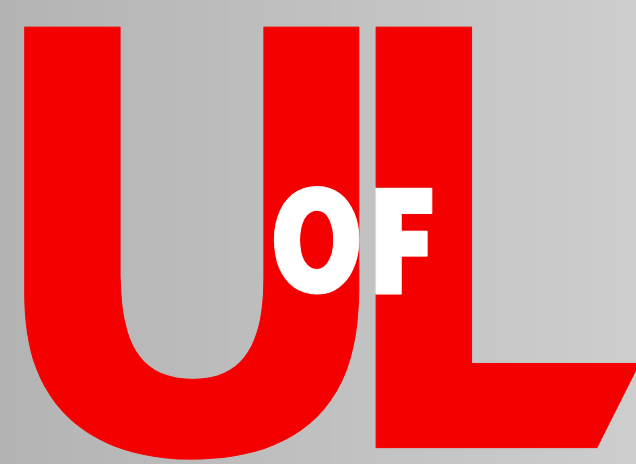




Ridge Preservation Comparing the Clinical and Histologic Healing of Calcium Phosphosilicate (CPS) Putty Alloplast Graft Versus Combination Mineralized/Demineralized Putty Allograft

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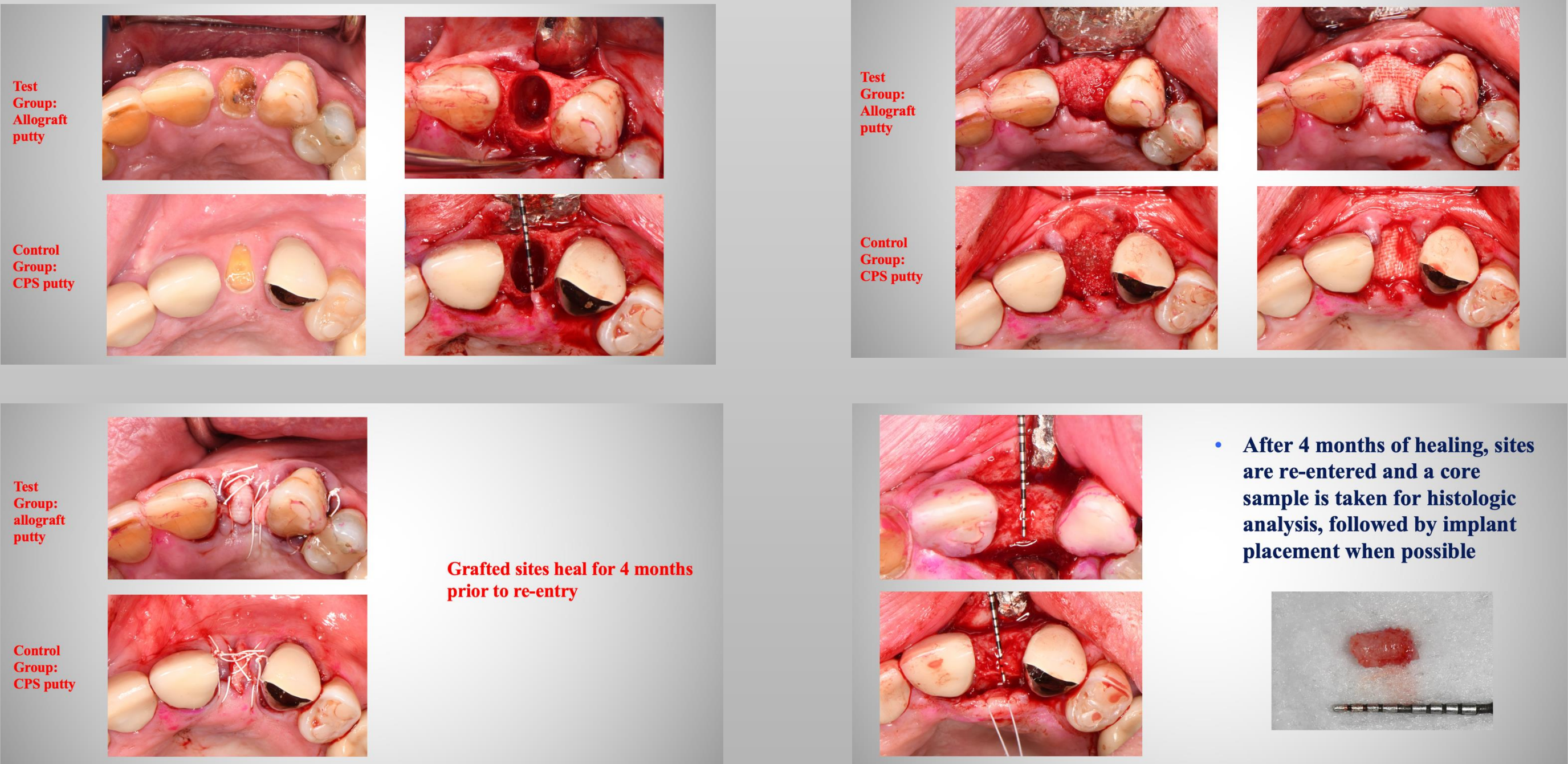
BACKGROUND

