

# The Maxillary Sinus and Tooth Extractions

## Extractions and the Maxillary Sinus

- Is there a sinus perforation and how big is it?
  - Treatment is according to size.
- What is the treatment?
- What if you see the membrane but it is not perforated? What risk does it present?
- What do you do if you fracture the maxillary tuberosity? Can it impact the sinus?
  - How to not fracture the tuberosity?
- Can you tear the sinus membrane by sectioning an upper molar? Yes. How to prevent it?

## Extractions and the Maxillary Sinus

- How do you keep broken roots from entering the sinus (or from slipping under the membrane)?
- Can a C-PAP machine cause a sinus perforation?
- If you cause a sinus perforation, how much will it cost for an oral surgeon to repair it?
- Can a sinus perforation be repaired with socket bone grafting.

## Detecting a sinus perforation.

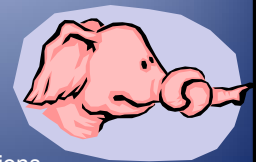
### How to know when you have a small perforation?

#### 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"



- Implement sinus precautions.

## Sinus precautions and medications.

### Sinus precautions:

Avoid:

- 1) blowing the nose,
- 2) vigorous 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

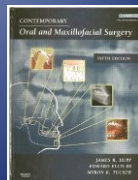


## Treatment based on the size of the sinus perforation.

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

- If 2 mm or less: no further treatment \*
- If 2-5 mm:
  - figure eight suture over socket \*
- If over 5 mm: get primary closure

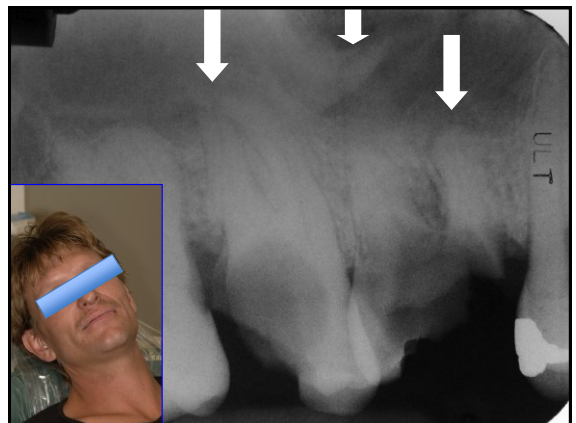
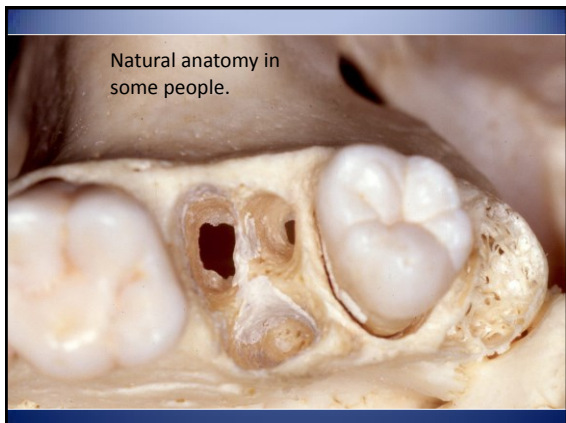
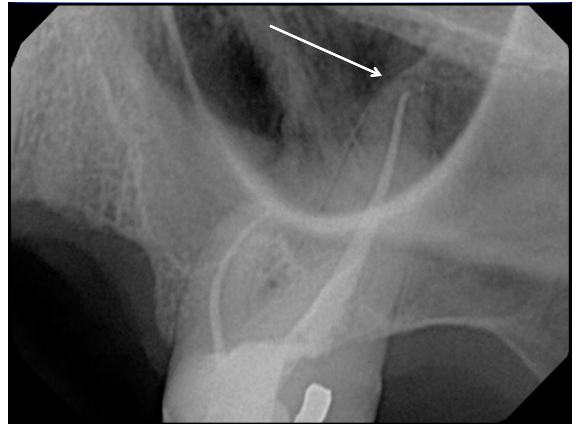
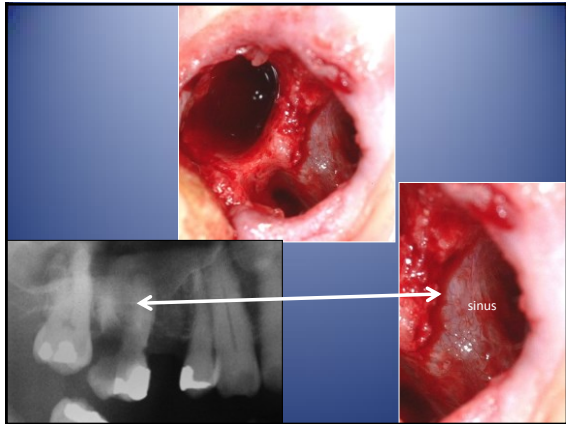
\*place gauze over the socket for 1-2 hours. With a chronic sinus condition, get primary closure regardless of size of opening. Dr. Koerner: Collagen plug could be placed in the socket.




