

Split Mouth Ridge Augmentation Using BMP-2 and BMP-2 With Xenograft : A Case Report,

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Introduction

The use of BMP-2 on ridge augmentation for severe ridge defects was introduced. The potential for regenerating bone with BMP-2 is well known but stability of the augmented bone is not reported. The purpose of this case report is to evaluate the clinical stability of the augmented bone using BMP-2 utilizing titanium(Ti) mesh.

Materials & Methods

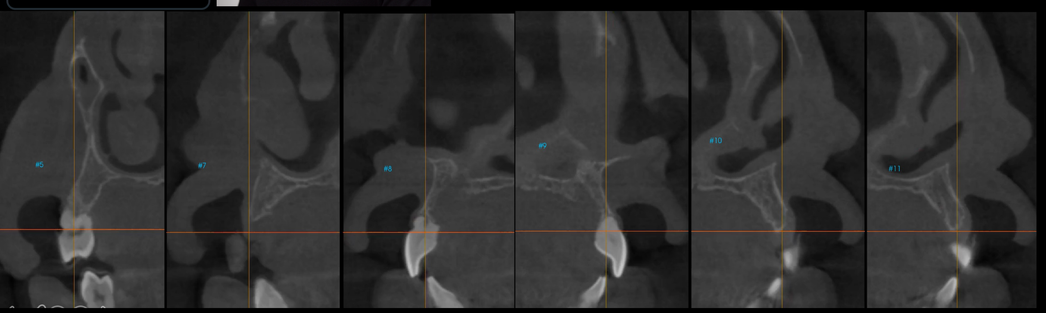
A 60-year-old female presented at the Advanced Periodontics clinic at Loma Linda University. The patient's chief complaint was loose maxillary anterior teeth after orthodontic treatment. The periapical radiographs revealed severe external root resorption and the cone beam computed tomography showed very thin or no buccal wall. The treatment plan of having teeth #5,6,8,9,and 12 extracted and replaced with 4 implant supported two fixed partial dentures was accepted by the patient.

Teeth were extracted and allowed for soft tissue healing for 6 weeks. Ridge augmentation was carried using Ti-mesh and BMP-2. In the right side, BMP-2 sponge was mixed with xenograft and in the left side only BMP-2 sponge was placed.

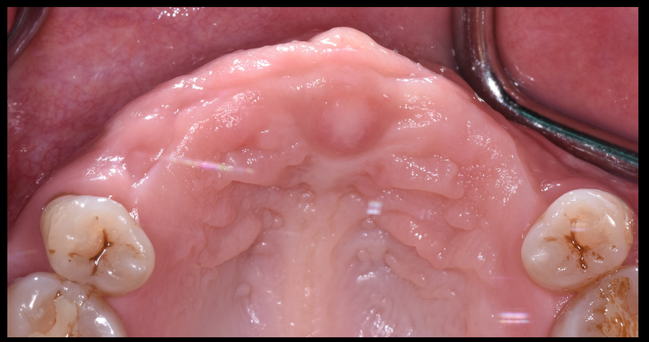
Six months after the ridge augmentation surgery, Ti-mesh was removed and dimension of the ridge was measured. Then apically repositioned flap was done with a collagen matrix to increase the amount of keratinized tissue and vestibular depth. Four implants were placed into the ridge three months after the ti-mesh removal. The dimension of the ridge was measured again.

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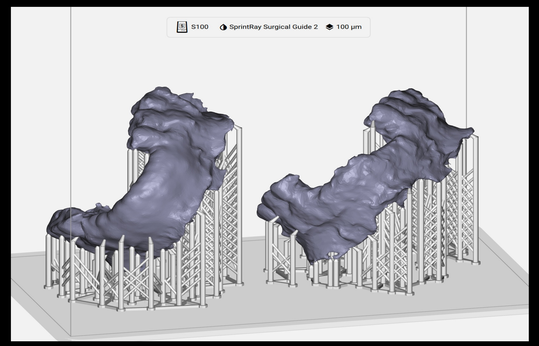
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6 weeks after





3D printed bone model for current situation , and another model for the anticipated augmentation



