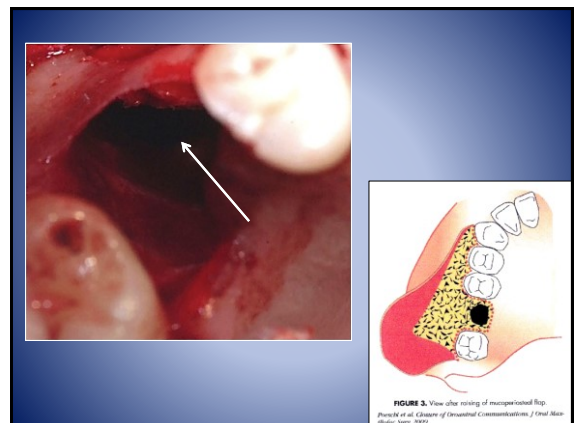
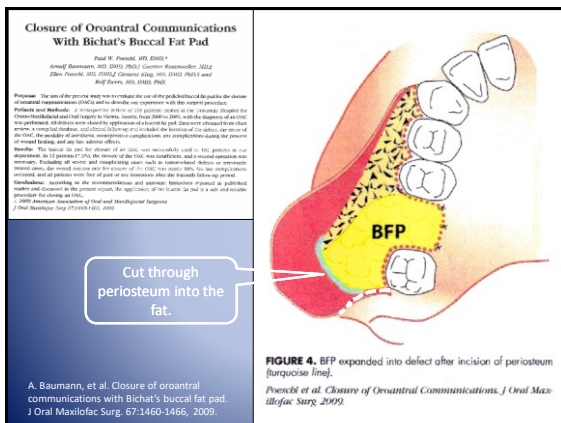
## Recommendations:

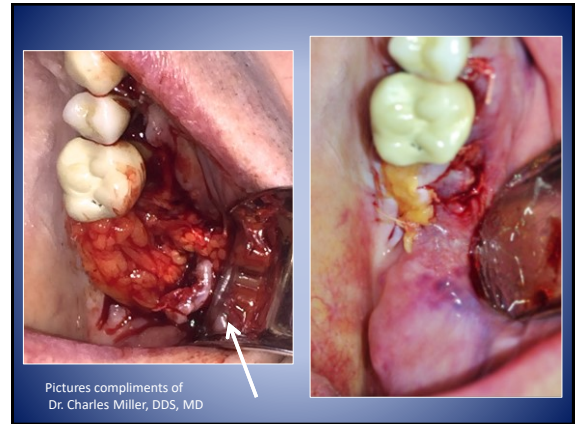
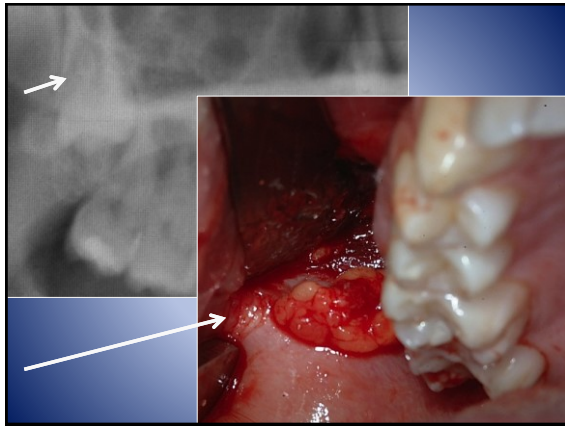
- If perforation suspected, don't enlarge probe, or irrigate.
- Less than 2 mm: suture to support clot, sinus precautions.
- 3-6 mm: Gelfoam, figure 8 suture, sinus precautions.
- Over 6 mm: tension-free primary closure.