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

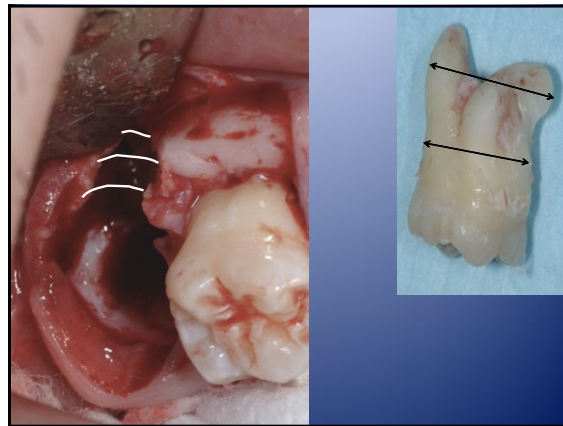
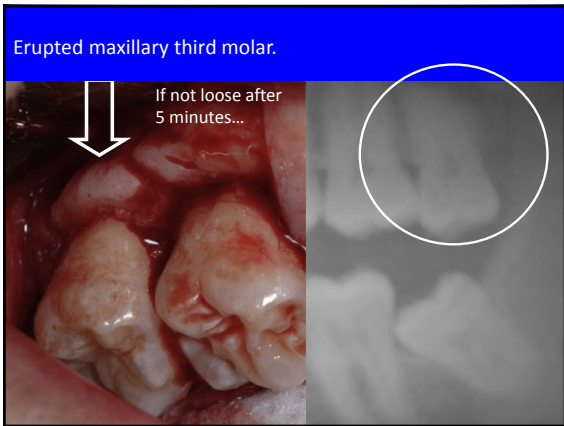
## Avoiding problems when a sinus “membrane” is exposed.



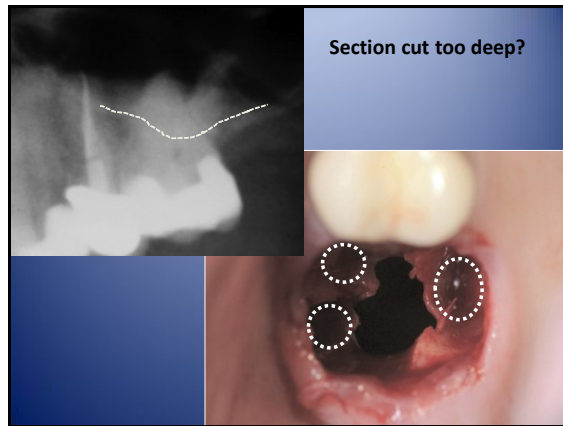


Preventing tuberosity fractures that could open up into the SINUS.





How sectioning maxillary molars can cause a sinus perforation.




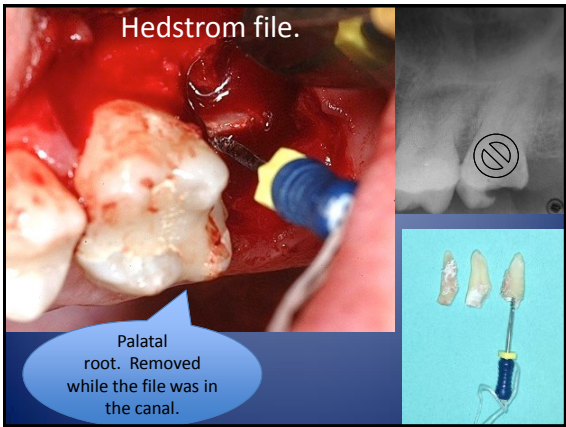
Cavallaro J, Greenstein G, & Greenstein B. Extracting teeth in preparation for dental implants. Dent Today (Peer reviewed article for CE credit). Oct. 2014. Pp 92-99.

