

Commentary to “Survival rate of Astra Tech implants with maxillary sinus lift”

Junho Lee

Department of Periodontology, School of Dentistry, Seoul National University, Seoul, Korea

I had the chance to read a recently published article by Yoon et al.¹ entitled ‘Survival rate of Astra Tech implants with maxillary sinus lift’. The authors performed a retrospective evaluation of the clinical survival rate of TiO-blast surface-treated Astra Tech implants after transalveolar or lateral approach sinus floor elevation with bone grafts. Although their clinical survival rate was 90.9% (n=99) and this was considered a success, there are still several concerning factors to consider. With my limited knowledge and experience, I would like to express some of my opinions for authors’ kind review.

First of all, this study would have been greatly improved if the author set more detailed inclusion/exclusion criteria. The authors included too many types of grafting materials without considering the outcome of a corresponding material in different sinus augmentation techniques; lateral and transalveolar technique. There are too many variables to consider in this study.

Although the authors provided references indicating that there are no statistical differences related to the type of bone graft materials or approach, this does not necessarily mean that those criteria are completely nonsignificant factors in implant survival. I would like to carefully state that the authors generalized and over-simplified factors based on limited references. Specifically, the authors referenced a study by Jurisic et al.² to support that there are not significant differences between the two sinus floor elevation techniques¹. However, the minimum alveolar bone height for sinus elevation in Jurisic et al.’s

study² was 4 mm, whereas that of Yoon et al.’s study¹ was 1.2 mm. A study by Geurs et al.³ found a significant difference in implant loss when residual bone height was less than 4 mm, as compared to 5 mm or greater. The authors should not have drawn a conclusion solely based on one other similar study. The referenced study by Jurisic et al.² is not the same as the study done by Yoon et al.¹, and thus the authors should have provided their own statistical analysis as to whether or not there was a correlation between the two different techniques and implant survival. The same could be said of bone grafting type. Even though xenogenic bone grafting has been used in many cases, as the authors stated, it would have been nice if statistical analysis was provided. Furthermore, the authors concluded that there was no correlation between approach to the maxillary sinus or bone graft material used and implant failure, but again, no statistical analysis was applied to provide evidence for such a conclusion.

Additionally, I would expect a more explicit explanation for implant failure. Perhaps implants failed due to low alveolar bone height, eventful resorption of bone grafts or complications from surgery. Furthermore, the authors failed to provide some surgical details, such as how many implants and what kind of sinus floor elevation approach were used, and whether a one- or two-stage technique was employed.

Lastly, the survival rate should be compared to other published studies^{4,5}. The presented survival rate was 90.9%¹, while the most recent systemic reviews stated that the annual rough surface implant survival rate using the lateral window technique with bone graft was 96.5% after 3 years⁴. Survival of implants using the transalveolar technique after 3 years and at least 1 year of functional loading was 92.8%⁵. Although Yoon et al.’s study included both transalveolar and lateral approaches in calculating survival rate, it is still important to describe the meaning of their acquired survival rate.

The authors should be credited for their hard work in preparing this extensive retrospective study. However, the lack of reader-friendly and detailed tables remains a limitation of this

Junho Lee

*Department of Periodontology, School of Dentistry, Seoul National University, 101, Daehak-ro, Jongno-gu, Seoul 110-768, Korea
TEL: +82-2-564-2875 FAX: +82-2-561-2855
E-mail: junholedds@gmail.com*

©This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/3.0/>), which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Copyright © 2014 The Korean Association of Oral and Maxillofacial Surgeons. All rights reserved.

study, followed by the lack of statistical analysis and discussion.

A sufficient number of sample sizes with a uniform implant system indicate that the study was well designed. I would be delighted to actively participate in your future basic and clinical implant dentistry research. Also, I would be thrilled to read better quality work from these authors in the near future.

Conflict of Interest

No potential conflict of interest relevant to this article was reported.

References

1. Yoon WJ, Jeong KI, You JS, Oh JS, Kim SG. Survival rate of Astra Tech implants with maxillary sinus lift. *J Korean Assoc Oral Maxillofac Surg* 2014;40:17-20.
2. Jurisic M, Markovic A, Radulovic M, Brkovic BM, Sándor GK. Maxillary sinus floor augmentation: comparing osteotome with lateral window immediate and delayed implant placements. An interim report. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2008;106:820-7.
3. Geurs NC, Wang IC, Shulman LB, Jeffcoat MK. Retrospective radiographic analysis of sinus graft and implant placement procedures from the Academy of Osseointegration Consensus Conference on Sinus Grafts. *Int J Periodontics Restorative Dent* 2001;21:517-23.
4. Pjetursson BE, Tan WC, Zwahlen M, Lang NP. A systematic review of the success of sinus floor elevation and survival of implants inserted in combination with sinus floor elevation. *J Clin Periodontol* 2008;35(8 Suppl):216-40.
5. Tan WC, Lang NP, Zwahlen M, Pjetursson BE. A systematic review of the success of sinus floor elevation and survival of implants inserted in combination with sinus floor elevation. Part II: transalveolar technique. *J Clin Periodontol* 2008;35(8 Suppl):241-54.