Reconstruction of Maxillary Sinus Lateral and Crestal Wall over Upper Right First Molar by Partial Thickness Flap Repairing Technique A Case Report

Wen Sheng Cheng, DDS
ICOI Diplomate, Private Practice , Elephant Dental Clinic

Background: Defects of sinus bone wall sometimes may occur after retrieving the implant dropping into sinus. Due to the massive removal of bone , the surgical wound heals only with soft tissue coverage.

Methods: Combination of full thickness flap and partial thickness flap technique to expose surrounding intact bone and split soft tissue over the defect site into two layers. Using the inner layer of soft tissue as sinus membrane, proceed sinus lift and bone augmentation as regular lateral window technique. Primary closure by the outer layer with the help of PRF.

Results: Reconstruction of sinus bone wall and sinus elevation are completed in the same procedure. Implant placement can be proceed after maturation of bone graft material.

Conclusions: Partial thickness flap repairing technique provides an alternative way to rebuild the defects of sinus bone wall

Case Report

A female patient suffers from a failed implant #16 dropping into sinus. In order to retrieve the lost implant, massive bone tissue is removed from crestal to lateral wall of sinus. After successfully retrieving the lost implant from sinus, defects of sinus bone wall were covered with collagen membrane and suture. The healing of the surgical wound finally ends with only soft tissue coverage without bone formation. The soft tissue coverage comes from oral mucosa fused with Schneiderian membrane.

The patient wants to recover occlusional function and esthetic with implant restoration. Hence, the defects of crestal and lateral bone wall over #16 have to be reconstructed before implant can be replaced. The figure 1-1 & 1-2 are the CBCT 5 months after the implant removal.

Treatment plan is to split soft tissue coverage over #16 into inner and outer layer by partial thickness flap technique (Fig.2-1 to Fig.3-3). By using the inner layer of soft tissue as sinus membrane, sinus lift and bone augmentation are proceeded as regular lateral window technique (Fig.4-1 to Fig.4-5). Tension-free primary closure by releasing the outer layer with the aid of PRF (Fig.5-1to Fig.6-2).

Re-implant of #16 and #14 are made 5 months after sinus wall reconstruction (Fig.7-1 &Fig.7-2). Uncover of #16 implant 5 months after re-placement. Progressive loading for 3 months. Final prosthesis delivery 8 months after implant (Fig.8).

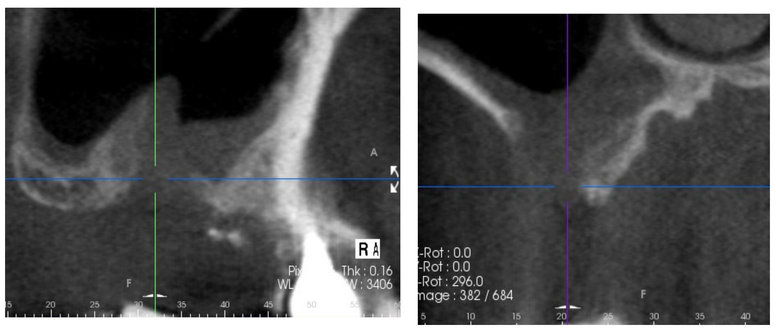

Fig.1-1&Fig.1-2 CBCT images five months after successfully retrieving #16 implant ,revealing sinus defect with lateral and crestal bone wall missing.

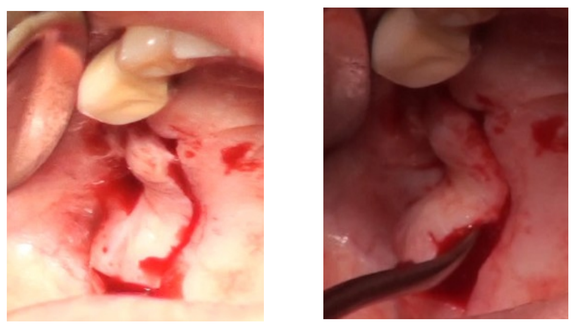

Fig.2-1&Fig.2-2 Incision made over giginva with intact bone underneath. Full thickness flap reflection first.

