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Debel, M.^a, Toma, S.^a, Vandenberghe, B.^b, Brex, M.C.^a, Lasserre, J.F.^a

Alveolar ridge dimensional changes after two socket sealing techniques. A pilot randomized clinical trial
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^a Department of Periodontology, Université Catholique de Louvain (UCL)-Cliniques Universitaires Saint Luc, Avenue Hippocrate 10, Brussels, 1200, Belgium

^b Advimago, Center for Advanced Oral Imaging, Rue Emile Claus 42, Brussels, 1050, Belgium

Abstract

Objectives: This pilot study aimed to assess dimensional changes following two different alveolar socket sealing techniques. **Material and methods:** Twenty-one patients requiring tooth extraction and implant placement were randomly allocated to two different alveolar ridge preservation techniques. In the control group, demineralized bovine bone mineral (DBBM) and a gingival soft tissue punch were used to fill and seal the socket, whereas in the test group, the extraction socket was filled with DBBM and sealed with a hemostatic gelatin sponge. Digitalized impressions were taken before and 6 months after tooth extraction. The comparison was made on horizontal and vertical dimensional changes. **Results:** The mean vertical loss was 0.8 ± 0.6 mm for the control group and 0.7 ± 0.5 mm for the test one. No statistical difference was found between groups for the vertical shrinkage. The horizontal dimensional narrowing of the alveolar socket was respectively 7.1/4.0/2.5 mm at levels 1, 3, and 5 mm from a coronal reference level for the control group. The test group showed dimensional changes of 4.8/2.3/1.3 mm at the three different levels, respectively. A significant difference was found at levels 3 and 5 mm. Referring to a visual analog pain scale, patients reported more severe pain in the control group (5.7/10) when compared with the test group (2.8/10). The difference was statistically highly significant ($P \leq 0.001$). **Conclusions:** A significant difference was found between control and test groups regarding the horizontal dimensional changes and the post-operative pain. **Clinical relevance:** Regarding this primary result, the socket sealing technique with a hemostatic sponge provides an effective and inexpensive protocol with less post-operative pain. © 2020, Springer-Verlag GmbH Germany, part of Springer Nature.

Author Keywords

Alveolar ridge preservation; Bone substitute; Extraction; Socket sealing; Soft tissue management

Index Keywords

alveolar bone, alveolar bone loss, alveolar ridge augmentation, animal, bovine, controlled study, gingiva, human, pilot study, randomized controlled trial, surgery, tooth extraction, tooth socket; Alveolar Bone Loss, Alveolar Process, Alveolar Ridge Augmentation, Animals, Cattle, Gingiva, Humans, Pilot Projects, Tooth Extraction, Tooth Socket

Correspondence Address

Debel M.; Department of Periodontology, Avenue Hippocrate 10, Belgium; email: maxim.debel@gmail.com

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