



A randomized clinical trial to evaluate and compare implants placed in augmented vs. non-augmented extraction sockets. 3-year results

ABSTRACT

As the maintenance of long-term stability of implant solutions depends on the quality and quantity of the available alveolar bone supporting implantation, the preservation of the alveolar crest after tooth extraction is essential for the success of the rehabilitation. In order to evaluate the need for additional augmentation procedures at implant insertion, the aim of this randomized clinical study was to test the hypothesis of no difference in success rate, bone tissue remodelling and need for augmentation procedures for implants placed in grafted sites versus implants placed in naturally healed sites. 40 patients having at least one hopeless tooth were enrolled in the study. Extraction sockets allocated in the test group were grafted with cortico-cancellous porcine bone (OsteoBiol® mp3®, Tecnos®, Giaveno, Italy) and a collagen membrane (OsteoBiol® Evolution, Tecnos®) was used to completely cover the socket. In the control group no biomaterial was grafted. The ridge-preservation approach using porcine bone in combination with a collagen membrane significantly limited the reabsorption of hard tissue ridge after tooth extraction compared to extraction alone. All patients were followed up to 3 years. At the end of the study, the results were: one implant failed in the control group at the second stage of surgery (6 months after placement); one implant failed in the test group after 2 years of loading. The cumulative implant success rate at the 3-year follow-up visit reached 95% for both groups. No statistically significant differences were detected for marginal bone changes between the 2 groups.

CONCLUSIONS

Based on the results of the present investigation, it was concluded that implants placed into grafted extraction sockets exhibited a clinical performance similar to implants placed into non-grafted sites in terms of implant survival and marginal bone loss. However, the Authors underlined that *“it seems from these findings that extraction alone may lead to unpredictable healing patterns in which the remaining ridge does not often allow for an aesthetic and functional solution without the aid of an additional bone augmentation procedure simultaneously with implant placement.”*

ALVEOLAR REGENERATION

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