**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



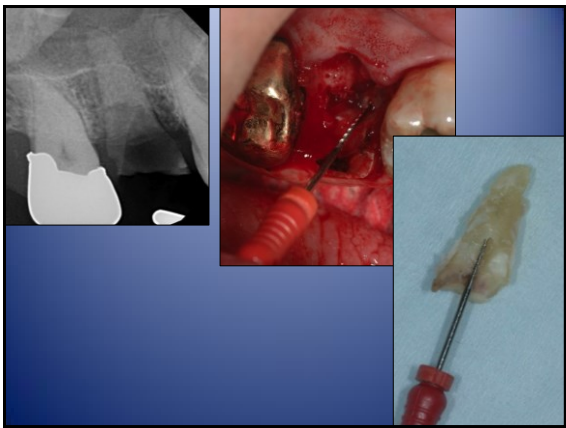
Avoiding roots going into the sinus.

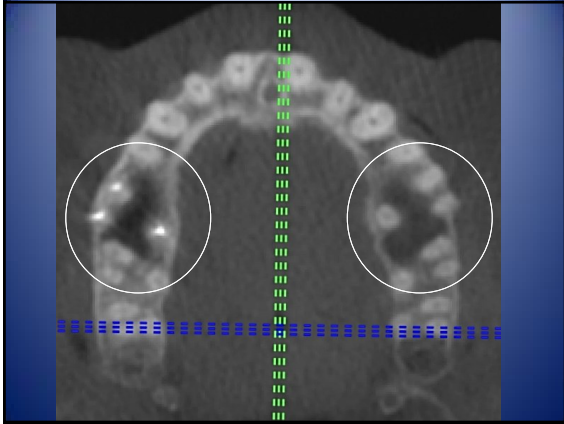
30 mm

Root Tip Retrieval File


- Insert the file in the broken root
- Carefully luxate the root
- Apply traction on the file when the root starts to loosen.

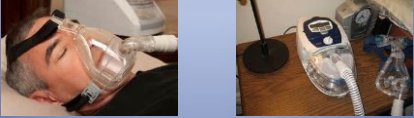






Risk with post-op sinus perforations with C-PAP machines...

