

Guided Bone Regeneration/Osteotome Sinus Lift

**Osteotome sinus lift simultaneous with
implant placement**

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Osteotome Sinus Lift + Implant Placement

Case Presentation

Native sinus position noted (white line)

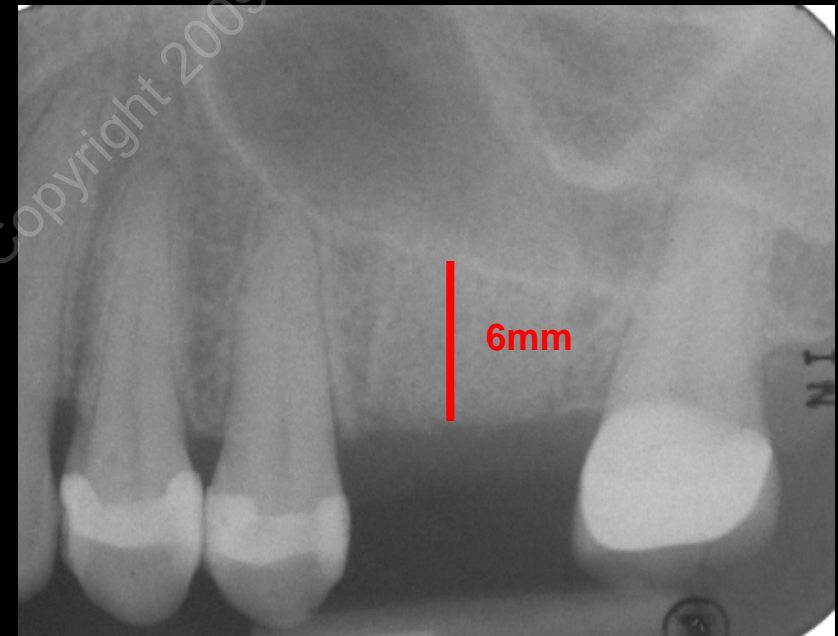


Initial X-ray: Infected #14 (red arrow)

Prognosis = Hopeless

Treatment is extraction + socket bone graft

**X-ray at 4 months post socket grafting
Note the limitation in bone height availability (red)**



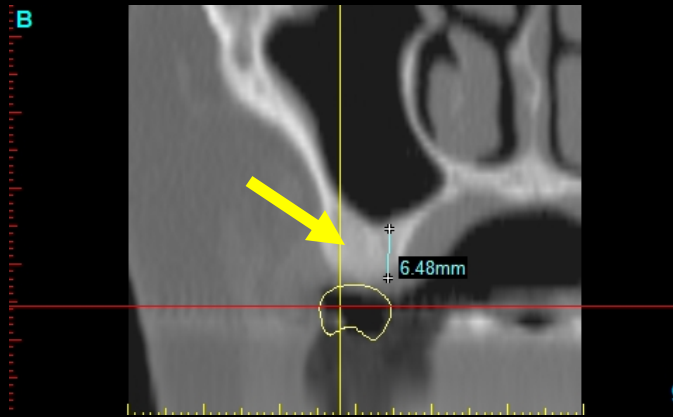
**4 months after extraction and
socket bone graft healing**

