

Clinical application of custom alveolar ridge splitting technique with simultaneous lateral window sinus augmentation technique

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INTRODUCTION

The placement of implants in maxillary posterior can be challenging due to limited horizontal and vertical bone volume. Limited bone volume is caused by rapid resorption of the alveolar ridge after tooth extraction, progressive pneumatization of the maxillary sinus, and limited bone height to the sinus to provide sufficient stability of the implants. Techniques such as autogenous onlay graft and guided bone regeneration have been used to increase the limited bone volume in the area with sinus augmentation. However, there was limited degrees of success and predictability with graft techniques, and prone to risk of complications once combined with simultaneous sinus augmentation. One of the most serious complications is secondary infection which leads to even more loss of volume.

Maxillary sinus augmentation through lateral window is the most documented technique that can provide increased vertical bone volume available at the implant site with predictable prognosis. Customized alveolar ridge splitting (CARS) technique can lower the risk of complications and shorten the procedure time for increased horizontal bone volume, which allows simultaneous sinus augmentation for increased vertical bone volume. Also, with the CARS technique, the overall procedure becomes more predictable with favorable prognosis. The purpose of this presentation is to introduce custom alveolar ridge splitting (CARS) technique with simultaneous lateral window sinus augmentation in maxilla with limited horizontal and vertical bone volume.

MATERIALS AND METHODS

A 61 years old female patient presented with partial removable prosthesis in the maxilla looking for replacement of the missing teeth in the anterior maxilla and posterior premolar area. Custom alveolar ridge splitting combined with simultaneous maxillary sinus augmentation using lateral

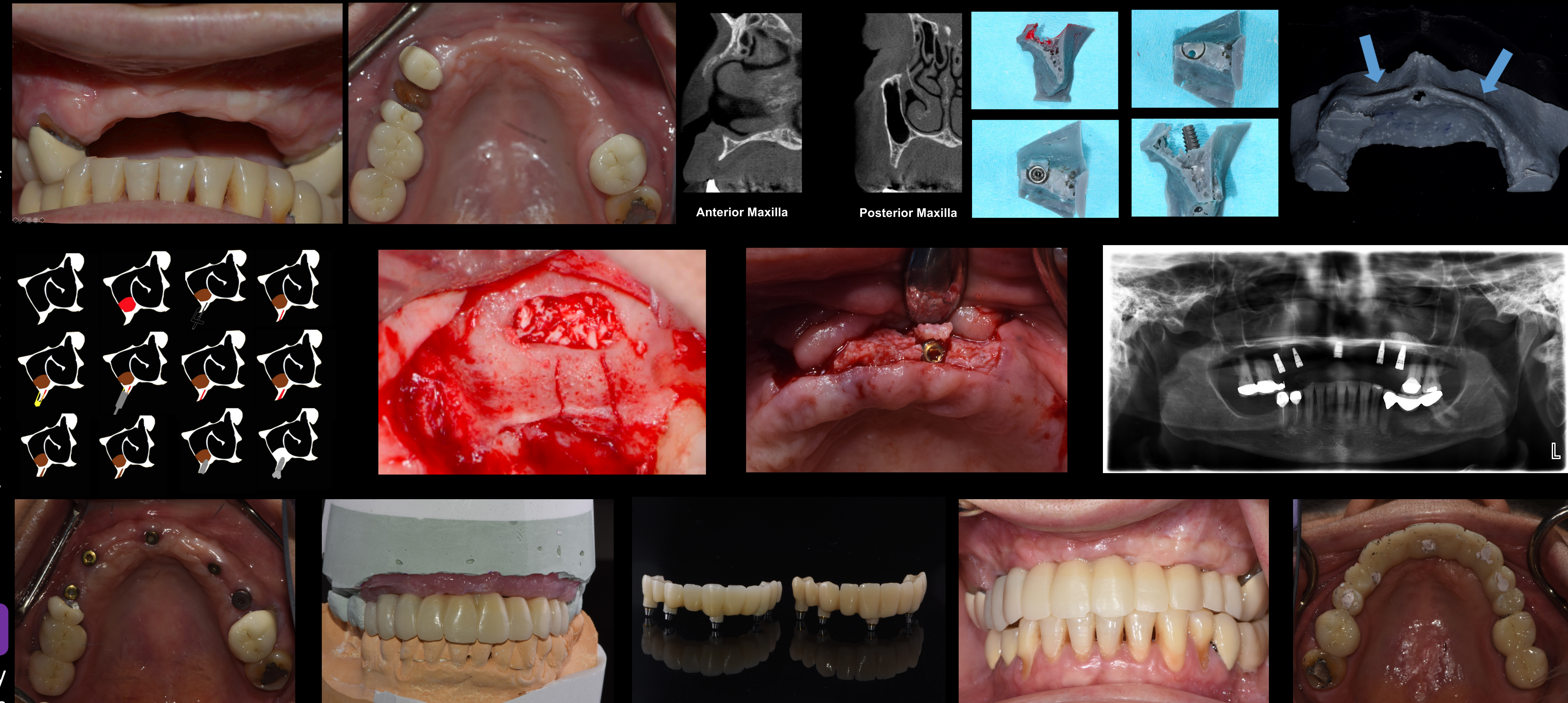
window technique at the site of maxillary left first and second premolar was performed in order to enhance the facial bone contour. Subsequently, 4.1x10mm and 3.3x10mm bone level tapered implants were placed simultaneously at the edentulous sites.

RESULTS

Successful regeneration of bone volume with implant osseointegration with uneventful healing was achieved. The

implants were restored and followed up for 6 months without any complication.

CASE PRESENTATION



CONCLUSION

Customized alveolar ridge splitting (CARS) technique with simultaneous lateral window sinus augmentation is a viable treatment for maxilla area with limited horizontal and vertical

bone volume. The case report shows how the overall treatment was less traumatic, more predictable, less complications, and shorter procedure time.

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