

## Case Study: Sinus Augmentation after Cyst Removal

Dr. Lanka Mahesh, Implantologist  
New Delhi, India

### History:

A 50-year old male patient presented with an edentulous ridge in the upper right quadrant. Pre-operative Cone Beam CT (CBCT) (Figure 1) shows the expansion of the sinus and inadequate bone height (1.75mm) in the sinus floor for implant placement as a result of a cystic lesion. The best prognosis involved removal of the cyst along with the infected sinus membrane in the area and augmenting the sinus floor with NovaBone Putty using the lateral window technique followed by a delayed implant placement.

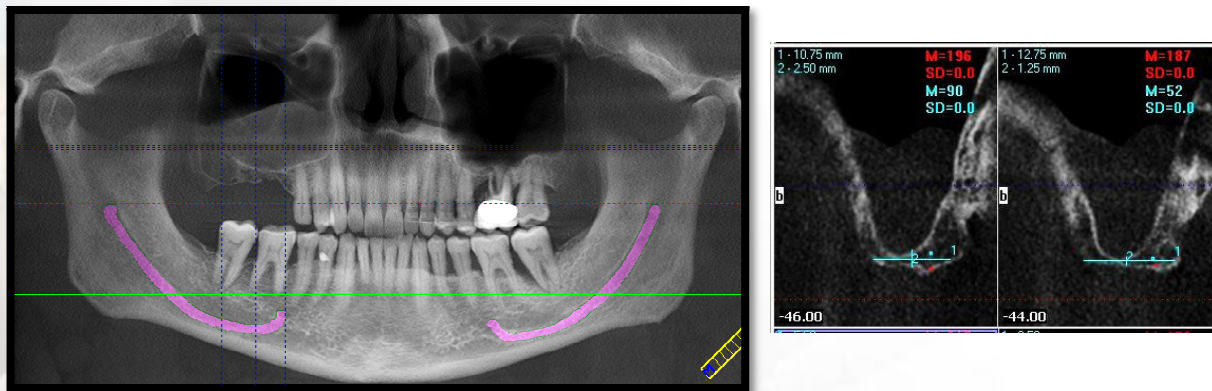
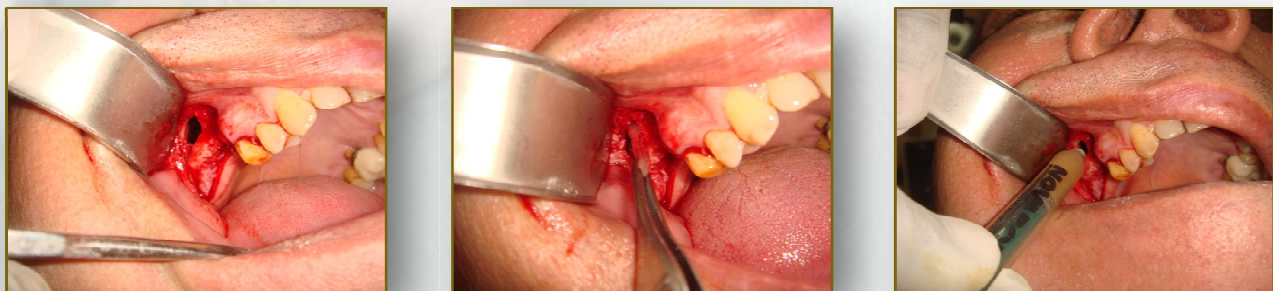


Figure 1A: Pre-op CBCT demonstrating the expansion of sinus; B) CT slice showing Inadequate bone height (1.75mm)

### Surgical Procedure: Extraction & Graft Placement

A 5mm lateral window was created to access the sinus. The cyst was enucleated along with the affected sinus membrane. (Figure 2A-B). NovaBone Putty was placed into the sinus floor incrementally with autogenous bone collected from creating the lateral window (Figure 2C). About 3cc of NovaBone putty was used to augment the area. The lateral window was closed with a membrane (BioMend) and the mucosa sutured. The explanted cyst was sent for histopathological evaluation and the patient was recalled after a week for post-operative follow-up.

Figure 2: A) 5mm lateral sinus window; B) Removal of cyst and sinus membrane; C) NB Putty placement



## Analysis

The biopsy report confirmed the lesion to be a polyp (Figure 3). The patient was recalled six months post-surgery to evaluate bone regeneration for implant placement. Post-op CBCT shows good bone fill (Figure 4). The bone height was measured to be approximately 6mm indicating an approximate 4mm gain. Also noticeable on the CBCT is a regenerated Schneiderian membrane and residual graft material. It is important to note that the removal of sinus membrane in the affected area delays the bone regeneration due to limited blood supply. The trabecular pattern and the radiolucency in the regenerated area suggest the remodeling of NovaBone Putty into native bone.