Various types of bone grafts have been used for ridge preservation including, particulate allografts, xenografts, as well as synthetic alloplast grafts. The primary aim of this study was to compare, after four months, the clinical and histologic results of a combination demineralized/mineralized putty allograft vs. synthetic calcium phosphosilicate (CPS) putty alloplast graft in socket preservation.

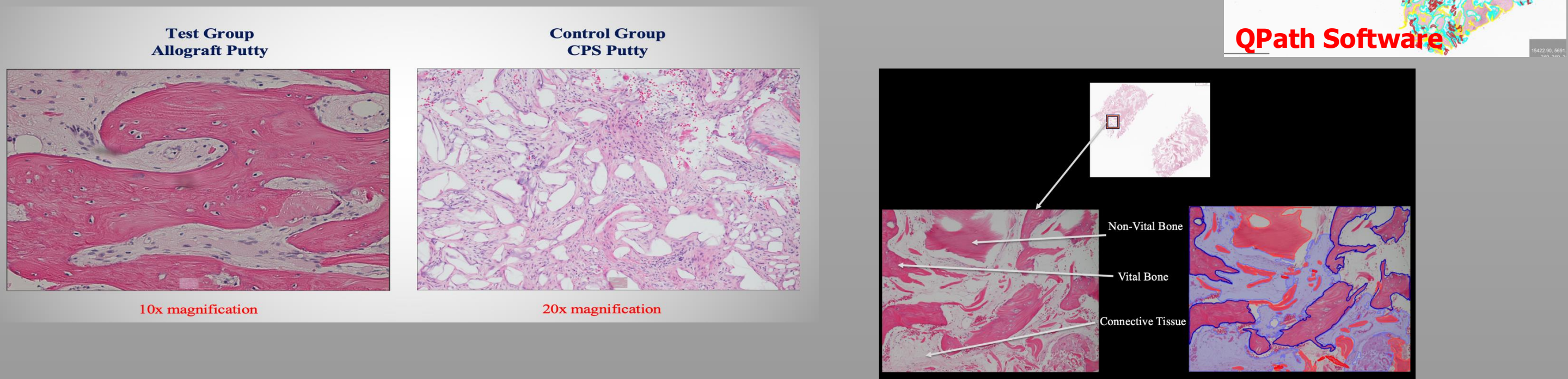
METHODS

Thirty patients with non-molar teeth bordered by natural dentition requiring extraction and ridge preservation, were randomly assigned to either receive the CPS putty or the combination demineralized/mineralized putty allograft. Cone-beam computed tomography (CBCT) was used to measure the ridge dimensions pre- and post-operatively at the crest, 3 and 5mm apically. Clinical measurements included probing depths, attachment level, bleeding on probing, mobility, keratinized tissue width, plaque and gingival index. Patients were seen for 1-, 2- and 6-week follow-ups and after four months of healing a new CBCT was taken. A bone core of the healed ridge was taken at the time of implant placement for histologic analysis using QPath software. Implants were placed and Osstell measurements (ISQ values) were used to record implant stability.

