# **Bone Grafting**



Tooth # 19 distal 9 mm pocket Bleeding on probing Subgingival calculus



5 years post op

Open cleanout periodontal surgery with demineralized freeze-dried bone allograft and resorbable membrane

4 mm sulcus No bleeding on probing



Drs. Ross, Nager and Pierce 35 years in practice

Extraction / Bone Graft Ridge Preservation



Patient presents with recurrent decay tooth # 30



Immediately after extraction.



Immediately after bone graft for socket preservation.

A BETTER WAY TO LEAVE THE OFFICE IN PREPARATION FOR A DENTAL IMPLANT

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# Extraction / Bone Graft Ridge Preservation





Fractured cups on a lower molar.



#### **Occlusal View**



#### Lingual View

#### Immediately after extraction.





Immediately after bone graft.



Coronally positioned flap for primary closure.

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Extraction / Bone Grafing for Ridge Preservation



Failing molar

Immediately after tooth removal

Immediately after placing bone graft into socket

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## EXTRACTION / IMMEDIATE BONE GRAFT RIDGE PRESERVATION FOR FUTURE IMPLANT



Recurrent decay under crown # 18 Involving furcation.



Patient returned months later, after crown broke off. The tooth is fractured and the furcation worse.



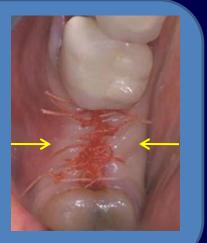
Immediately after extraction.



After immediate bone graft.

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Primary closure obtained by coronal positioning of buccal and lingual flaps, retaining bone particles.





Fractured lingual cusps tooth # 19



Immediately after placement of bone graft to preserve socket.

### Fractured molar Socket preservation



Fracture at the bone level on the distal and involving the lingual furcation



Flaps are pulled together for primary closure with resorbable sutures that last two weeks.

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Immediately after surgical extraction



Occlusal view of sutured flaps

# **Extraction / Bone Graft**



**Fractured Tooth** 

Just After Tooth Removal

Immediately After Bone Graft Placed

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Extraction / Bone Graft Ridge Preservation



Patient presents with recurrent decay teeth #'s 30, 31. He does not have tooth # 2 above. Both molars were extracted. Tooth # 30 was bone grafted in preparation for a dental implant.



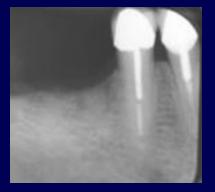
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# **Extraction / Bone Graft Single Tooth Dental Implant**



Failing molar # 30



Extraction and immediate bone graft placement for ridge preservation and regeneration



4 months after extraction / bone graft

One-stage implant placement (implant and abutment)



3 months after one-stage implant

Final implant crown

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# Crown Lengthening Procedure







Tooth # 20 had root canal treatment and a temporary post and crown.



Violation of biologic width on distal and lingual.







5 weeks after crown lengthening surgery.





After permanent crown



Drs. Ross, Nager and Pierce RIperio.com Connective Tissue Grafting Teeth Numbers 6, 9, 11













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# **Connective Tissue Graft**

## Two views of the same case





### Mucogingival defects with severe toothbrush abrasion.



After connective tissue graft.

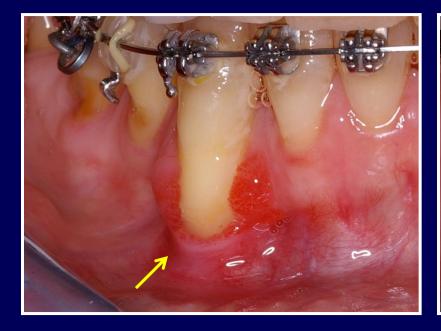


Tissue is attached to the roots and does not probe.



**Drs. Ross, Nager and Pierce** 37 years in practice

# **Free Gingival Graft**





Significant periodontal breakdown during orthodontic movement on an adult patient.

Active movement stopped. Free gingival graft #'s 27, 28. Active tooth movement continued six weeks later.



Drs. Ross, Nager and Pierce 39 years in practice

# Free Gingival Graft

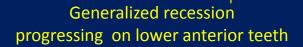


Aberant frenal attachment causing gingival recession



After frenectomy and free gingival graft







After free gingival graft teeth #'s 21-24



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# Flapless Extraction, Immediate Implant, Non-loaded Provisional



Dr. Marty Nager Dr. Donna Hagerty

#### SINGLE TOOTH DENTAL IMPLANT



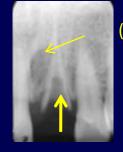
#### Broken and decayed tooth # 9



• Immediately after extraction



• Immediately after bone graft and membrane



(Large incisive foramen)



Dental implant placed
6 months later







Final crown placed 4 months later

#### DRS. ROSS, NAGER AND PIERCE

## Osteotome Sinus Lift Immediate Implant Placement



Pre-op of missing molar Note floor Of maxillary sinus



Radiographic depth gauge shows sinus floor just above 7 mm



Radiograph of bone graft where sinus is elevated



13 mm dental implant placed at the same visit

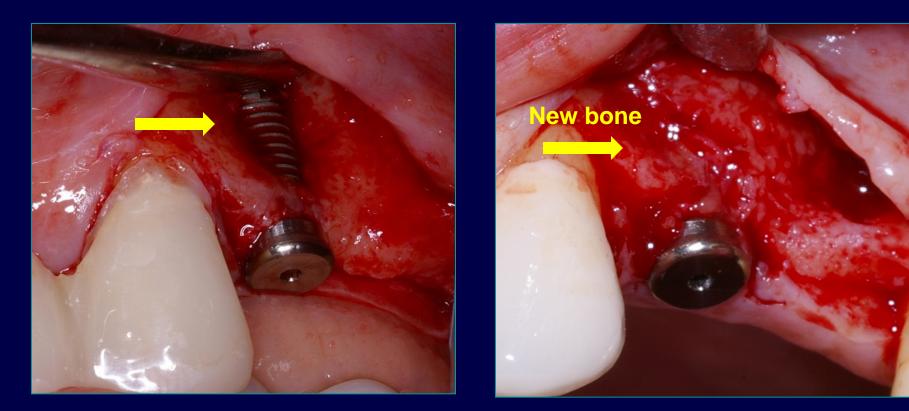


Radiograph 5 year post-op



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## Guided Bone Regeneration (GBR)