Fig.3-1 to Fig.3-3 Proced partial thickness flap reflection over the gingiva where oral mucosa fused with Schneiderian membrane.

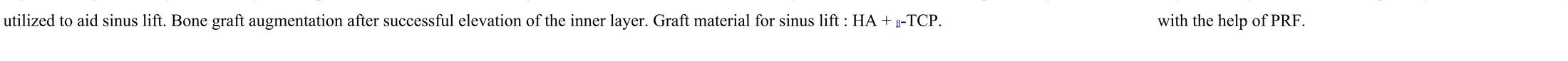

Fig.4-1 to Fig.4-5 Using the inner layer of flap as Schneiderian membrane, gentle elevation of the soft tissue as regular lateral window technique. Wet gauze utilized to aid sinus lift. Bone graft augmentation after successful elevation of the inner layer. Graft material for sinus lift : HA + β-TCP.

Fig. 5-1& Fig.5-2 Tension-free primary closure of outer layer with the help of PRF.

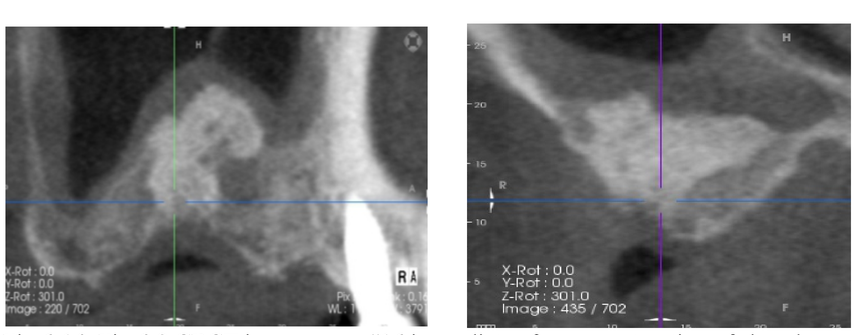

Fig.6-1& Fig.6-2 CBCT images over #16 immediate after reconstruction of sinus bone wall and sinus augmentation.

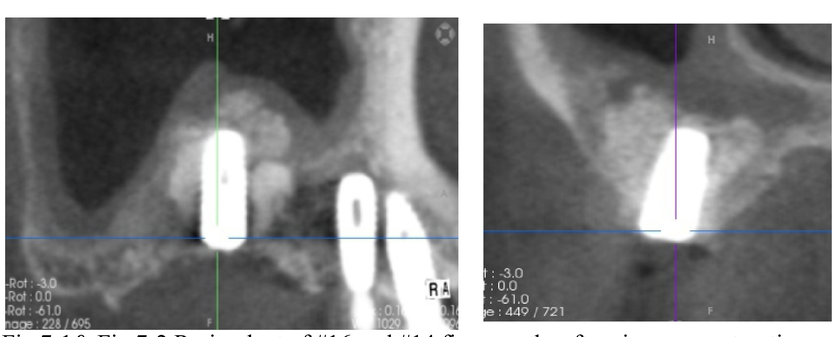

Fig.7-1& Fig.7-2 Re-implant of #16 and #14 five months after sinus reconstruction.

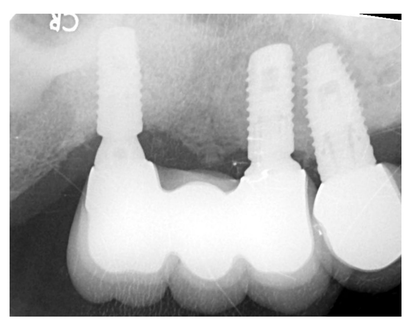

Fig.8 Final prosthesis delivery eight months after #16, #14 implant placement.