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Dental Implant CASE REPORT

Lateral Window Approach for a Maxillary Sinus Lift Procedure Using Synthetic Bone Material and Placing a DENTIS™ Implant Simultaneously



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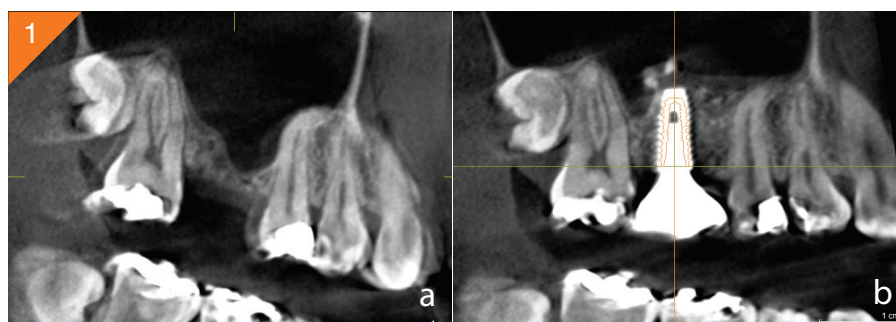


Figure 1a,b. a) Pre-operative radiograph. b) Post-operative radiograph.

Case History

A healthy 30-year old female patient came to our office for a consultation regarding a compromised maxillary first molar. Upon clinical examination we have found a pneumatization on the maxillary sinus at that location. A CT data revealed that the vertical height of the remaining bone is less than 2mm at the area of tooth loss. As for the implant surgery, the lateral window approach maxillary sinus lift was performed and DENTIS™ Ovis BCP (Large particles) synthetic bone material was placed. (Fig. 2, 3).

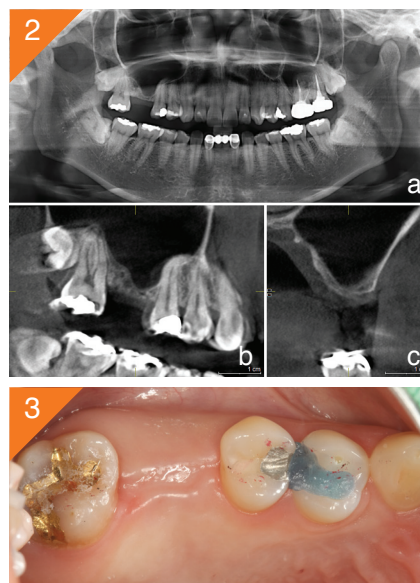


Figure 2a,b,c.
a) Pre-surgical panoramic radiograph.
b) Pre-surgical CBCT lateral view of the maxillary 1st molar.
c) Pre-surgical CBCT cross-sectional view of the maxillary 1st molar.

Figure 3.
Pre-surgical intraoral photo of the maxillary first molar area.



Methods

The surgery started with a full thickness muco-periosteal flap elevation, and then a lateral sinus window was opened with #4 round carbide bur. The maxillary sinus membrane was lifted with the sinus elevator instrument from the DENTIS™ SAVE SINUS KIT. Bone graft was performed using OVIS BCP large particles, then the window was covered with CGF (Fig. 4, 5).

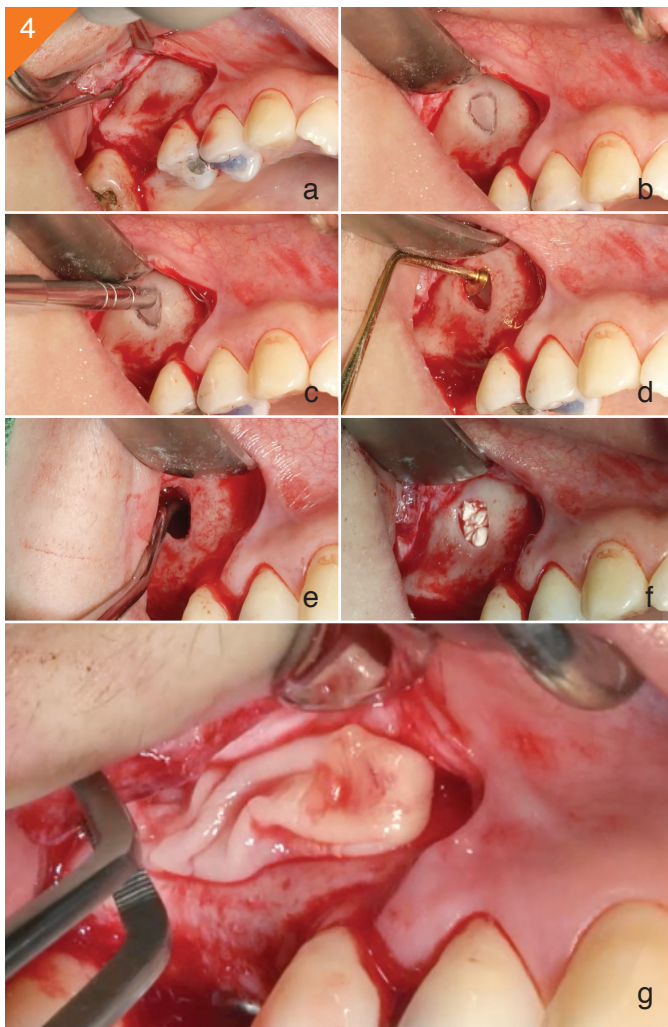


Figure 4a-g.

