Alveolar bony crest preservation at implants installed immediately after tooth extraction: an experimental study in the dog.

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Abstract

AIM:

To evaluate the influence of deproteinized bovine bone mineral in conjunction with a collagen membrane, at implants installed into sockets in a lingual position immediately after tooth extraction, and presenting initial horizontal residual buccal defects <2 mm.

MATERIAL AND METHODS:

The pulp tissue of the mesial roots of (4)P(4) was removed in six Labrador dogs, and the root canals were filled with gutta-percha and cement. Flaps were elevated, and the buccal and lingual alveolar bony plates were exposed. The premolars were hemi-sectioned, and the distal roots were removed. Implants were installed in a lingual position and with the margin flush with the buccal bony crest. After installation, defects resulted at about 1.7 mm in width at the buccal aspects, both at the test and control sites. Only in the left site (test), deproteinized bovine bone mineral (DBBM) particles were placed into the defect concomitantly with the placement of a collagen membrane. A non-submerged healing was allowed.

RESULTS:

After 3 months of healing, one implant was found not integrated and was excluded from the analysis together with the contralateral control implant. All remaining implants were integrated into mature bone. The bony crest was located at the same level of the implant shoulder, both at the test and control sites. At the buccal aspect, the most coronal bone-to-implant contact was located at a similar distance from the implant margin at the test (1.7 ± 1.0 mm) and control (1.6 ± 0.8 mm) sites, respectively. Only small residual DBBM particles were found at the test sites.

CONCLUSION:

The placement of an implant in a lingual position into a socket immediately after tooth extraction may favor a low exposure of the buccal implant surface. The use of DBBM particles, concomitantly with a collagen membrane, did not additionally improve the outcome obtained at the control sites.