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

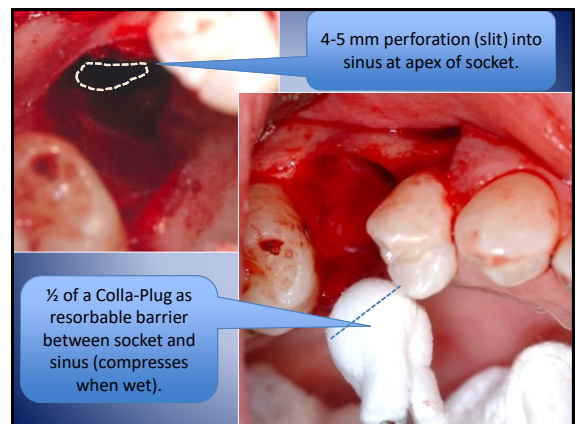
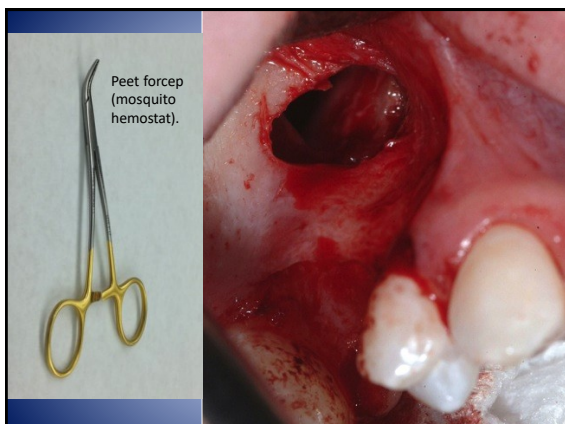


Hupp J, et al. Contemporary oral and maxillofacial surgery, 5<sup>th</sup> ed. Mosby, St. Louis, MO, 2008.

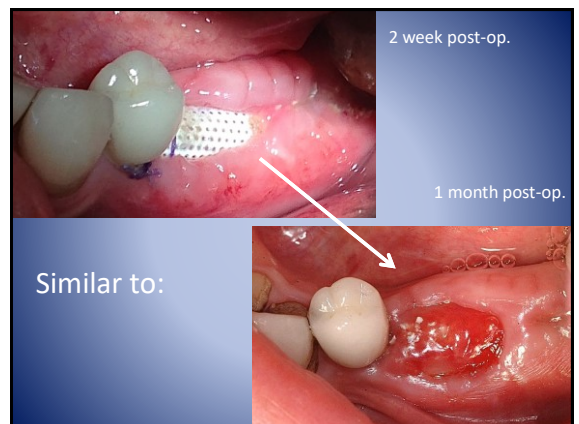
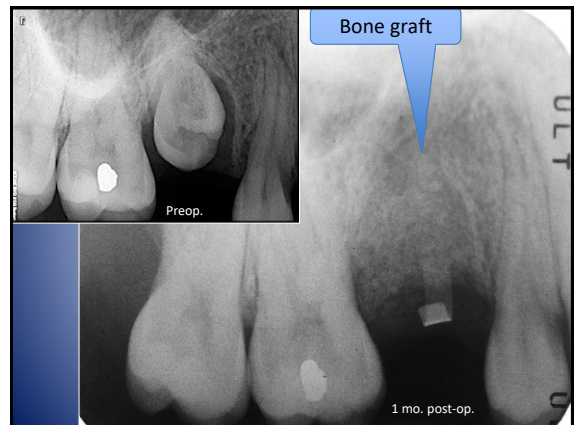
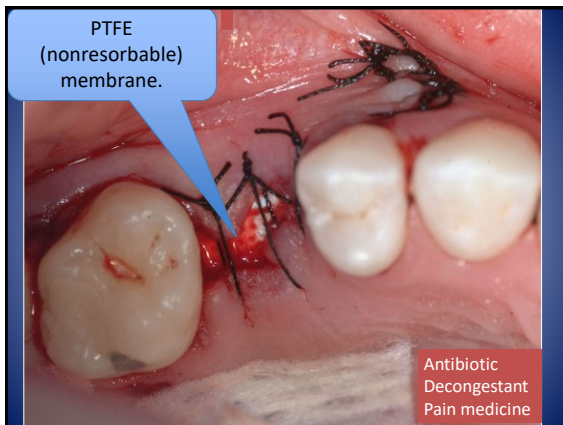
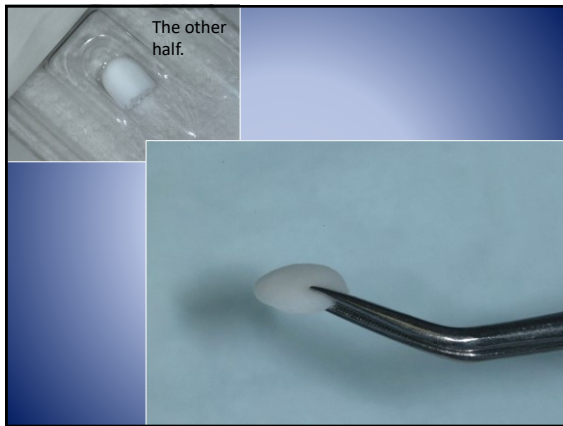


