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Published online:
May
2016

International Journal of
Oral & Maxillofacial Surgery

Graftless Sinus Augmentation with Simultaneous Dental Implant Placement: Clinical Results and Biological Perspectives"

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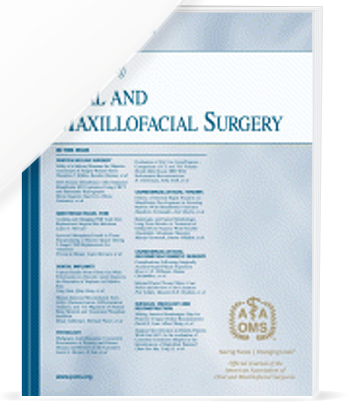

* M. Falah, D.-S. Sohn, S. Srouji; Oral & Maxillofacial Surgery, May 2016, Int. J. Oral Maxillofac.
DOI: 10.1016/J.IJOM.2016.05.006

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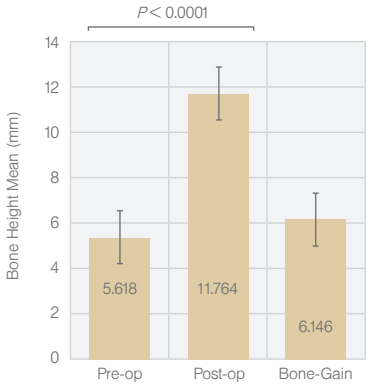

Table 1. Preoperative and postoperative alveolar bone height on the side of dental implant insertion, as determined from radiographic images. The graph presents bone height at the maxillary floor ($P < 0.0001$), as well as bone gain.

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SUMMARY.

Abstract

After a sinus lifting procedure, the compartment around the implants under the sinus mucosal lining in the sinus floor is filled with a blood clot from surrounding bleeding.

Aim

The aim was to evaluate the feasibility of bone formation following graftless sinus lifting with the simultaneous placement of dental implants.

Material and methods

Thirty graftless sinus lifting procedures were performed and 72 dental (SEVEN®, MIS Implants Technologie ,LTD.) implants placed in 18 consecutive patients, using the lateral window approach. Clinical and radiological follow-up was conducted throughout the 6 month healing period.

Results

Biopsies of 30 cases were collected at 6 months posttreatment: 15 biopsies were taken from the newly formed bone near the basal floor and 15 from the newly formed bone near the elevated membrane. New bone consolidation in the maxillary sinus was apparent radiologically and histologically at 6 months after sinus augmentation, providing an average 6.14 ± 1.34mm of bone-gain. Based on histological analysis and histomorphometric data, the consolidated bone in the augmented sinus comprised 56.7 ± 11.9% to 59.9 ± 13.4% vital bone tissue. (see Table.1)

Conclusions

Out of the 72 implants placed, only four failed, indicating a 94% overall implant survival rate. Based on this case series, blood clot can be considered autologous osteogenic graft material, to which osteoprogenitors can migrate, differentiate, and regenerate bone.