Missing tooth #14

Maxillary left first molar

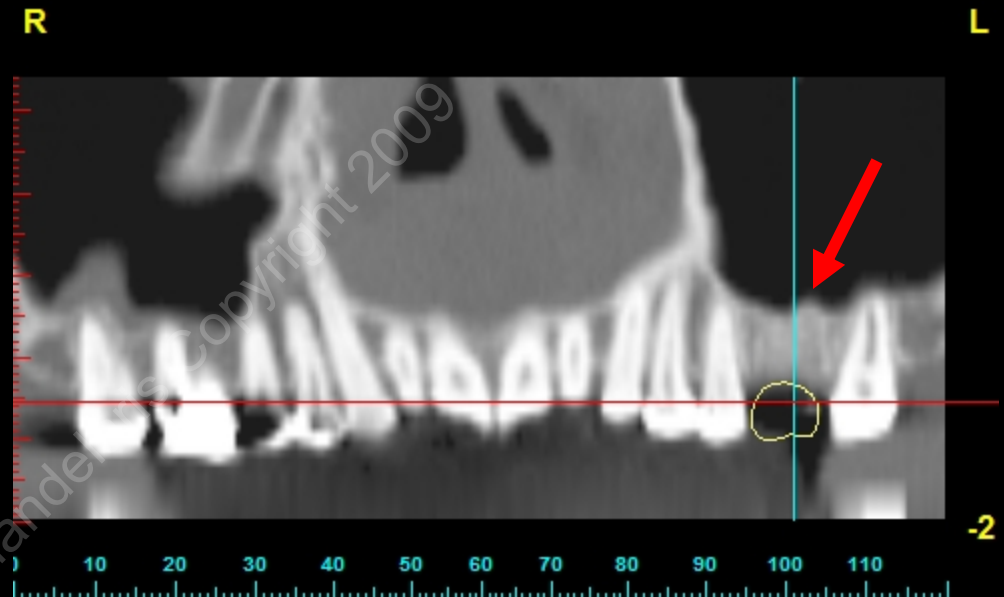
Bone graft has healed well

PreSurgical CT Scan Diagnostics



The cross sectional view of the proposed implant site demonstrates several features:

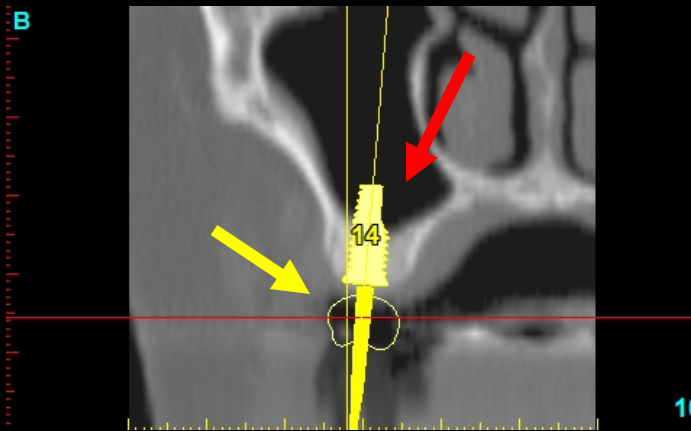
1. Socket bone graft healing has progressed very well. (yellow arrow)
2. There is only 6.5mm of vertical bone height available and at least 10mm is needed for implant placement to support a molar tooth. Vertical bone augmentation will be needed in order to place an implant.
3. There is no sinus pathology present.



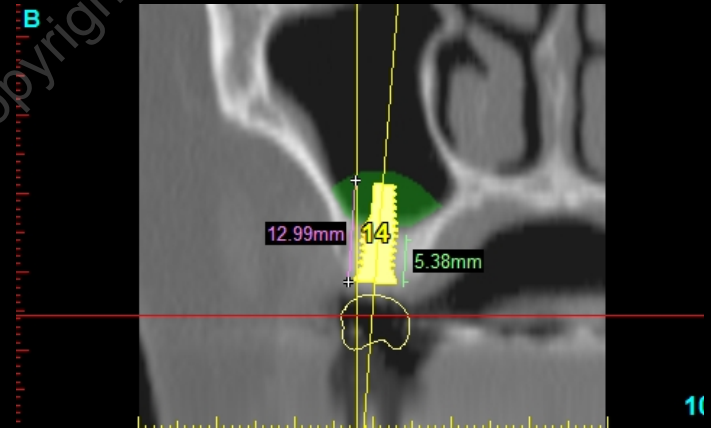
This panoramic view shows the socket bone graft healed at 4 months. Limited bone height is available to accommodate implant placement due to proximity of the maxillary sinus. (red arrow)

