



An Alternative Crestal Sinus Augmentation Technique for Atrophic Maxilla – Two Case Reports

Abdullah Alqarni; Dimitrios Tsitsimelis, Marco Bergamini, Mitsuhiro Sawada, Ines Fernandez Gualart,, Sang-Choon Cho

Ashman Department of Periodontology and Implant Dentistry at the NYU College of Dentistry



INTRODUCTION

Maxillary sinus augmentation (MSA) through the lateral window has been extensively reported as a highly predictable augmentation with a low morbidity procedure for restoring bone in the severely resorbed edentulous maxillary arches. According to the literature, it can have a success rate of up to 90%. Nevertheless, the use of the lateral window approach, even with its further innovations, has different limitations including the presence of a thick lateral cortical plate and the close proximity of the intraosseous maxillary artery anastomosis.

Therefore, clinicians must carry out a proper presurgical assessment to increase the outcome of the procedure and decrease the number of procedural errors during the surgery. To overcome these situations, the palatal approach and the conventional osteotome technique have been proposed as possible alternative options. However, in certain circumstances where the palatal wall presents excess thickness, this procedure may have disadvantages. The purpose of these case reports is to document an alternative transrectal approach performed in two patients with an increased buccal and palatal plate of bone.

MATERIAL AND METHODS

Clinical data in this study was obtained from the Implant Database (ID) at New York University College of Dentistry (NYUCD). This data set was extracted as de-identified information from the routine treatment of patients at the Ashman Department of Periodontology and Implant Dentistry at New York University College of Dentistry. The ID was certified by the Office of Quality Assurance at the New York University College of Dentistry. This study is in compliance with the Health Insurance Portability and Accountability Act (HIPAA) requirements

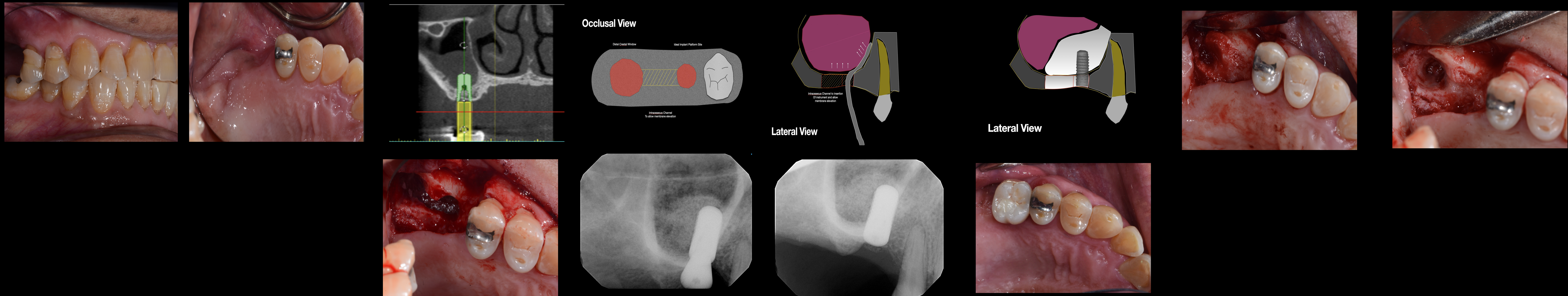
In the current study, two patients were enrolled at the New York University College of Dentistry Ashman Department of Periodontics and Implant Dentistry who desired to have dental implants with a fixed prosthesis to replace their missing teeth. The two patients required a sinus augmentation procedure with simultaneous implant placements, due to the limited bone height. Nevertheless, due to the close proximity of the maxillary artery with the lateral window of the sinus, the Caldwell Luc MSA was not possible to be finalized. Hence, an innovative sinus augmentation procedure was designed.