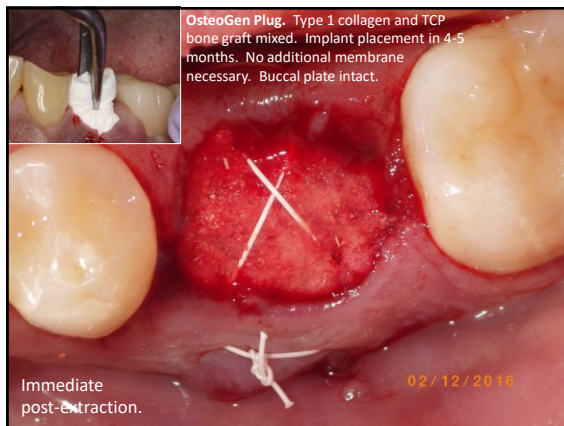


## Sinus closure with bone grafting.



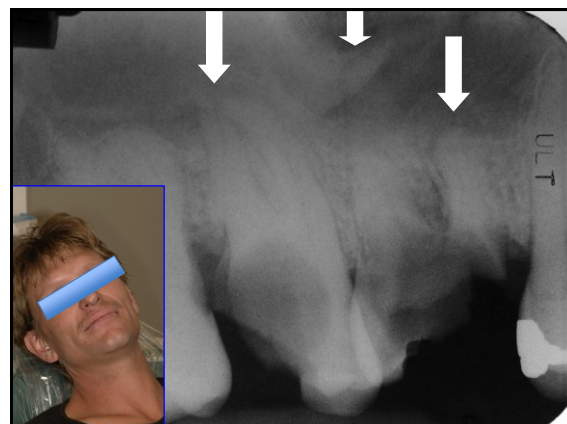
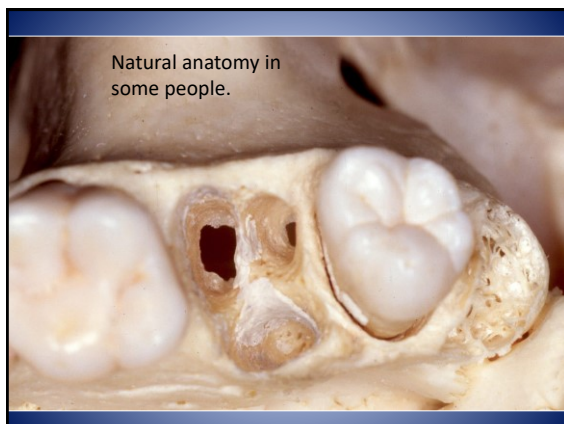
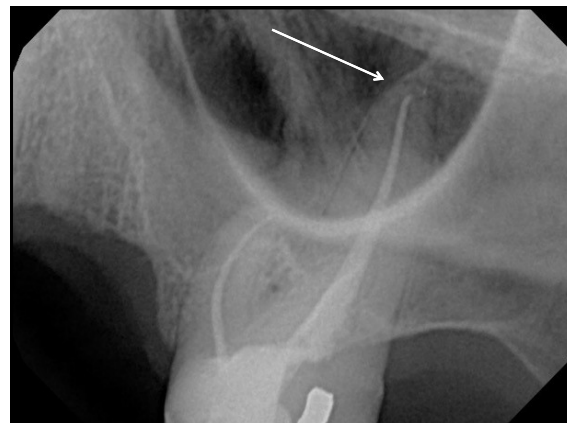
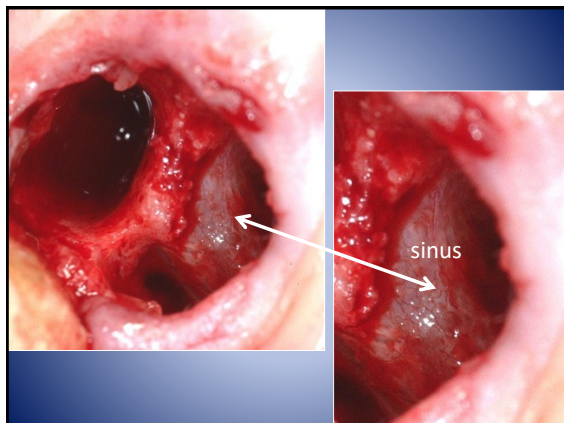






Avoiding problems  
when a sinus  
“membrane” is  
exposed.