PreSurgical CT Scan Diagnostics

Cross sectional analysis of planned implant position



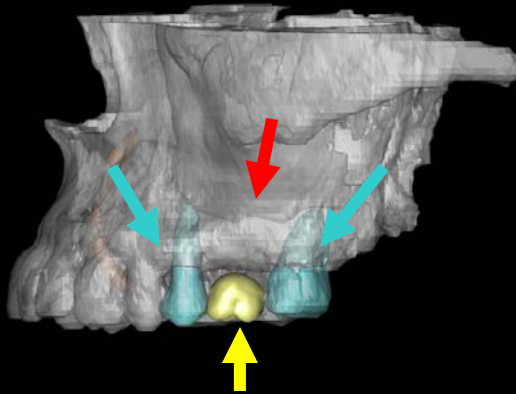
This cross section view simulates the implant position in the missing tooth position. The **yellow arrow** denotes the position of where the tooth is planned. The **red arrow** indicates that 50% of the implant would be in the patients maxillary sinus if bone grafting is not performed.



This cross section view simulates the implant position in the missing tooth position. The green volume within the sinus cavity simulates the bone graft that is needed in order to accommodate safe implant placement

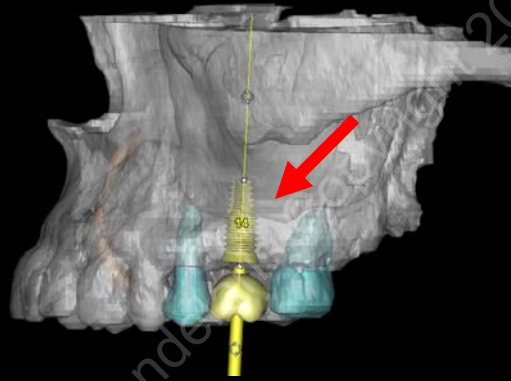
PreSurgical CT Scan Diagnostics

Cross sectional analysis of planned implant position



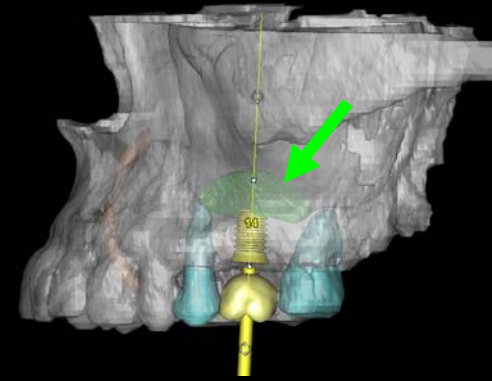
The picture above represents the 3D reconstruction of the maxillary jaw bone with a transparency toggled function turned on. The outline of the sinus is noted (red arrow) as well as the adjacent natural teeth (blue) and proposed implant tooth position (yellow) properly positioned to restore the natural bite for this patient's.

This 3D reconstruction demonstrates the virtual implant positioning without sinus bone grafting. Note the insufficient bone height to support the implant along its total length. (red arrow)



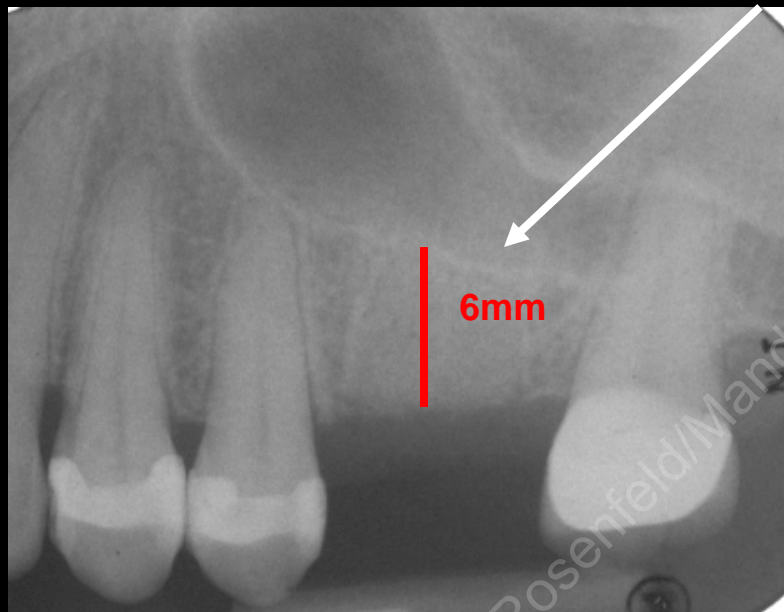
This 3D reconstruction simulates the virtual implant placement in conjunction with vertical bone augmentation in the form of a "sinus bone graft" (green arrow).