Exposed implant threads Placed bone graft at time of placement and non-resorbable membrane (Gore-Tex ). 6 months later membrane removed. New bone formed around implant.

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## What is the purpose of pocket reduction surgery?

### Access to root surfaces



5 mm pocket on distolingual # 19.



10 mm pocket on mesiolingual # 19.



Soft tissue flapped back to demonstrate calculus present on root surface. This patient had SRP previously.

## Access to bone



Palatal view of upper first molar with 7mm pocket.



Soft tissue flapped back to demonstrate excess bone thickness in this area. The excess bone contributes to the pocket and needs to be trimmed via osteoplasty.

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5 year post-op showing no pocketing due to improved bony anatomy. The patient cleans with an interproximal brush.

#### Fractured lateral incisor prior to orthodontic treatment. Future implant site.



Adult male fractured upper right lateral incisor prior to beginning orthodontic treatment.



Tooth was flaplessly extracted with piezotome surgery to preserve thin buccal plate.





Insertion of Biomend membrane.









Immediately after Biomend membrane and bone graft placed.

The membrane helps to rebuild the buccal plate and cover the socket in order to retain the bone graft.





Immediately after membrane is sutured.





Two week post-op with braces and provisional denture tooth in place.



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## **Ridge Preservation**



Patient fractured crown tooth #7





Vertical tooth fracture and facial plate bone loss precluded an immediate implant





The tooth was atraumatically removed





A piece of Biomend-Extend was cut and shaped in order to help rebuild the thin buccal plate and cover the socket in order to retain the bone graft





Puros Demineralized Bone Matrix (DBM) Putty with Chips placed into socket



The membrane is sutured over the socket





Immediately after bone graft placed.





The previously made flipper was placed and adjusted

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# Single Tooth Dental Implant

47 year old man with internal resorption of a lower canine from childhood trauma.

Endodontic treatment was done years ago but resorption continued.

Tooth was extracted and immediate dental implant placed. A flipper was used for 4 months.

Final implant and crown.











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# Single Tooth Dental Implant



Fractured molar # 3

After extraction/bone graft for socket preservation

Implant placed 6 months after extraction

Implant crown placed 3 months later



## Non-restorable upper incisors



This patient had a temporary bridge placed 7 years ago but did not return to complete treatment. The provisional broke off. It was placed back with wire and composite while a flipper was being fabricated.



The bridge was sectioned at # 6 and removed.



The remaining tooth structure was not restorable.



Teeth were gently removed





Immediate dental implants were placed into socket #'s 7 and 10. Bone grafts were placed into socket #'s 8 and 9 in order to maintain ridge.



Collagen plugs are placed to retain bone graft and prevent bone from growing over the implants



The area sutured primarily.





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#### **Dental Implant**

- Does not involve adjacent teeth
- Will not get decay or need root canal in future
- Highly predictable, Long lasting



Before





After

#### **Cemented Bridge**

- Adjacent (anchor) teeth prepared
- May get decay or need root canal
- May need future replacement



Before





### **Removable Partial Denture**

- Clasps may affect anchor teeth (teeth may decay or loosen)
- Removed nightly
- May trap food











#### Tooth extraction without bone grafting may lead to a deficient ridge.



One year after extraction without bone graft. Insufficient ridge width requires additional surgical procedures and delays treatment time before dental implant placement

Tooth extraction with bone grafting maintains ridge.



Extraction with bone graft heals with sufficient ridge width for dental implant placement resulting in decreased treatment and better cosmetics

#### Tooth extraction Without bone graft





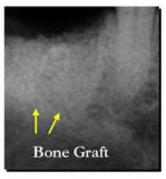
Tooth extracted No bone graft placed

6 months later Inadequate bone fill

#### Tooth extraction With bone graft



Molar extraction without bone graft at 3 months. Note the lack of bone density



Molar extraction with bone graft at 3 months. Note the white bone density





Extraction of failing tooth Healed bone graft



Dental implant placed 6 months later

# Connective Tissue Graft Five Cases



Before



After



Before



After



Before

After



After







After

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Before

# **Extraction / Bone Graft for Ridge Preservation**





### Broken and decayed lower molar.







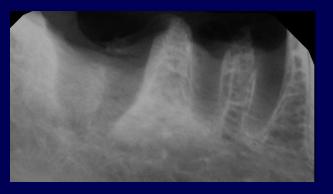
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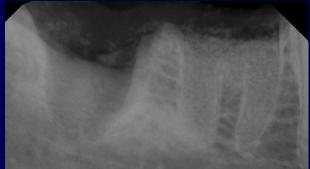
# Extraction / Bone Graft Ridge Preservation



Patient presents with recurrent decay teeth #'s 30, 31.



He does not have tooth # 2 above. Both molars were extracted.



.Tooth #30 was bone grafted in preparation for a dental implant.

## A BETTER WAY TO LEAVE THE OFFICE IN PREPARATION FOR A DENTAL IMPLANT



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