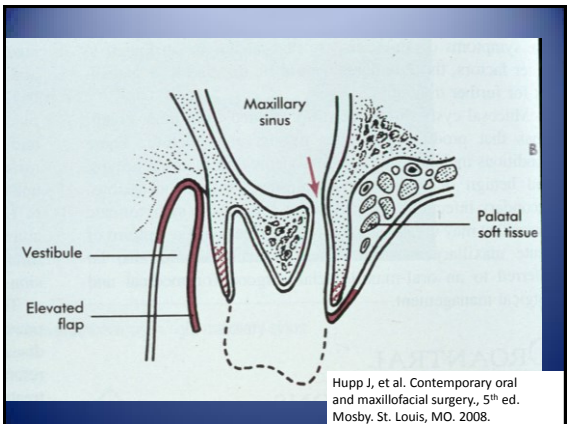


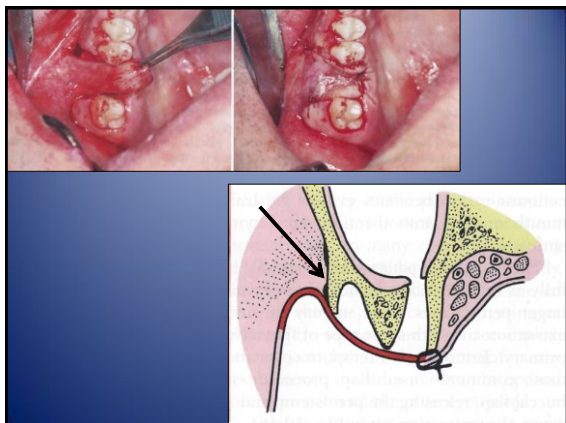
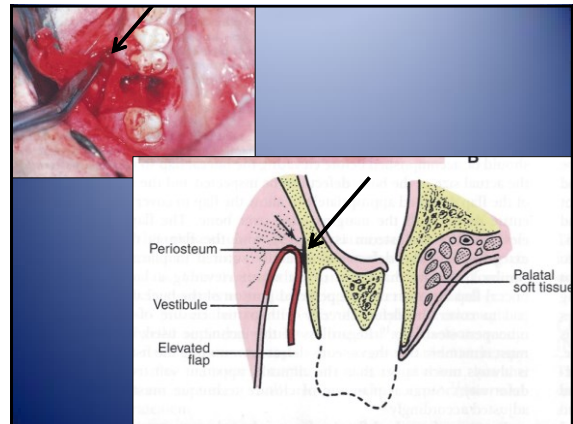
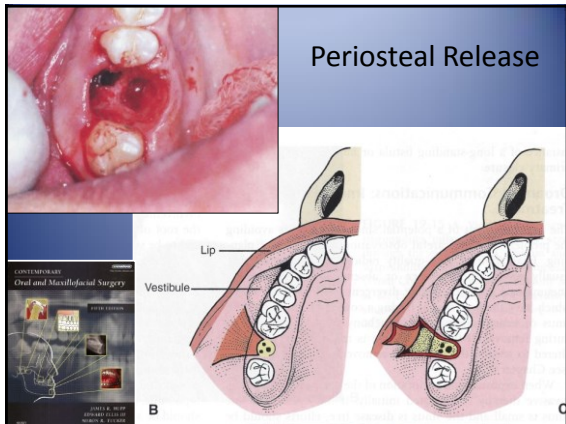


Dentist in Nebraska: Maxillary 1<sup>st</sup> molar extraction. Saw sinus membrane in palatal root socket. (no perforation). Next day: 3 mm perforation and fluids passing between nose and mouth.

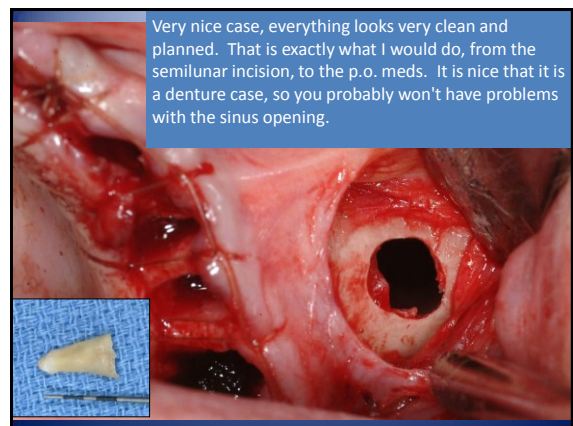
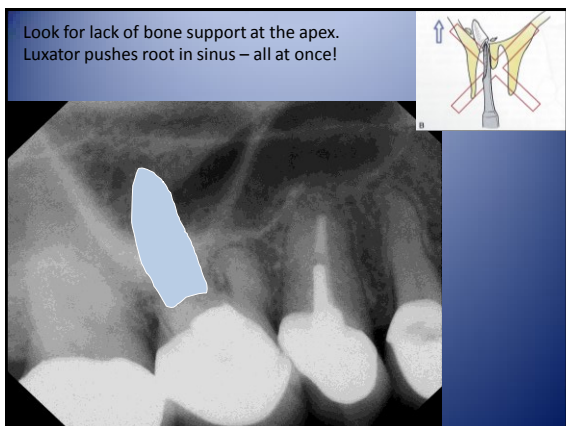
Don't use C-PAP machine during sinus healing if possible or lower the pressure  
 Otherwise may need:  
 1) Buccal advancement flap.  
 2) Palatal pedicle flap.  
 3) Sandwich bone graft between two membranes (coronal and apex).