This ensures that the proper size and length implant is being positioned to support function and esthetics for this patient. Lastly, the bone graft ensures that the implant is supported in bone along its entire length which would not have been possible given the patient's original native bone volume.

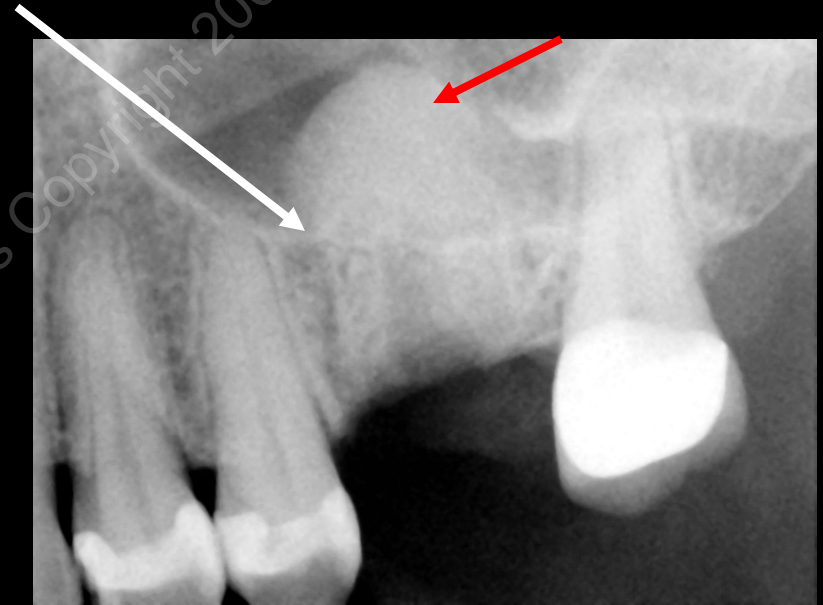


Osteotome Sinus Lift

Original sinus position
indicated by white line

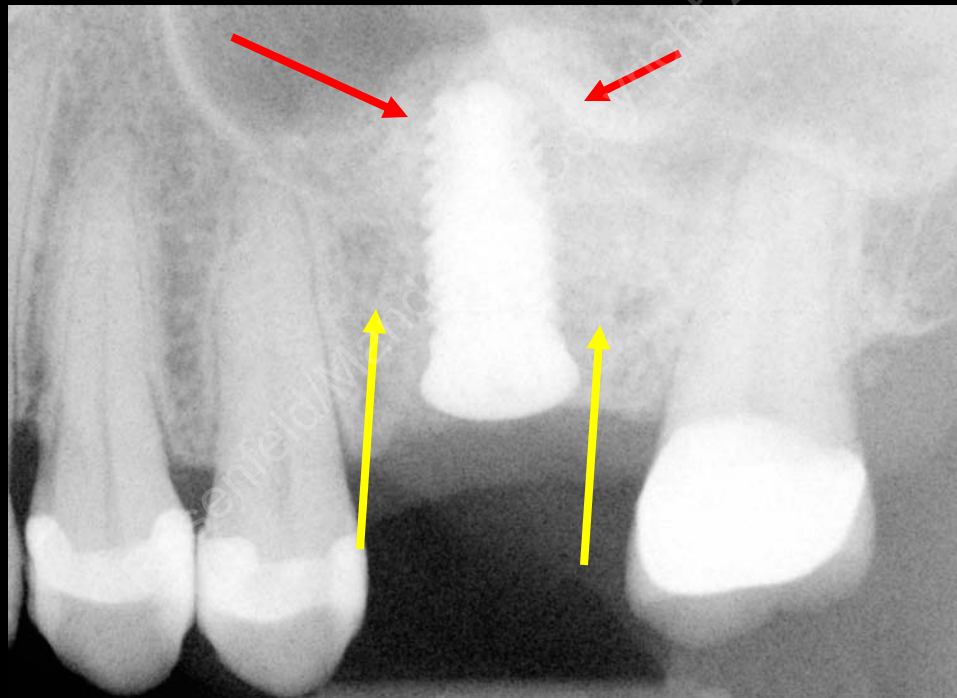


- X-ray at 4 months post socket grafting
- Note the limitation in bone height availability (red)
- Vertical bone height augmentation is needed to increase bone height availability in order to place implant within the confines of bone. Implant will be placed initially in patients healed socket bone and in the sinus bone graft that will be performed simultaneous with implant placement.