GAP



Five day post-op. Patient careful. No apparent communication.



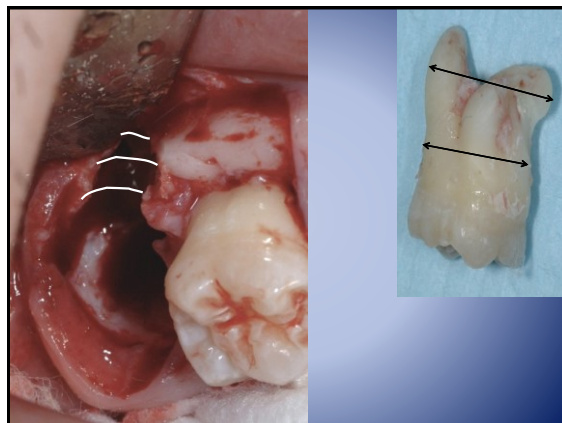
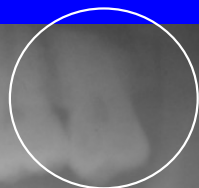
Preventing  
tuberosity fractures  
that could open up  
into the SINUS.

GAP

Erupted maxillary third molar.



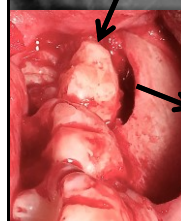
If not loose after  
5 minutes...



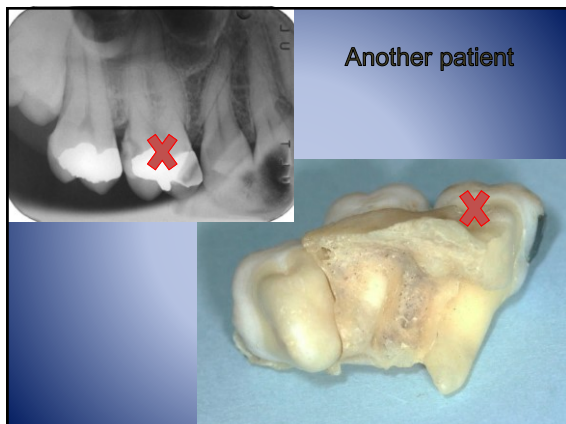
Age 24

Difficult "erupted" mandibular  
third molar.

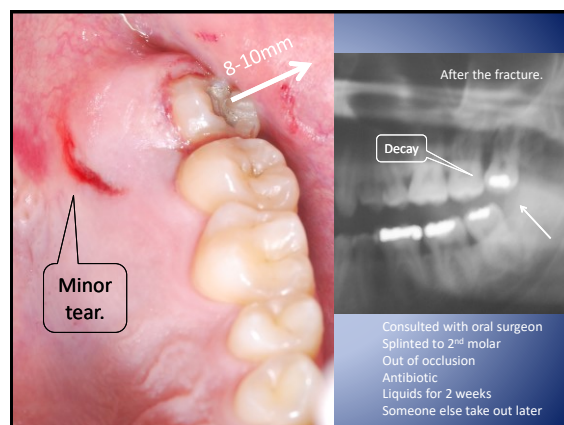
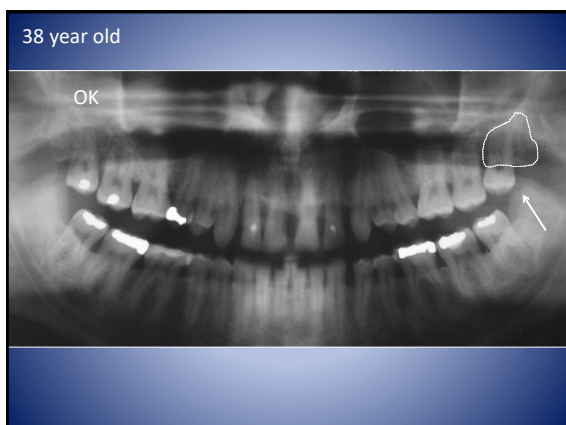
- Reflect soft tissue
  - envelope or triangular flap
- Elevator
- Forcep (usually cowhorn, 151, or 222)
  - Section (unless anticipate difficulty)
    - Remove halves separately
- OR trough
  - Elevator, forcep
  - Remove whole, or
  - Section and remove halves separately