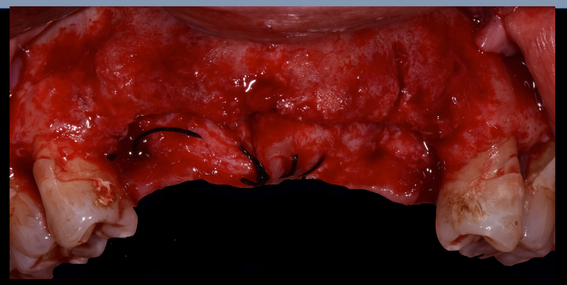
Pre-trimmed the Ti-mesh on the bone model

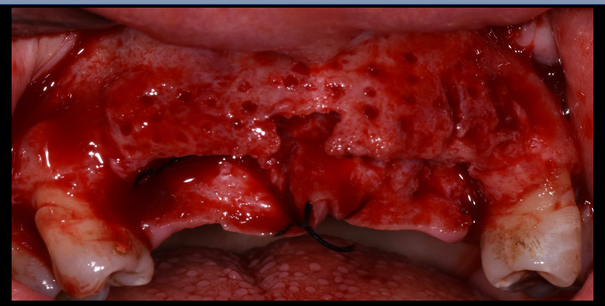


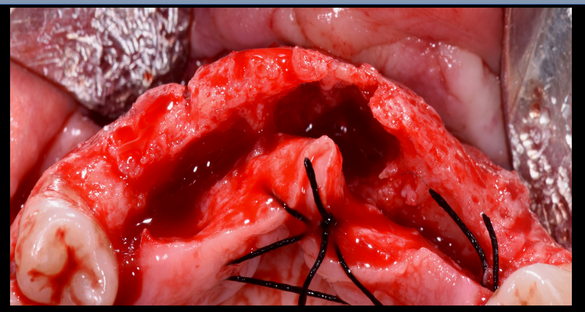
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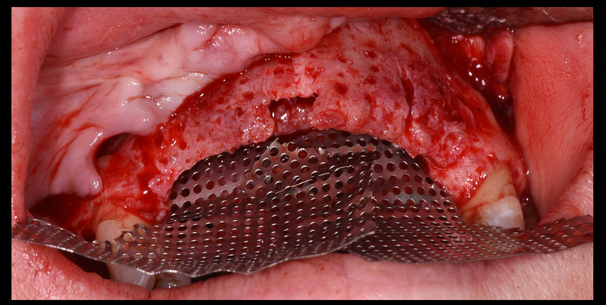