- Addition of xenograft bone graft internally & “elevating” the sinus membrane (red arrow) to provide greater vertical bone height to allow for implant placement.

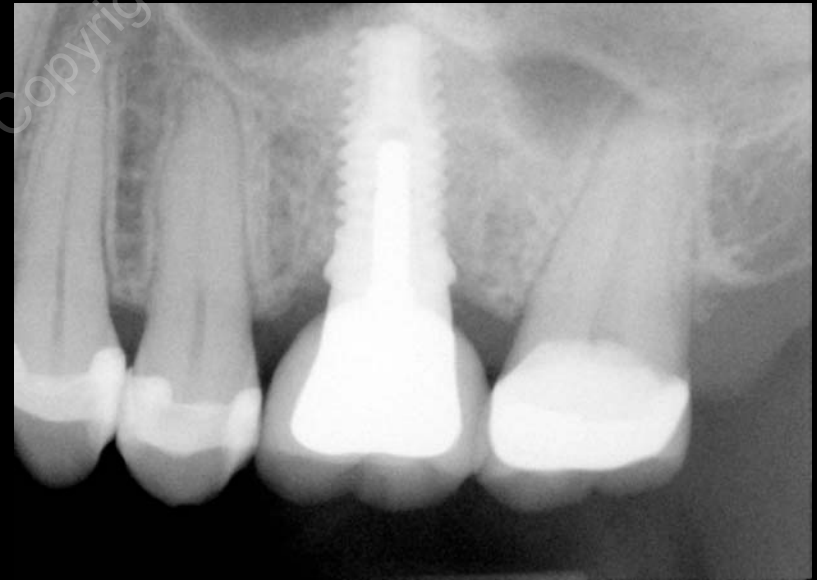
Implant Placement



Implant placement into patients native bone (**yellow arrows**) & the sinus bone graft (**red arrows**).

Treatment was performed as a simultaneous event in this case

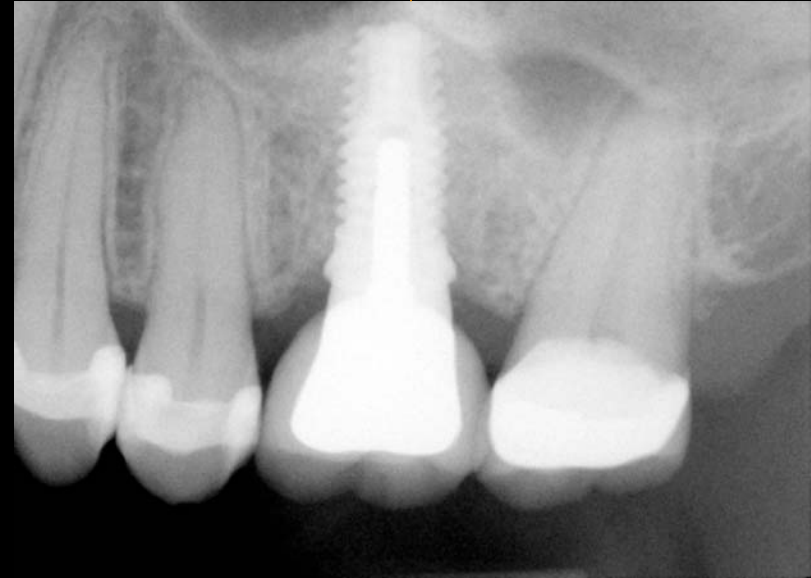
Implant Placement Final Outcome



Clinical photo and X-ray showing the restored implant

#14 – Maxillary Left First Molar

Sinus bone grafting & simultaneous implant rehabilitation for the posterior maxillary molar



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