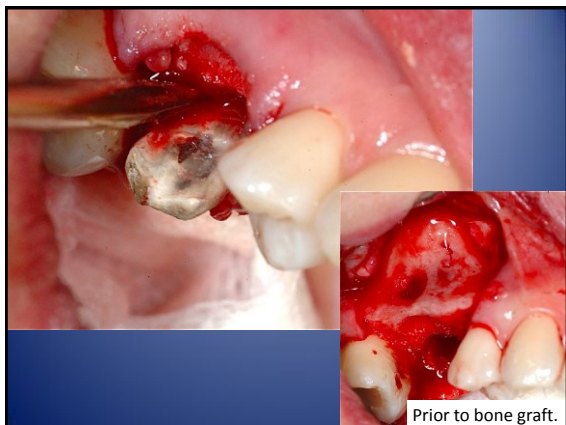
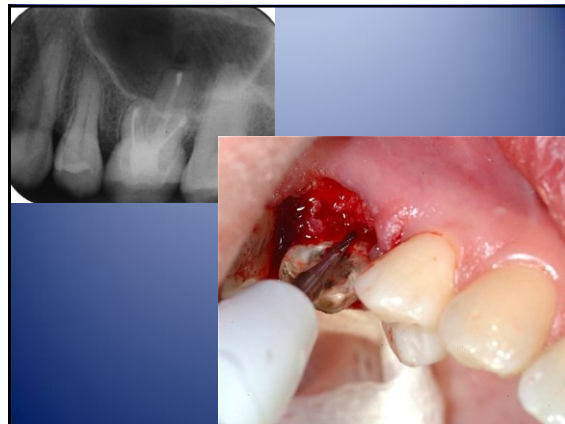
Sinus closure by an oral surgeon: "buccal advancement flap".



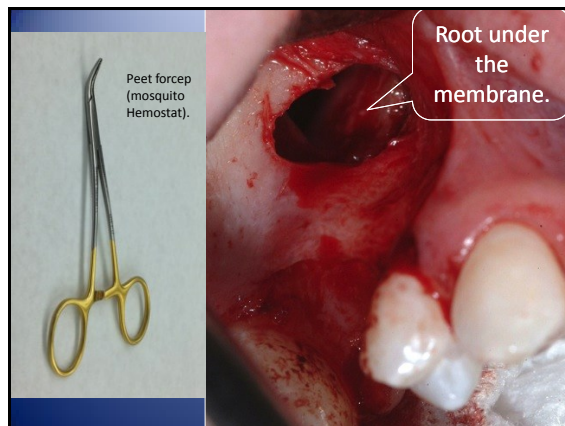


Retrieving a root from the sinus.  
 (Done primarily by oral and maxillofacial surgeons.)



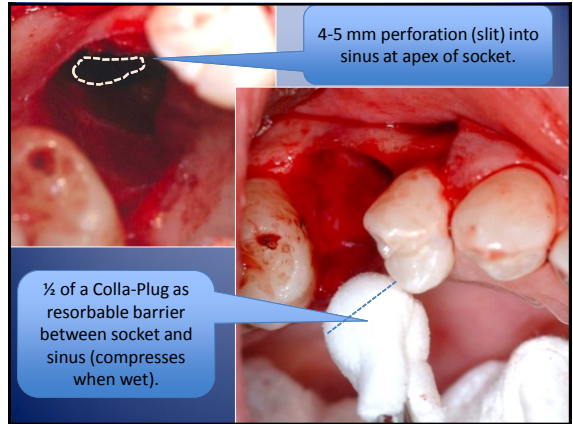
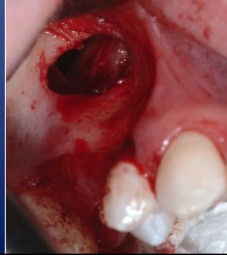


Sinus closure  
with bone  
grafting.



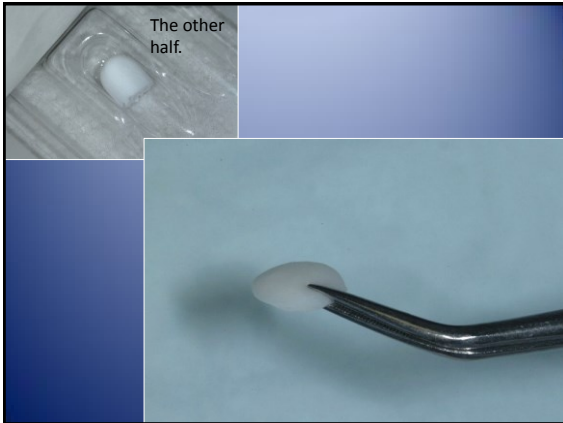


Reader: Be considering three other ways a socket perforation of the sinus membrane could have been avoided in this case. (To be revealed later.)