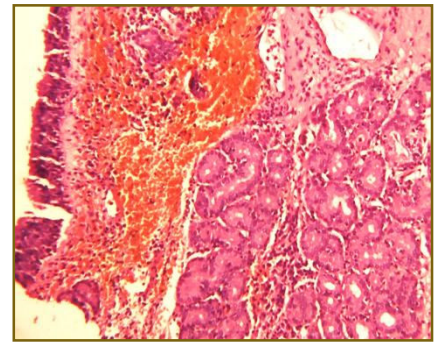


Figure 3: Histopathology confirming polyp

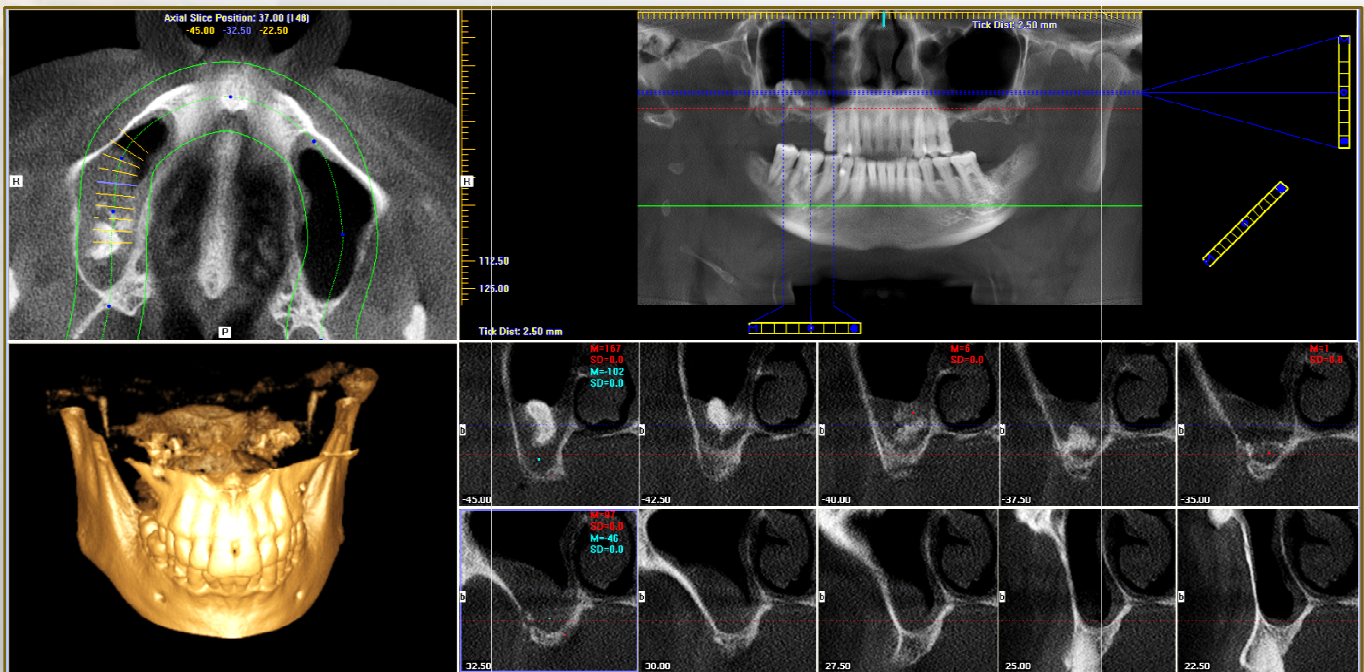


Figure 4: Six month CBCT demonstrating bone fill in the augmented area with evidence of residual graft material

## Discussion:

Sinus augmentation after cyst and membrane removal is a controversial and unique surgical procedure. The membrane provides blood supply in the region and is essential for bone regeneration. In this case, the sinus membrane was regenerated and NovaBone Putty remodeled. However, due to the size and type of the defect, the NovaBone Putty is not expected to remodel for at least another 4 months. The patient is recalled for a 10 month post-op evaluation. NovaBone Dental Putty is an excellent choice for sinus augmentation surgeries. It provides clinicians enhanced handling characteristics without compromising the clinical performance.