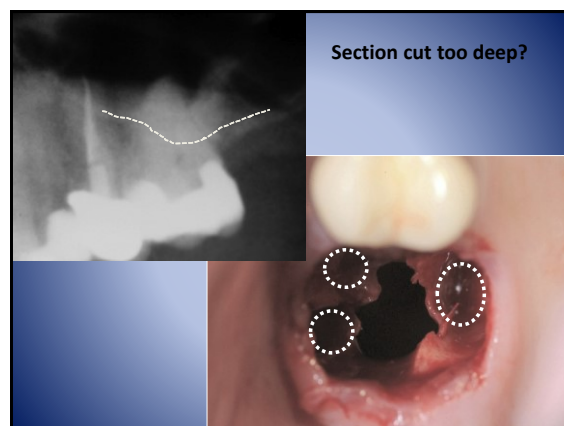




So, you fractured  
the tuberosity –  
now what?



How sectioning  
maxillary molars  
can cause a sinus  
perforation.

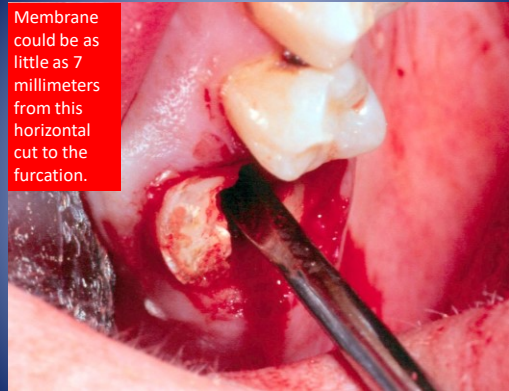


Cavallaro J, Greenstein G, & Greenstein B. Extracting teeth in preparation for dental implants. Dent Today (Peer reviewed article for CE credit). Oct. 2014. Pp 92-99.

**Table 2. Furcation Location Relative to the Cemento-Enamel Junction<sup>13</sup>**

TOOTH	FURCA LOCATION	DISTANCE TO CEJ
Maxillary First Molar	Buccal	4 mm
	Mesial	4 to 5 mm
	Distal	5 to 6 mm
Maxillary Second Molar	Buccal	6 mm
	Mesial and Distal	> 6 mm
Mandibular First and Second Molar	Buccal	3 mm
	Lingual	4 mm

Membrane could be as little as 7 millimeters from this horizontal cut to the furcation.



Avoiding roots going into the sinus.

GAP

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

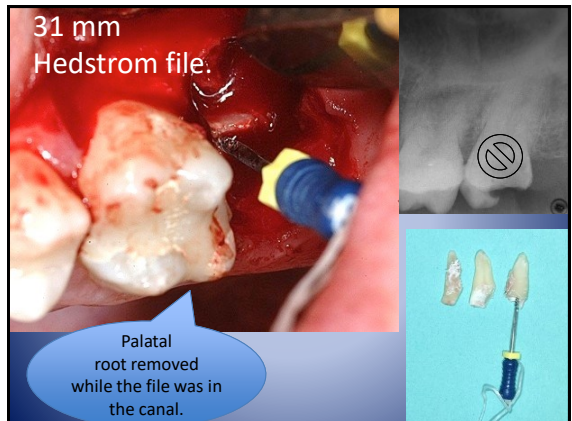
Junliang Chen, MDS,\* Yun He, MDS,† Qin Pan, BMSc,‡ and Minhai Nie, DDS§

- 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.

