

INTRODUCTION

Dental implants have become a viable treatment for edentulous patients. However, the bone remodeling after tooth extraction as well as the hard and soft tissue dimensional changes in patients who have dentures for a long time result in challenging quantity of bone. Tissue augmentation procedures are thus required before, simultaneous,

or after implant placement; although it may be unpredictable and time consuming for patients. This case report presents custom alveolar ridge splitting (CARS) technique used in extremely atrophic anterior maxilla to achieve a potentially less invasive and simpler augmentation procedure to facilitate subsequent implant placement.

MATERIALS AND METHODS

The clinical data was extracted from Implant Database at New York University College of Dentistry. Patient information was de-identified and this study is in compliance with the requirements of Health Insurance Portability and Accountability Act (HIPPA). In this case report, a patient with a maxillary removable partial denture presented with a chief complaint of implants for

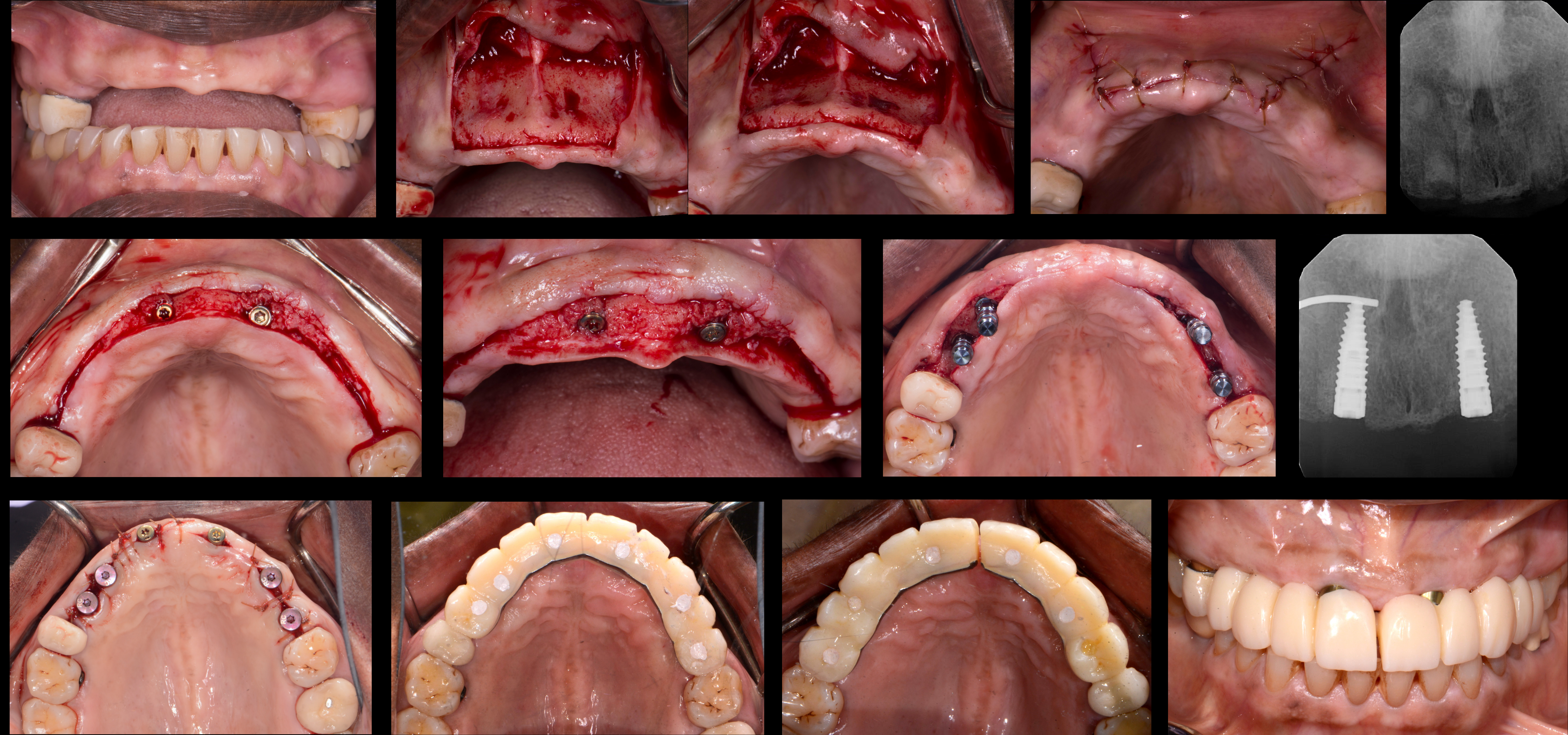
missing teeth. Atrophic anterior maxillary ridge was noted and bone augmentation was required for implant treatment. After risk benefit assessment, patient was treated with 2 stage CARS technique where implants were placed in a re-entry surgery three weeks after bone expansion. Four more implants were placed in the posterior area and all were restored with implant prostheses.

RESULTS

In this case, the maxillary ridge was increased in terms of horizontal volume and accommodate two implants without complications. Together with the other four more implants, they were further restored by one-piece fixed implant prostheses. As per patient's request, the

protheses was modified into two segments to create diastema resembling her previous natural dentition. Patient was on recall program every 6 months for 2 years and until present date, no failures or complaints were developed according to the patient.

CASE PRESENTATION



CONCLUSION

Within the limitation of this case report, the custom alveolar ridge splitting technique may reduce surgical costs, time and complications compared to traditional bone augmentations and present as a simpler approach of ridge augmentation in anterior esthetic area. More researches with longer follow-up time are needed to determine the promising outcome of custom alveolar ridge splitting technique.

REFERENCES

1. Hämmerle CH, Araújo MG, Simion M. Osteology Consensusgroup. 2011. Evidence-based knowledge on the biology and treatment of extraction sockets. *Clin. Oral Implant. Res.* 2012;23:80–82.
2. Buser D; Martin W; Belser UC. Optimizing esthetics for implant restorations in the anterior maxilla: anatomic and surgical considerations. *Int J Oral Maxillofac Implant.* 2004;19 Supple:43-61
3. nislidis G; Wittwer G; Ewers R. Preliminary report on a staged ridge splitting technique for implantplacement in the mandible: a technical note. *Int J Oral Maxillofac Implant.* 2006;21:445-449.
4. Koo S, Dibart S, Weber HP. Ridge-splitting technique with simultaneous implant placement. *Compend Contin Educ Dent.* 2008;29:106-110.
5. Raed O. Kadi, Buddhapoom Wangsrimongkol, Parnward Hengjeerajaras, Stuart Froum, Sang-Choon Cho. The Custom Alveolar Ridge Splitting (CARS) Technique for Predictable Horizontal Ridge Augmentation in the Atrophic Anterior Maxilla - A Retrospective Case Series Study. Manuscript in preparation