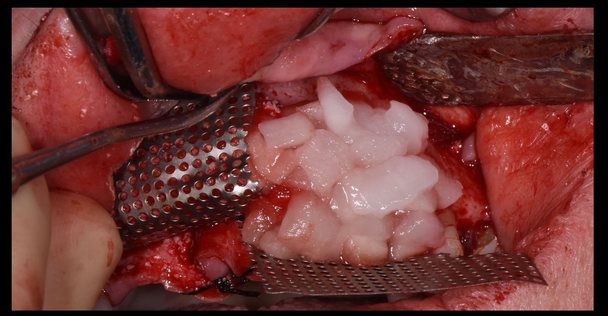


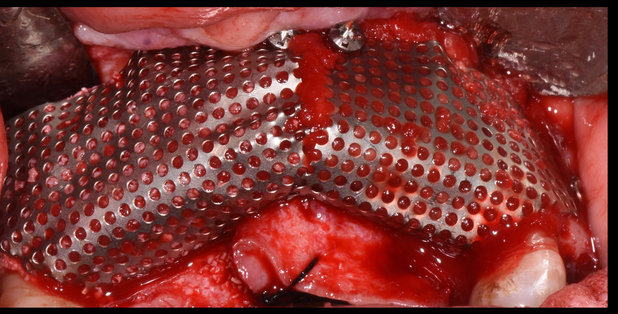


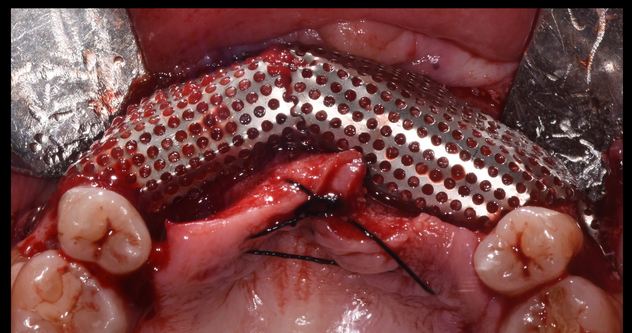


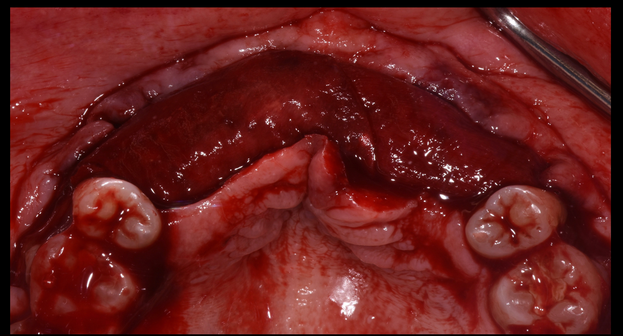


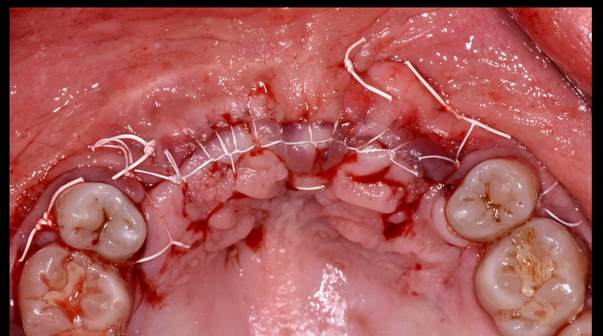












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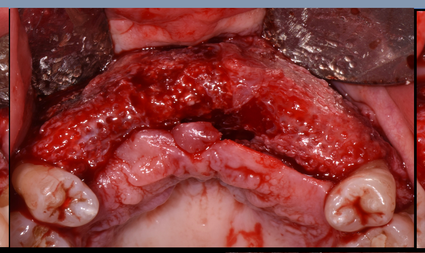
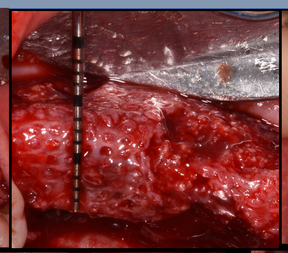
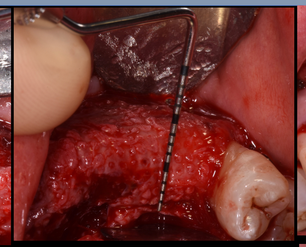
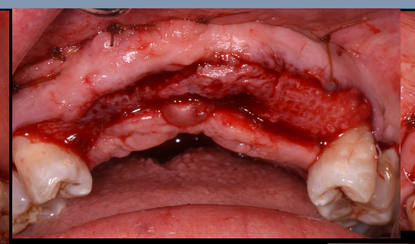
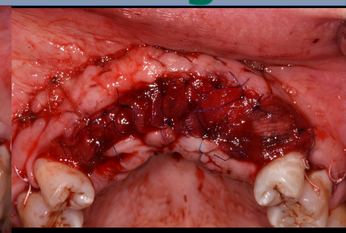
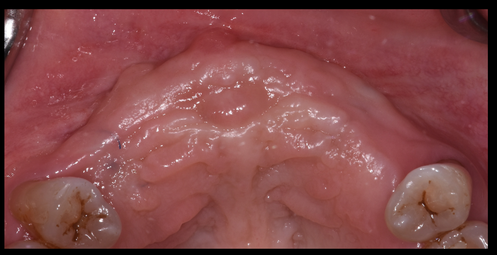
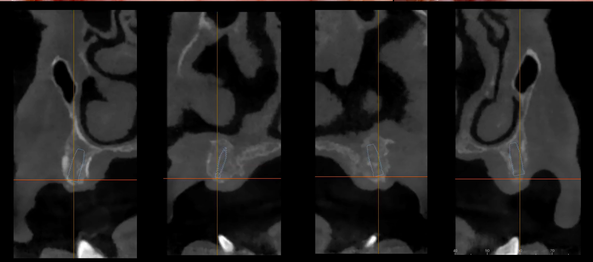
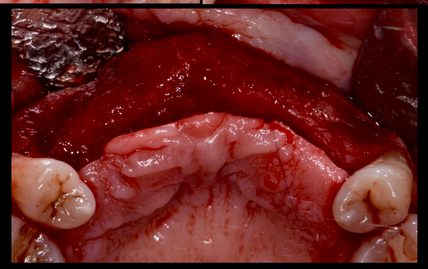
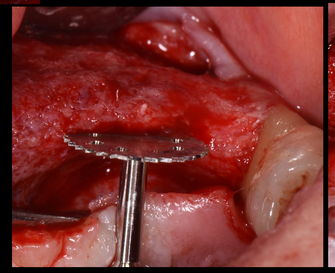
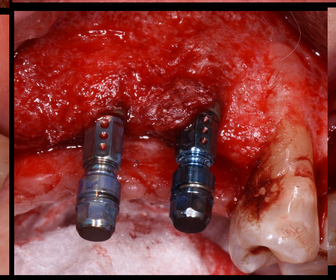
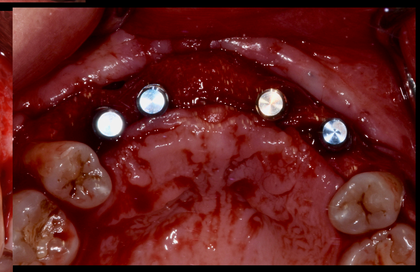
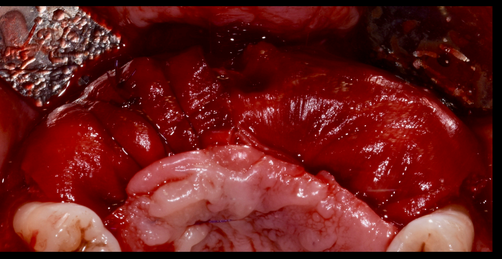