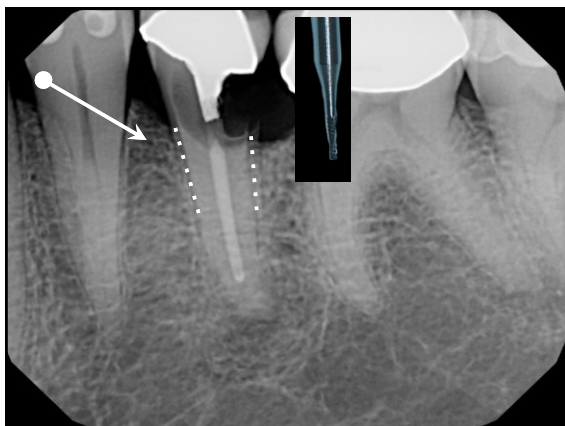
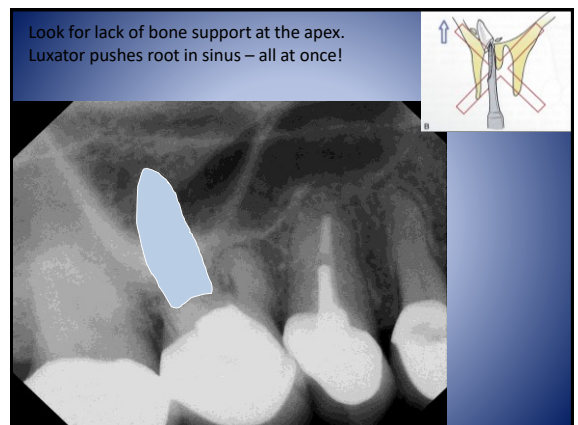
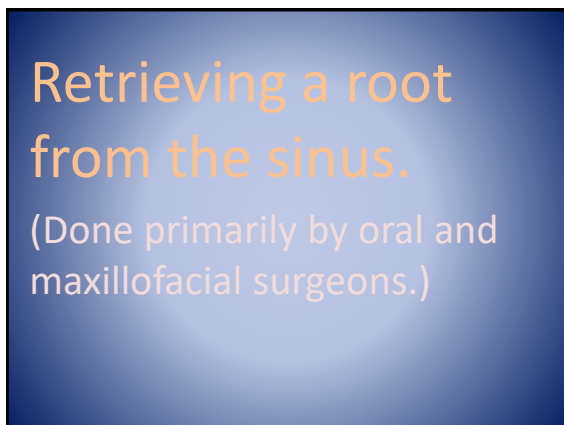
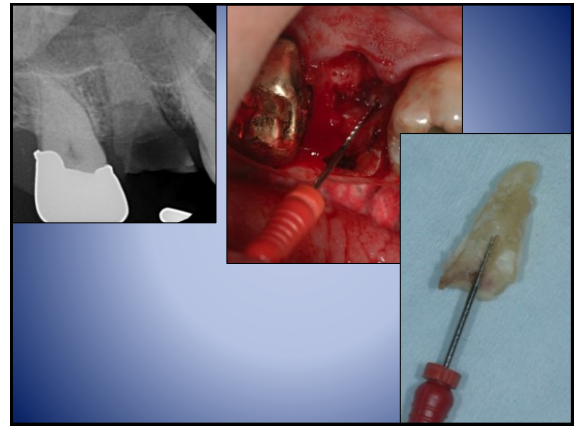


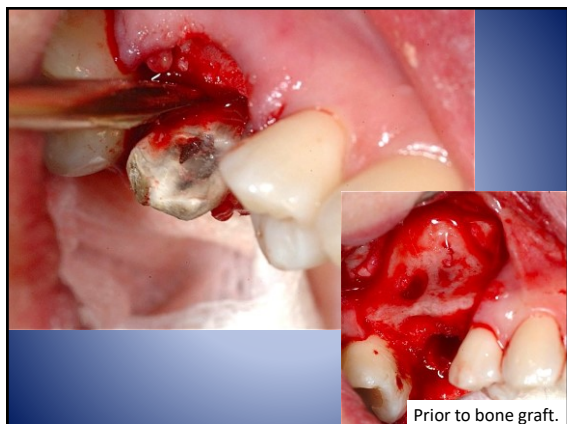
31 mm Hedstrom file.



Palatal root removed while the file was in the canal.







### Molar Section Cuts

#### Mandibular 1<sup>st</sup> molar

Buccal

#### Maxillary 1<sup>st</sup> molar

Buccal

- Cut made with 702 bur – only the width of the bur
- Cuts to 0.5mm from side of tooth
- Arrows show where 1<sup>st</sup> molar trifurcations are\*
- Maxillary molar: complete D-M cut with elevator before commencing buccal cut
- Maxillary molar: look for sinus pneumatization – don't cut too deep

\*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.

