

## Case Study: Ridge Augmentation with NovaBone Dental Putty

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### History:

The patient is an 18 year old white male with a history of an automobile accident in 2005 that resulted in the loss of maxillary and mandibular central & lateral incisors. The remnants of the involved teeth and roots were extracted; the mucosa sutured and allowed to heal. When the patient returned in 2009 for implant restoration of the trauma site, the remaining bone in the anterior maxilla had resorbed necessitating bone augmentation prior to implant placement.

### Surgical Procedure:

Incisions were made to expose the deficient maxilla just above the edentulous area. The recipient site was prepared to receive the graft material by ensuring adequate bleeding of the host bone. 1.0cc of Nova Bone Dental Putty<sup>®</sup> was expressed from the syringe and adapted to the defect augmenting the site for a future implant placement. No membrane was used and the flaps repositioned and sutured. Five months post graft, exposure of the surgical area revealed significant bone augmentation that was ideal for implant placement as seen in Figure 1.



Figure 1: Regenerated buccal Ridge

To gain additional lateral width the anterior maxillary ridge was expanded using osteotomes. Two Nobel Active implants were concurrently placed into the expanded ridge. NovaBone Dental Putty was used to supplement the area and obtain additional incremental bone. The implants were uncovered 4 months later and restored with Procera<sup>®</sup> crowns.



Figure 2: Ridge expansion with osteotome & implant placement



Figure 3: Emergence profile of ceramic abutments



Figure 4: Final restoration with Procera crowns

To accommodate Nobel Active implants, the narrow (Figure 5) mandibular ridge was also expanded using a similar osteotome surgical procedure. NovaBone Dental Putty was placed to assist in regenerating additional facial bone (Figure 6). After four months, the implants were restored with Procera crown (Figure 7). As with the maxilla, the bone regeneration was excellent resulting in successful osseointegration of the implants. The gingival tissues healed well and adapted to the surface of the underlying regenerated bone as seen in Figure 7.



**Figure 5: Thin Mandibular Ridge**



**Figure 6: Ridge Expansion with Implant placement**



**Figure 7: Final restoration with Procera crowns**

### **Discussion:**

Postoperative follow up examination at six months revealed excellent tissue adaptation against the newly regenerated buccal bone. There was no evidence of inflammation and the tissue healing was uneventful. Clinical and radiographic analysis revealed excellent bone regeneration in the grafted areas. Regeneration of the maxillary facial bone, along with the increased mandibular ridge width can be seen clinically resulting in improved esthetics for the patient.

NovaBone Dental Putty, with its unique presentation, exhibited excellent retention characteristics and molded easily into the desired size and shape. Both tissue healing and bone regeneration was superlative. NovaBone Dental Putty, being completely synthetic, demonstrated no allergic reaction, inflammation or patient concern for disease transmission risks.

NovaBone Dental Putty enhances the rate of bone regeneration by a mechanism known as "Osteostimulation" that ensue the upregulation of several genes responsible for an increased osseous activity at the defect site. It is the only completely synthetic, fully resorbable, non-settable bone graft putty. It does not require any mixing or special handling procedures prior to placement. It is 'fool proof' and has been proven to successfully regenerate bone in varied indications including orthopedic and craniofacial surgeries.