

Case Study: Restoration of Fenestration Defect with NovaBone Dental Putty after Osteotome Expansion

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History:

The patient is a 32 year old white male with a history of trauma that resulted in loss of his maxillary central incisor. The tooth was extracted in 2007 and the patient returned for implant placement in 2010. The edentulous area experienced disuse atrophy and resorption that resulted in a narrowing of the ridge (Figure 1). Ridge expansion utilizing the Summer's osteotome technique was the procedure of choice to restore the bony architecture required for implant placement.

Surgical Procedure:

Incisions were placed through the mucosa to expose the narrow, deficient ridge. In conjunction with the osteotome technique, the ridge was expanded slowly using an active implant driver (Figure 2). Due to the thin buccal wall, a fenestration defect occurred during the surgical procedure (Figure 3). The placement of a 3.5mmx11mm Nobel Active[®] implant resulted in further widening of the bone in the area. Once the implant was in final position, NovaBone Dental Putty[®] was expressed directly from the syringe around the implant and into the fenestration defect. Additional Nova Bone Dental Putty was adapted onto the buccal area to augment the native bone (Figure 4). No membrane was used. The flaps were re-approximated with minimal tension and closed with 4/0 Polyviolene suture as seen in Figure 5.



Figure 1: Narrow Maxillary Edentulous Area



Figure 2: Active implant driver – Osteotome technique

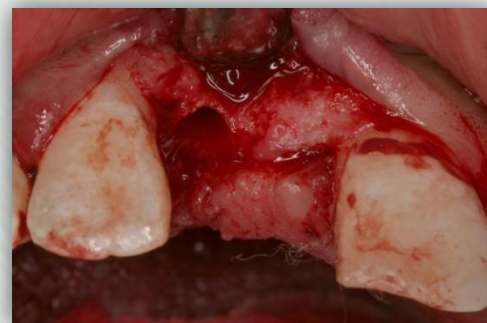


Figure 3: Fenestration defect

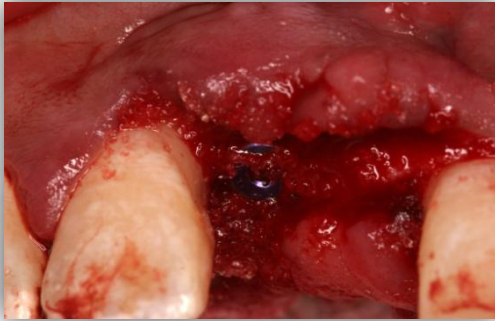


Figure 4: NovaBone Dental Putty around the implant and fenestration



Figure 5: Post-operative suturing with no membrane

Discussion:

NovaBone Dental Putty was the material of choice primarily for its ease of use, moldability and clinical predictability. Since it requires no mixing or thawing, NovaBone Dental Putty could be placed directly into the defect without any special handling methods or lengthy preparations. The cohesiveness of the Putty allowed for ideal placement and stability even during irrigation. Postoperative tissue healing was excellent and the area healed uneventfully without any allergies or inflammatory reactions. The postoperative examination revealed successful tissue adaptation against the regenerated buccal bone. Four month follow-up radiographic analysis confirmed good bone regeneration with excellent osseointegration (Figure 6).

NovaBone Dental Putty with its unique presentation, exhibited excellent retention characteristics. The tissue healing and bone regeneration was superlative. NovaBone Dental Putty enhances the rate of bone regeneration by a unique mechanism called 'Osteostimulation' that ensue the upregulation of several genes responsible for an increased osseous activity at the defect site.

NovaBone Dental Putty is the only completely synthetic, fully resorbable, non-settable bone graft in a putty format that gives clinicians an excellent working time without compromising on the handling characteristics. It is available in an easy syringe delivery mechanism that further simplifies and minimizes graft handling. It is engineered to be 'fool proof' and has been proven to successfully regenerate bone in diverse indications including orthopedic and craniofacial surgeries.



Figure 6: 4-Month post-operative radiograph