

SCIENCE FLASH

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Scientific Source

McGuire M K, Nunn M. J Periodontol August 2003: Evaluation of human recession defects treated with coronally advanced flaps (CAF) and either enamel matrix derivative or connective tissue. Part 1: Comparison of clinical parameters.

Study Design

- 20 patients with Miller's Class II facial recession on incisors/premolars (17 completed study)
- Randomized, controlled, single center, split mouth
- Primary outcome is change in recession depth with secondary outcomes of CAL gain, PD reduction, and gingival height
- Recession of ≥ 4 mm and ≥ 3 mm width. Teeth with ≤ 2.5 mm of keratinized tissue
- Measurements at baseline, 6, 9 and 12 months
- Two treatment modalities (Emdogain + CAF, CTG + CAF)

Results

Case courtesy of Dr. Michael K. McGuire

Emdogain in conjunction with a coronally advanced flap



Baseline

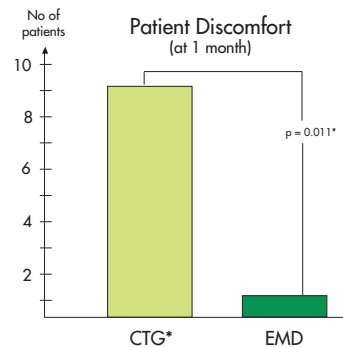
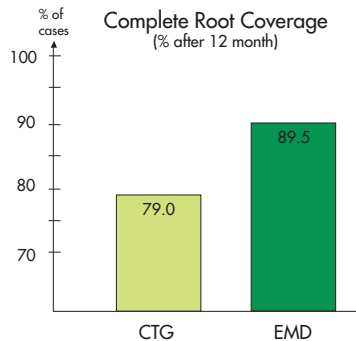
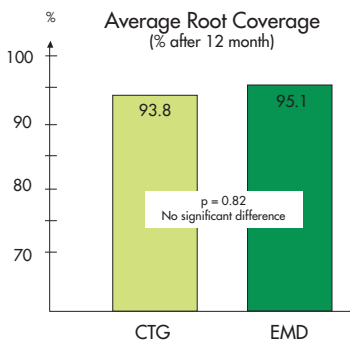
12 months later

Connective tissue graft with a coronally advanced flap



Baseline

12 months later



- Equivalent results for recession depth, CAL gain, PD reduction and gingival height

Study Observations

- 95.1 % average root coverage after treatment with Emdogain and 93.8% average root coverage with CTG
- Complete root coverage was 89.5% in treatment with Emdogain as compared to CTG
- More patients reporting high discomfort level with CTG at 1 month as compared to Emdogain
- The amount of keratinized tissue achieved with CTG was statistically significantly higher than with Emdogain
- Both treatments demonstrated a statistically significant change in keratinized tissue from baseline to 12 months

*CTG requires a second surgical intervention as compared to Emdogain.

ABSTRACT

McGuire M K, Nunn M. *J Periodontol* 2003;74:1110-1125: Evaluation of human recession defects treated with coronally advanced flaps and either enamel matrix derivative or connective tissue. Part 1: Comparison of clinical parameters.

Background: Recession defects around teeth have been treated with a variety of surgical techniques. Most of the literature suggests that the subepithelial connective tissue graft has the highest percentage of mean root coverage with the least variability. Previous studies have demonstrated that enamel matrix derivative (EMD) has the ability to improve clinical parameters. The purpose of this study was to compare the clinical efficacy of enamel matrix derivative placed under a coronally advanced flap to subepithelial connective tissue placed under a coronally advanced flap in patients with recession type defects.

Methods: Twenty patients with incisors or premolars presenting with a facial recession of ≥ 4 mm in contralateral quadrants of the same jaw were treated: 17 patients completed the study. One tooth in each patient was randomized to receive either a coronally advanced flap with a subepithelial connective tissue graft (control) or a coronally advanced flap with EMD (test). Clinical parameters measured at baseline and at 6, 9, and 12 months included amount of recession; width at the coronal extent of the gingival defect; width of keratinized tissue; probing depth; clinical attachment level; inflammation score; plaque score; plaque index; alveolar bone level; tissue texture and color; and patient perception of pain, bleeding, swelling, and sensitivity.

Results: Results for both the test and control groups were similar for all measured clinical parameters with the exception of early healing, self-reported discomfort, and the amount of keratinized tissue obtained. The coronally advanced flap with EMD was superior to the subepithelial connective tissue graft with regard to early healing and patient-reported discomfort, whereas the subepithelial connective tissue graft demonstrated greater amount of keratinized tissue during the 12-month evaluation period. However, both the test and control showed a significant increase in the amount of keratinized tissue at 9 and 12 months compared to baseline. No significant difference in the amount of root coverage was found between the test and control groups ($n = 19$; $P = 0.82$). On average, a gain of 4.5 mm (range 4 to 8 mm) tissue covering the previously exposed root surfaces was achieved with both treatment groups. The average percentages of root coverage for control and test groups were 93.8% and 95.1% respectively. One hundred percent root coverage was obtained 89.5% of the time with the coronally advanced flap with EMD and 79% of the time with the subepithelial connective tissue graft.

Conclusion: Based on the results of this investigation, the addition of EMD to the coronally advanced flap resulted in root coverage similar to the subepithelial connective tissue graft but without the morbidity and potential clinical difficulties associated with the donor site surgery. *J Periodontol* 2003;74:1110-1125.

