

Abstract

Smile Design feature first appeared in CEREC 4.0 software (2011) with Omnicam (2012). A virtual 3-D smile design is superimposed with patient's facial photo. It makes it possible to perform chairside design and complete esthetic reconstruction, which would establish proper proportions of the anterior teeth, overjet, overbite, fullness of the anteriors, flaring of the anteriors, incisal edge smile line vs. the lower lip line... etc. The feature is still an outstanding part of the 5.0 software (2019) with Primescan (2019) or with the upgraded Omnicam (2012 being upgraded in 2019).

Even without smile design feature, the CEREC chairside digital dental system is still excellent in delivery anterior reconstruction, including veneers. Smile design¹ could still be accomplished by the virtual model superimposed over the pre-treatment digital model for esthetic adjustments and modifications.

This case report demonstrates an anterior reconstruction using chair side intra-oral scanner, CAD/CAM software and milling machine. Centric Relation (CR)/ centric occlusion (CO) was establish through full occlusion equilibration in CR then scanned into CAD/CAM software for final prosthesis design. Occlusion scheme, overjet, overbite, arch form and occlusal plane were developed with virtual articulator. Final esthetics was determined with 3-D patient face and pre-treatment model. They were all overlapped in the software for references during final prosthesis design phase. The treatment was started and completed in a one-visit appointment.

Introduction

The patient, who is 50 years old, presented to the dental clinic with chief complaint: "I want beautiful white teeth that are bigger in size. I want B1 shade. I need a good smile."

Upon diagnosis, following issues were observed: 1. Dark teeth; 2. very narrow arches; 3. #9 presented at midline due to missing #5 and upper anteriors shift to right²; 4. Minimum overjet, especially toward the anterior right; 5. Low lip line & low smile line³

Pre-treatment with Constricted Arches, Shifted Midline

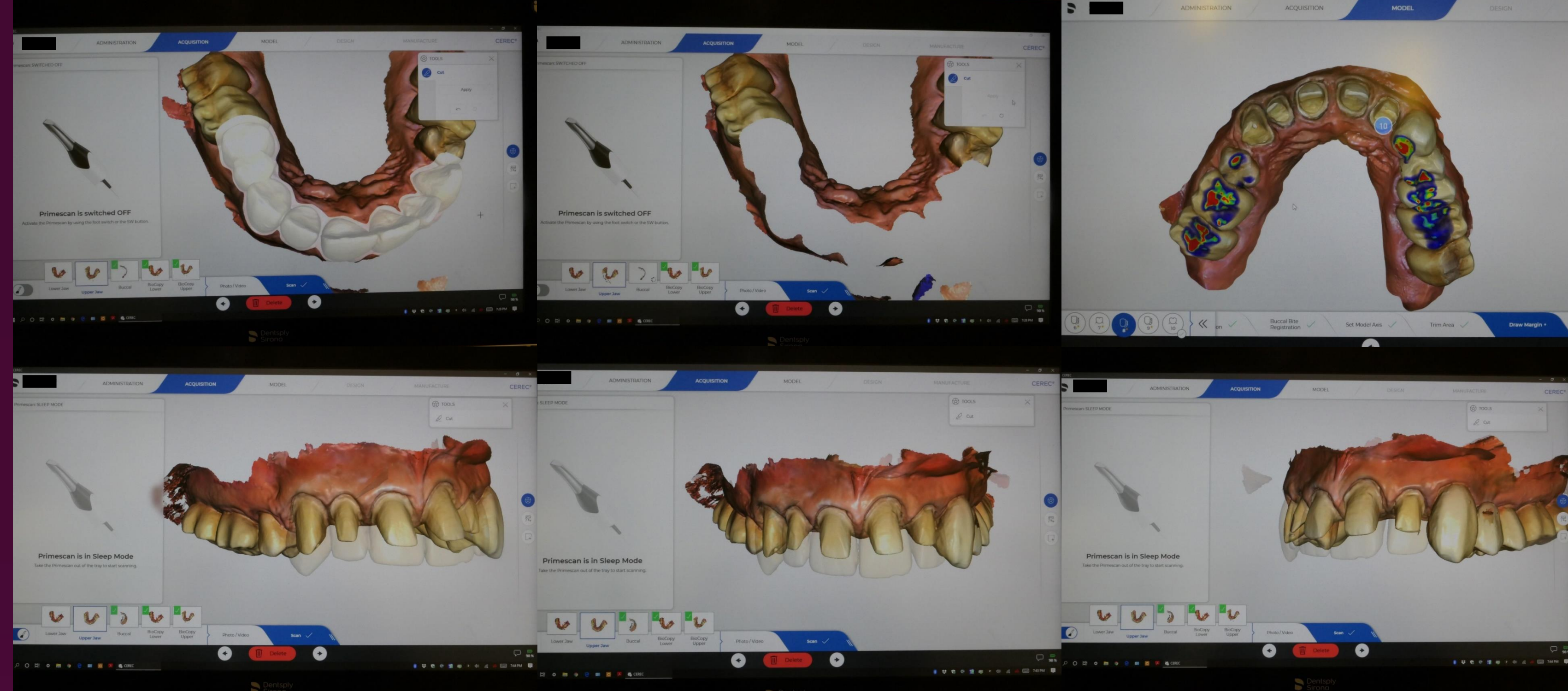


Clinical Patient Management and Sequence of Treatment

#11x13 Digital Final with Buccal Bulk & Fullness



Digital Impression with Overlapping Pretreatment Model



#6,7,8,9,10 Digital Proposals with Cross-Mount Models Aiding in Design



Pre-Treatment



Post-Treatment



Conclusion

Chairside digital anterior esthetic reconstruction is a very practical way to achieve high demand results, due to its capacity to overlap the pre-treatment model with the new proposals for evaluation and modifications.

References

1. Kurbad, A. and Kurbad, S., *Cerec Smile Design – a software tool for the enhancement of restorations in the esthetic zone*. Int J Comput Dent. 2013; 16(3): 255-69
2. Zhang, Yi-fan et al, *Young People's Esthetic Perception of Dental Midline Deviation*. Angle Orthod (2010) 80 (3): 515-520
3. Hussain, Ahmed et al, *The influence of varying maxillary incisor shape on perceived smile aesthetics*. Journal of Dentistry, 2016, Vol.50, pp12-20

Discussion

Patient is planning to come back for a prosthesis on #4 (#5 missing). In order to complete the fullness of smile on the upper arch, buccal extension with increased bulkiness on #4 is necessary.

Due to the B1 shade upon patient's request, the contrast between the upper arch and lower arch are quite apparent.

Nevertheless, with the low smile line, patient still shows an increased volume and fullness of incisors.