An Alternative Crestal Sinus Augmentation Technique for Atrophic Maxilla – Two Case Reports

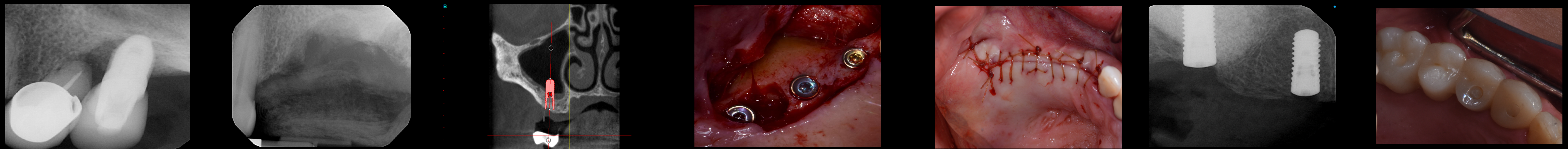
Abdullah Alqarni; Dimitrios Tsitsimelis, Marco Bergamini, Mitsuhiro Sawada, Ines Fernandez Gualart,, Sang-Choon Cho

Ashman Department of Periodontology and Implant Dentistry at the NYU College of Dentistry

CASE 1



CASE2





NYU

An Alternative Crestal Sinus Augmentation Technique for Atrophic Maxilla – Two Case Reports

Abdullah Alqarni; Dimitrios Tsitsimelis, Marco Bergamini, Mitsuhiro Sawada, Ines Fernandez Gualart,, Sang-Choon Cho

Ashman Department of Periodontology and Implant Dentistry at the NYU College of Dentistry



DISCUSSION

The newly introduced transcresal approach is a procedure that allows increasing vertical bone height in the posterior maxilla and allows implants to be placed in conjunction with the sinus augmentation technique with a direct vision technique on the surgical field.

The indications for this technique are increased thickness of lateral and palatal walls and cases where there is an intraosseous anastomosis. In addition, this technique will make clinicians place longer implants increasing the longevity of future restorations. Nevertheless, more research including randomized controlled trials is needed to analyze the long-term outcomes of this technique.

CONCLUSION

Sinus augmentation is oftentimes considered a valid technique for the atrophic posterior maxilla. Nevertheless, in cases of limited bone height, increased thickness of medial and lateral walls, and close proximity with the maxillary artery, implant treatment may be complicated. Nevertheless, the current case reports confirmed that the newly introduced transcresal approach may be a viable technique in cases of the closeness of the intraosseous artery and in cases of increased thickness of lateral and palatal walls.

Within the limitation of this study, this technique may be an alternative procedure for vertical regeneration of the posterior maxilla and render the patient with a longer and more long-lived restoration. Nevertheless, more research and long-term data are needed to prove the results of the current clinical trial.

REFERENCES

- Schropp L, Wenzel A, Kostopoulos L, Karring T. Bone healing and soft tissue contour changes following single-tooth extraction: a clinical and radiographic 12-month prospective study. Int J Periodontics Restorative Dent. 2003 Aug;23(4):313-323.
- Jensen OT, Shulman LB, Block MS, Iacono VJ. Report of the Sinus Consensus Conference of 1996. Int J Oral Maxillofac Implants. 1998;13 Suppl:11-45.
- Lundgren S, Cricchio G, Hallman M, Jungner M, Rasmusson L, Sennerby L. Sinus floor elevation procedures to enable implant placement and integration: techniques, biological aspects and clinical outcomes. Periodontol 2000. 2017 Feb;73(1):103-120.
- Testori T, Weinstein R, Taschieri S, Del Fabbro M. Risk Factor Analysis Following Maxillary Sinus Augmentation: A Retrospective Multicenter Study. Int J Oral Maxillofac Implants 2012; 27:1170–1176.
- Wallace SS, Froum SJ. Effect of maxillary sinus augmentation on the survival of implant endosseous dental implants. A systematic review. Ann Periodontol 2003; 8:328-343.
- Chiapasco M, Casentini P, Zaniboni M. Bone augmentation procedures in implant dentistry. Int J Oral Maxillofac Implants 2009;24 :237-259.
- Summers RB. A new concept in maxillary implant surgery: the osteotome technique. Compendium. 1994;15(2):152-62
- Florio S, Suzuki T, Cho SC. The Palatal Window for Treating an Incompletely Augmented Maxillary Sinus. Implant Dent. 2017 Apr;26(2):328-331.
- Wallace SS, Tarnow DP, Froum SJ, Cho SC, Zadeh HH, Stoupe J, Del Fabbro M, Testori T. Maxillary sinus elevation by lateral window approach: evolution of technology and technique. J Evid Based Dent Pract. 2012 Sep;12(3 Suppl):161-171.