

Case Study: Sinus Elevation with Summers Technique

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History:

The patient is a 55 year old male with a failed root canal restoration on the maxillary left first molar. The involved tooth demonstrated root fracture but exhibited no evidence of periapical infection (Figure 1). Due to the close proximity of the roots to the sinus membrane, a single tooth sinus lift procedure utilizing Summers Osteotome technique with immediate implant placement was chosen as the best possible option for successful restoration.



Figure 1: Pre-operative panoramic demonstrating the failed maxillary left first molar

Surgical Procedure:

The involved tooth was atraumatically extracted with the aid of root canal instrumentation in attempt to retain the structure and bony architecture of the socket. The socket was aggressively debrided and irrigated in preparation of implant placement. A 3.5mm x 11mm endosseous implant was chosen. After the osteotomy site was prepared to a final diameter within 1 mm of the radiographic antral floor, a sub-antral elevation with the osteotome technique as described by Summer's was completed. NovaBone Dental Putty[®] was expressed incrementally into the osteotomy site. The pressure of the graft material being placed into the site raised the sub-antral floor to the desired height. NovaBone Dental Putty was also placed in the space between the implant and the socket wall sealing any gaps and defects. Approximately 1.5cc of NovaBone Dental Putty was used for the entire procedure which elevated and raised the sinus membrane by about 3-4 mm. No membrane was used and the area was sutured to obtain primary closure.



Figure 2: Four month post-operative panoramic radiograph demonstrating successful sinus elevation and osseointegration

Discussion:

Nova Bone Dental Putty was soft, easy to place and did not cause any membrane tears. Both the tissue healing and bone regeneration was complete and successful. Clinically, there were no complications reported relative to the surgery and no nasal discharge, bleeding or other sinus related infections were reported. The patient presented at follow up without implant mobility or pain on percussion or mastication.

Radiographically, the bone in the augmented region shows regular trabecular pattern without any evidence of peri-implant radiolucency indicating no peri-implant bone loss. Also noteworthy is that the antral floor has moved superiorly and the bone surrounding the implant resembles "normal alveolar bone". It is apparent from the radiograph at four months that there was minimal shrinkage in the augmented area.

NovaBone Dental Putty is the only completely synthetic non-settable, resorbable bone substitute in a putty format that gives clinicians maximum working time without compromise of the handling characteristics. It is also available in single use syringes that further simplify delivery and graft handling. With its unique osteostimulation mechanism, NovaBone Dental Putty enhances the rate of bone regeneration that ensue the upregulation of several genes responsible for an increased osseous activity at the defect site. NovaBone Dental Putty presents with significant advantages over other bone graft replacement materials and is an excellent choice for sinus elevation procedures using the Summer's Osteotome technique.