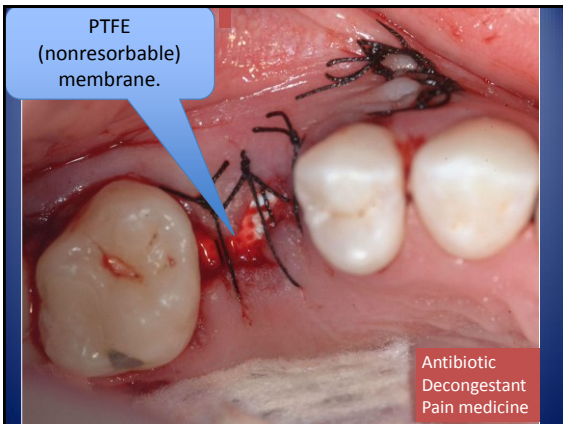


4-5 mm perforation (slit) into sinus at apex of socket.

½ of a Colla-Plug as resorbable barrier between socket and sinus (compresses when wet).

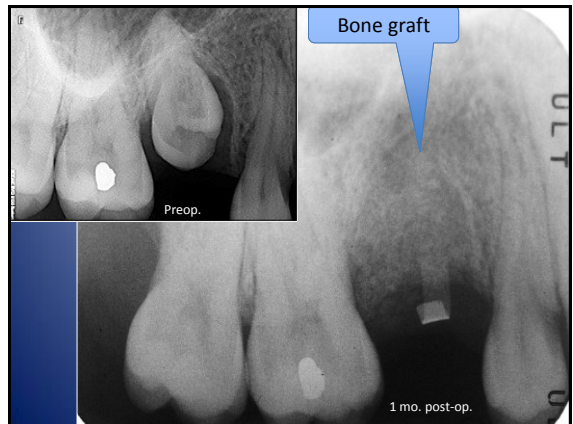


The other half.



PTFE (nonresorbable) membrane.

Antibiotic  
Decongestant  
Pain medicine

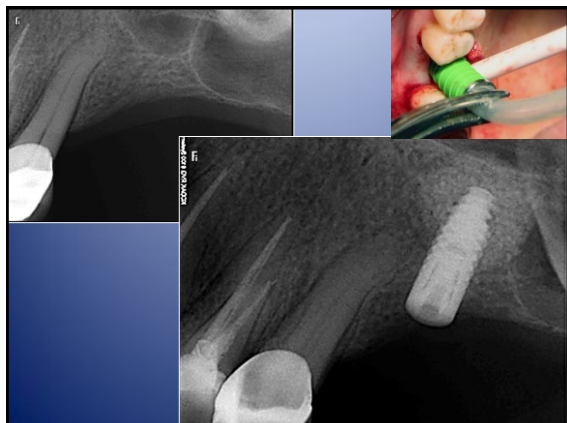


Bone graft

1 mo. post-op.



Example of a “crestal approach” sinus lift and implant placement.



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### Simplified Sinus Lift Surgery

**D**ental implants for edentulous areas of the mouth have become the standard of care in the United States, and the number of dentists, particularly general dentists, placing them is increasing. One challenging location for these implants, however, is the posterior maxilla. Even with adequate crestal bone width, implant placement may be limited by a lack of vertical bone height. In the past, surgical techniques to overcome this obstacle were daunting and the thought of approximating the maxillary sinus was out of the question for more conservative clinicians. With the development of new innovative surgical instrumentation and careful case selection, more dentists are now using new protocols and per-

**Figure 2a and 2b.** Crestal Approach Sinus Lift from Hissinen (2a). Rounded sinus drill with blue stopper. All drills in the kit are 1.3 mm long. This 9 mm stopper only allows 4 mm of cutting length to be utilized (2b).

Koerner KR and Chong D. Simplified sinus lift surgery. (peer reviewed for CE credit) Dent Today. Dec. 2013. Available online.



China Dental Humanitarian.