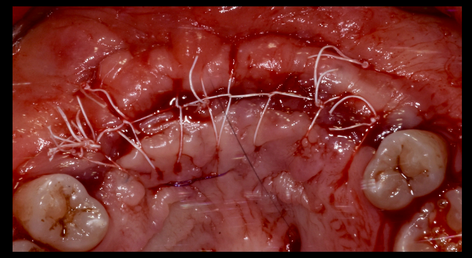
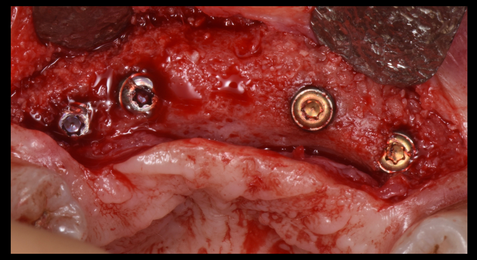
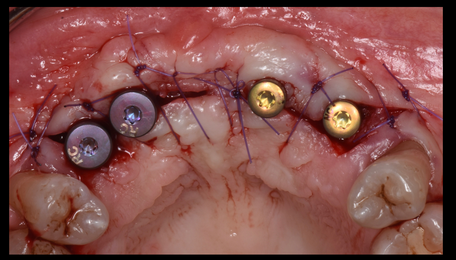


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Results

After the ridge augmentation, the ridge width was measured about 10 mm on both right and left sides.
During the implant placement, 3 months after Ti-Mesh removal, the ridge was found to be about 4 mm on width on the BMP-2 only site and 7mm on on the BMP-2 plus xenograft side. The bone density evaluated during osteotomy was similar on on both sides.

Conclusion

The use of BMP-2 for ridge augmentation is a good option for severe ridge deficiency. Adding xenograft to BMP-2 might be beneficial to reduce or slow down the resorption of the augmented bone .

References

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