- Full thickness flap reflected after an adequate incision, in preparation for the sinus augmentation procedure.
- Lateral view of the sinus window outlined and prepared with a carbide bur #4.
- d) The sinus window is opened by using the instruments from the DENTIS™ SAVE SINUS KIT.
- Sinus membrane is raised as to allow the bone graft procedure.
- The sinus bone graft is placed and protected with a surgical membrane.
- PRF is layered over the sinus window.



Figure 5. Sinus augmentation material.
Ovis Bone BCP (Left), SAVE SINUS KIT (Right)

Simultaneously, the implant placement was performed with the DENTIS™ One Q-SL Ø4.7 X 10mm fixture and covered with its own cover screw. The flap was repositioned for primary closure and fixated with 4/0 nylon suture materials (Fig.6,7,8).

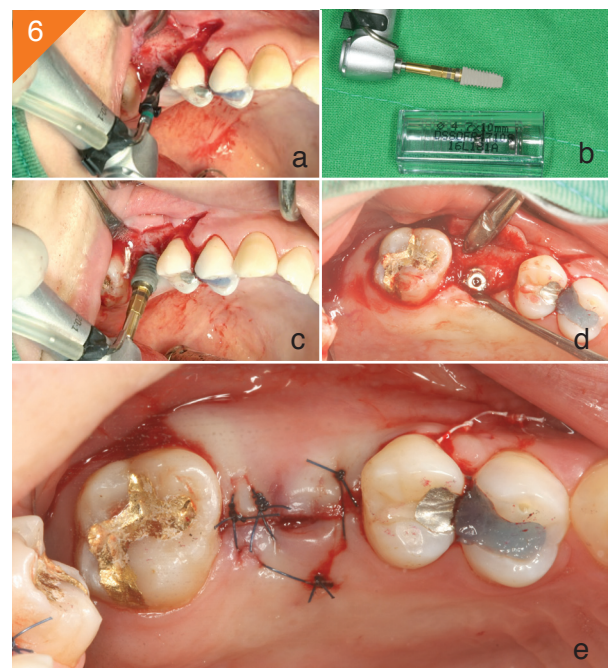


Figure 6a-e.

- Bone Drilling is achieved with consecutive osteotomy drills.
- DENTIS™ One Q-SL Ø4.7 X 10mm implant fixture.
- Fixture placement.
- Cover Screw is placed on the implant.
- The flap is fixated with 4/0 nylon suture materials to assure a primary closure of the flap.

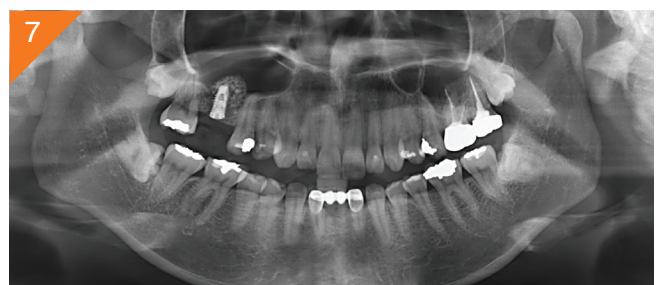


Figure 7. Post-surgical panoramic radiograph of the maxillary right 1st molar implant showing the bone graft in the lifted sinus.



Figure 8a-c. a) Occlusal view of the healed area after 1 month.
b) 3 months of healing after the surgery.
c) 6 months of healing after the surgery.

After 6 months, a second surgery was performed with the single slit incision, through which the cover screw was replaced with $\varnothing 6.5 \times 2.5$ mm healing abutment. The zirconia restoration with custom milled titanium abutment was fabricated and delivered as a screw-cement retained type restoration.