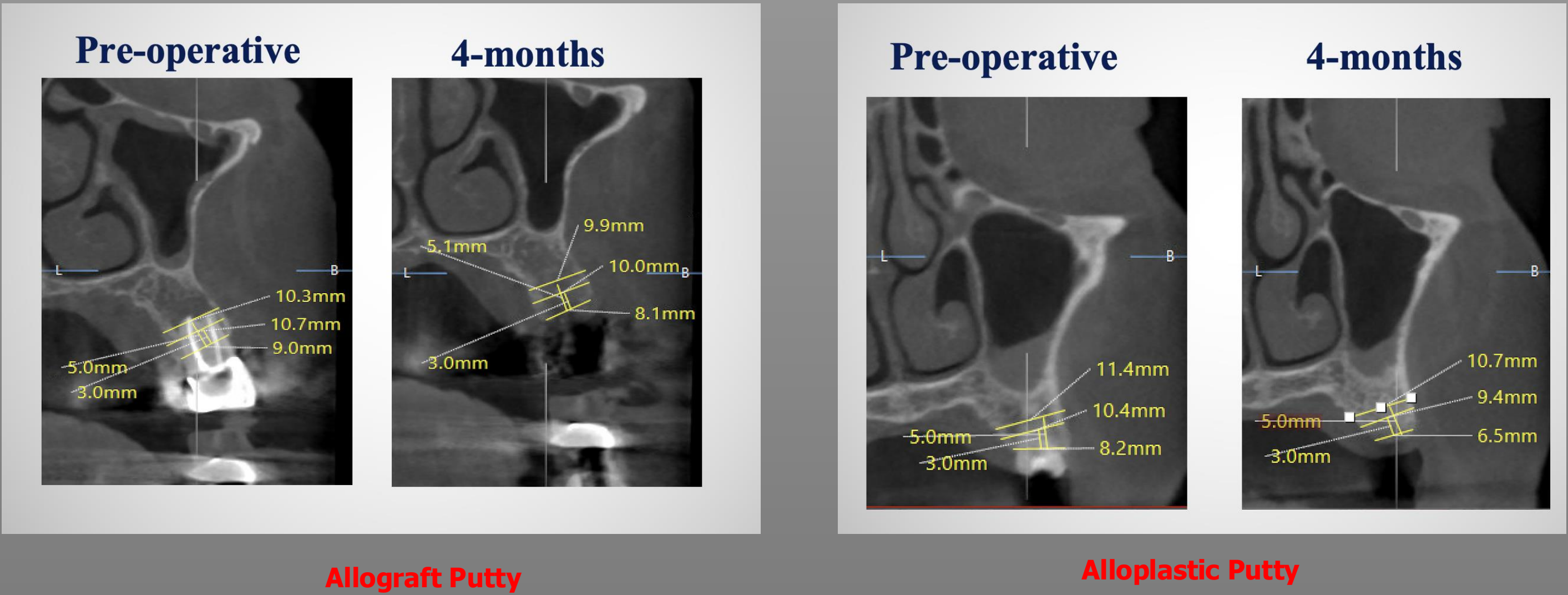
INTRAOPERATIVE



HISTOLOGY



CBCT



RESULTS

Primary Variable: Horizontal Ridge Width Change at Three Different Vertical Points

	Novabone Pre-Op	NovaBone Re-Entry	Biohorizons Pre-Op	Bio-horizons Re-Entry
Crest	8.55mm	6.51mm	7.83mm	6.55mm
3mm	9.84mm	9.01mm	9.04mm	8.74mm
5mm	9.85mm	9.57mm	9.80mm	9.21mm

Secondary Variable: Gingival Tissue Thickness

	Novabone	Biohorizons
Gingival Margin	+0.503mm (52.56% increase)	+0.440mm (48.89% increase)
5mm Apical	+0.396mm (45.83% increase)	+0.357mm (39.10% increase)

Secondary Variable: Percent Vital Bone, Non-Vital Bone, Connective Tissue

Group	% Vital Bone	% Non-Vital Bone	% Connective Tissue
Control (Alloplast)	21.4%*	7.08%*	70.8%*
Test (Allograft)	39.2%*	22.1%*	39.7%*

Summary of significant results:

Treated tooth summary:

In both the NovaBone & BioHorizons, the measurements of GT points 1 and 2 and GI TB and GI TL were significantly different from pre-op to re-entry.

For NovaBone, the horizontal 3mm measurement was significantly different from pre-op to re-entry.

For BioHorizons, the measurements of horizontal crest, stent MB were significantly different from pre-op to re-entry.

Differences in the change from pre-op to re-entry were calculated as: re-entry measurement minus pre-op measurement. There were no significant differences between changes in the control and test group.

CONCLUSIONS

Alveolar ridge preservation can be successfully performed with allograft putty or CPS putty and a regenerative tissue matrix membrane, resulting in minimal changes in ridge width/height. Higher percentages of vital bone were seen with the use of allograft putty.