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CLINICAL IMPLANT DENTISTRY
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Ridge Preservation Using Composite Alloplastic Materials: A Randomized Control Clinical and Histological Study in Humans"

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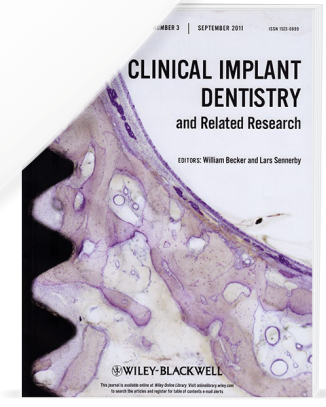

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	0mm	-3mm	-6mm
Test (baseline)	8.3±3.3	9.5±3.7	10.3±3.5
Control (baseline)	6.6±4.3	9.3±3.0	10.0±2.9
p-Value	.56	.23	.2
ΔTest	-0.96±2.63	0.03±2.32	-0.035±3.05
ΔControl	-1.33±2.25	-2.28±2.36	-2.28±2.43
p-Value	.35	.007	.02

Table 1. Horizontal Ridge Width (Mean±SD) at Baseline and the Change.

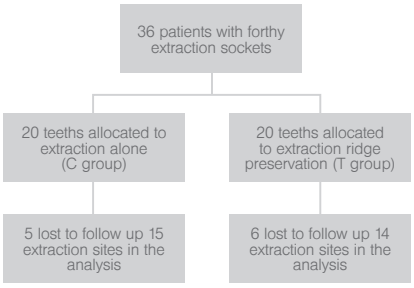

Figure 1. Flow diagram reports the number of participants, the number of extraction sites assigned to treatments, the follow-up period, and the number of sites in the analysis.

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SUMMARY.

Objectives

To evaluate (clinically, histologically, and histo-morphometrically) the use of composite materials (Biphasic calcium sulphate [BCS] (BONDBONE, MIS Implants Technologies) with β Tri-Calcium Phosphate (β-TCP) and Hydroxyapatite [HA] (4BONE BCH, MIS Implants Technologies) in extraction socket sites and compare it to un-disturbed natural healing.

Material and methods

Prospective clinical trial of 36 patients (40 extraction sockets) were randomly assigned to either test or control group. Alveolar ridge horizontal dimension was measured in the middle of the socket at crest and 3mm and 6mm subcrestally. Crestal vertical height was measured at baseline surgery and at 4 month re-entry, at which time bone core biopsies were harvested from the center of the edentulous ridge. Histo-morphometric evaluation of the samples was performed using hematoxylin & eosin stains and morphometric software.

Results

The change in horizontal ridge width was higher in the control compared to the experimental group: 2.28±2.36mm versus 0.03±2.32mm (p=.007) at -3 mm and 2.28±2.43 versus 0.035±3.05 (p=.02) at -6mm, for the experimental and control sites, respectively. The vertical distance form bone crest to neighboring horizontal line interconnecting the neighboring teeth was minimal in both groups (0.307±2.01mm versus 0.14±2.03mm [p=0.41]). Residual scaffolds occupied 15.99±11.4% of the volume in the grafted (test) sites while bone area fraction was not statistically different among the groups (47.7±10.6% versus 52.6±11.6%, test versus control, respectively p=.39). The percentage of connective tissue in the control group was significantly higher that test group (36.3±19.4% versus 46.7±10.6% test versus control, respectively, p=.013). (See Table 1)

Conclusions

Ridge preservation technique using a combination of two synthetic bone grafts β-TCP and HA with BCS resulted in greater stability in the horizontal dimension after 4 months.