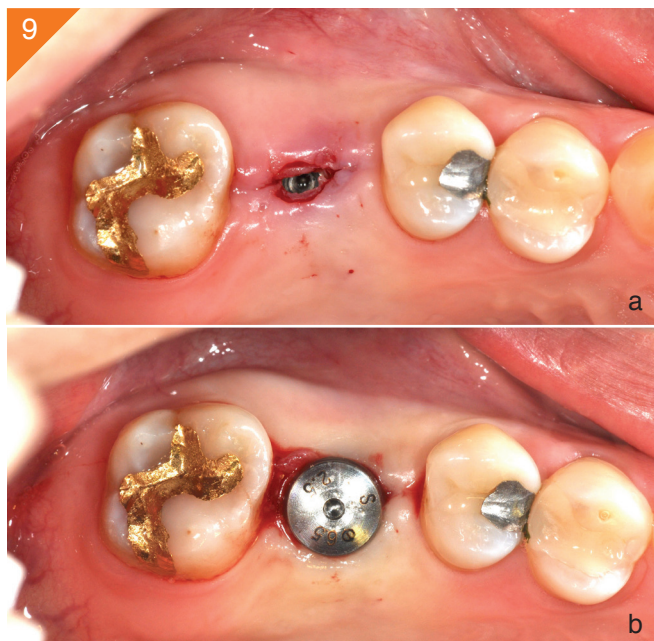


Figure 9a,b. a) 2nd stage surgery is done to uncover the implant in a minimally invasive manner. b) Healing abutment is placed over the implant after the removal of cover screw.



Figure 10. Occlusal view of the final screw-retained crown. Final Prosthesis.

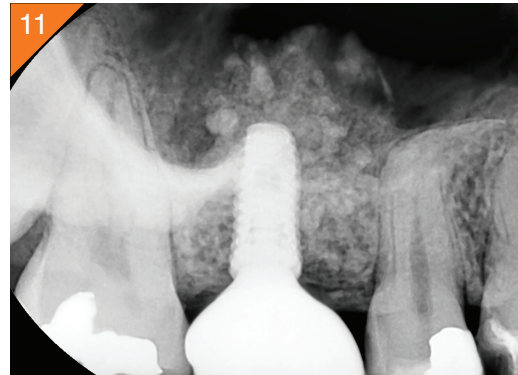


Figure 11. View of the peri-apical radiograph after the crown placement.

Results

At 1 year post-surgery, OVIS BCP bone particles were observed to be partially remodeled to autogenous bone based on the CT radiograph images. Clinically, it was noticed that the implant fixture was well osseointegrated.

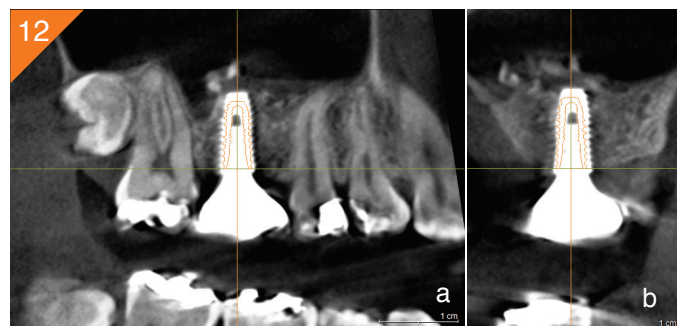


Figure 12. a) A CBCT lateral view of the 1 year post-operative check after the surgery. b) A CBCT cross-sectional view of the 1 year post-operative check after the surgery.

Conclusions

DENTIST™ OneQ-SL fixture has additional fixation support on pneumatization area of maxillary sinus. OVIS BCP bone particles were partially resorbed and replaced with autogenous bone after lateral approach sinus lift surgery.

Moreover, the DENTIST™ SAVE SINUS KIT is practical for the lateral approach sinus lift on severe pneumatized maxillary sinus for dental implant surgery.

References

Felice P1, Pistilli R, Piattelli M, Soardi E, Pellegrino G, Corvino V, Esposito M. 1-stage versus 2-stage lateral maxillary sinus lift procedures: 4-month post-loading results of a multicenter randomized controlled trial. Eur J Oral Implantol. 2013 Summer;6(2):153-65.

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Conflict of interest:

The author declares that he has no conflict of interests relating to this article.

Products Used

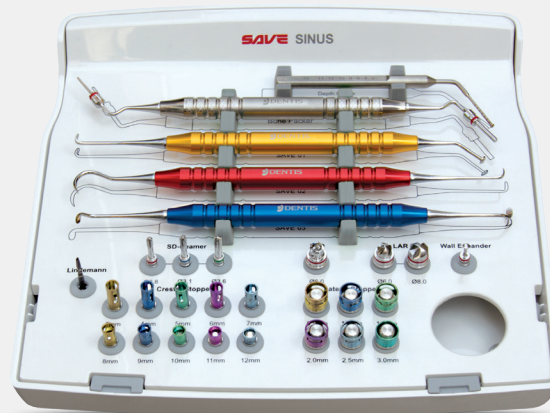
- DENTIST™, One-Q SL Ø4.7 X 10 mm
- DENTIST™, Ovis BCP (Large particle)
- DENTIST™, SAVE SINUS KIT



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