SUMMARY
Placement of dental implants in the posterior maxillary edentulous areas is often compromised by the limited volume of bone due to the anatomy of the maxillary sinuses. In such cases, the technique of Sinus Lift is indicated to provide a sufficient volume of hard tissue in order to achieve primary stability at implant placement. Simultaneous augmentation of the sinus floor and implant placement is severely limited by the amount of residual bone of the floor of the sinus.

A clinical case of minimal residual bone at the bottom of the sinus is demonstrated. A sinus floor augmentation with bone block harvested from the mandibular symphysis is performed. The bone block is placed in the sinus after membrane elevation and fixed with a screw to the sinus floor. After fixation of the bone block in the sinus implant (10/4.1 mm TSV (Zimmer)) is placed in reconstructed bone with good primary stability. Healing occurs without complications and the third month X-ray showed normal density of bone around the implant. The technique is very sensitive to surgeon’s skills.

Key words: sinus lift, implant placement, bone block, sinus floor augmentation.

The effectiveness of implant therapy in edentulous patients has been well documented over the last three decades. Rehabilitation through dental implants always requires a sufficient horizontal and vertical bone volume. Planning dental implant placement in the distal maxilla is critical if vertical bone volume is insufficient. There are two approaches to ensure a sufficient vertical bone volume in the distal maxilla: onlay bone grafting on the crest of the alveolar ridge and sinus floor augmentation.(2) A widely used technique to provide sufficient vertical bone volume is sinus floor augmentation using a bone substitute and/or autologous bone (6). This method needs from lateral approach (5, 3, 1, 4). If residual bone height of the sinus floor is below 4 mm, sinus lift and implant placement are difficult to achieve in a single surgical procedure since it is impossible to ensure primary stability. A two-stage surgery – augmentation and subsequent implant insertion – requires a long recovery period. On the other hand, augmentation using a bone substitute to achieve ridge reconstruction greater than 10 mm is non-predictive. Sinus floor augmentation by autologous bone block grafting allows simultaneous dental implant placement in some cases of low residual bone height.

CASE PRESENTATION:
A male patient aged 57 presented with tooth loss in the right maxillary region and vertical bone deficit. The crestal level of the alveolar ridge corresponded to the alveolar bone level of the neighbouring teeth. The anatomy of the maxillary sinus floor allowed augmentation by bone block grafting with lateral approach. The tooth #15 was extracted because of apical lesion. A lateral access sinus lift procedure was performed. The Schneider membrane was elevated, while keeping it intact, to ensure enough space for sinus floor augmentation by bone block placement. The augmentation procedure was performed using a bone block with the mental region as a donor site. The bone block measuring 15/10/8 mm was immobilized with a 10/1mm transosseous fixing screw (Aesculap). A 10/4.1 mm TSV implant (Zimmer) was placed in the reconstructed bone, achieving a primary stability of 35N/cm. Three months later full integration of the bone block to the sinus floor and full osseointegration of the implant were demonstrated radiologically. No donor-site complications occurred.
Fig. 1. Initial X-ray status

Fig. 2. There is no more than 1 mm sinus floor thickness

Fig. 3. Initial intraoral situation.

Fig. 4. Extracted # 15

Fig. 5. Lateral sinus wall

Fig. 6. Piezosurgery bone incision
Fig. 7. Prepared bone window

Fig. 8. Removed bone window. There is intact sinus membrane

Fig. 9. Cortical bone block

Fig. 10. Lifted sinus membrane

Fig. 11. Mandibular symphysis

Fig. 12. Ultrasonic bone block preparation
Fig. 13. Mandibular symphysis bone block

Fig. 14. Cortical and mandibular bone blocks

Fig. 15. Fixed bone block in to the maxillar sinus and prepared implant bed

Fig. 16. Inserted implant Zimmer TSV 4.1\10mm

Fig. 17. Implant position about bone level

Fig. 18. Covered lateral window by bone block
Fig. 19. Post operative panoramic x-ray

Fig. 20. Post operative segment x-ray

Fig. 21. Sutured area of sinus lift

Fig. 22. Sutured donor area
Fig. 23. Panoramic X-ray 3 mounts later

Fig. 24. Segment x-ray 3 mounts later

Fig. 25. CBCT 6 months after surgery demonstrate integrated bone block and osseointegrated implant.

Fig. 26. CBCT 6 months after surgery show the fixing screw near to the implant.
CBCT 6 months after surgery showed integrated into the sinus bone block and osseointegrated implant (Fig. 25, 26). No change was observed in the membrane of the maxillary sinus. Radiographic evidence of osseointegration achieved suggest a possible functional load.

**CONCLUSION:**
The method described allows one-time implant placement and sinus lift, with a reduced duration of implant therapy. The technique is very sensitive to surgeon’s skills.

**REFERENCES:**

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