Comparative 6-Month Clinical Study of a Semilunar Coronally Positioned Flap and Subepithelial Connective Tissue Graft for the Treatment of Gingival Recession

Sandro Bittencourt,* Érica Del Peloso Ribeiro,* Enilson A. Sallum,* Antônio W. Sallum,* Francisco H. Nociti Jr.,* and Márcio Zaffalon Casati*

Background: The purpose of this randomized clinical trial was to compare the outcome of gingival recession therapy using the semilunar coronally positioned flap (SCPF) or the subepithelial connective tissue graft (SCTG).

Methods: Seventeen patients with bilateral Miller Class I buccal gingival recessions (≤4 mm) in maxillary canines or premolars were selected. The recessions were randomly assigned to receive either the SCPF or the SCTG. Recession height (RH), recession width (RW), width of keratinized tissue (WKT), thickness of keratinized tissue (TKT), probing depth (PD), and clinical attachment level (CAL) were measured at baseline and 6 months post-surgery. Patient satisfaction with esthetics, root sensitivity, and postoperative pain was also evaluated.

Results: The average percentages of root coverage for SCPF and SCTG were 90.95% and 96.10% (P < 0.05), respectively, and the complete root coverage observed was 52.94% and 76.47%, respectively. The SCTG showed a statistically significant increase in TKT (P < 0.05). There were no significant differences between the two groups with regard to RH, RW, WKT, PD, and CAL. The esthetic condition after both treatments was considered satisfactory by the patients.

Conclusion: The findings from this study indicate that SCPF and SCTG can be successfully used to treat Class I gingival recession. J Periodontol 2006;77:174-181.

KEY WORDS
Connective tissue; gingival recession/surgery; gingival recession/therapy; grafts; surgical flaps; tooth root/surgery.

Gingival recession is defined as the location of the marginal tissue apical to the cemento-enamel junction (CEJ). This condition may be associated with periodontal disease or may be related to mechanical factors such as toothbrushing. Indications for root coverage (RC) include esthetic demand, root hypersensitivity, prevention or management of root caries and cervical abrasion, enhancement of restorative outcomes, and prevention of disease progression in areas where hygiene cannot be adequately maintained.

Several surgical approaches have been used to achieve root coverage. The subepithelial connective tissue graft (SCTG) procedure, which uses a variety of flap designs, was introduced for root coverage in 1985. This technique has been shown to be a predictable means to treat gingival recession.

The semilunar coronally positioned flap (SCPF) procedure was introduced by Tarnow in 1986. This technique causes no disturbance of the adjacent papillae, no shortening of the vestibule, and no tension on the flap. Besides these advantages, no sutures are needed. Case reports have shown a high success rate for this procedure. Nevertheless,
to our knowledge, no long-term controlled study has provided outcome assessment data with regard to predictability and percentage of recession resolution using this technique.

Thus, the objective of this randomized clinical trial was to compare the outcome of gingival recession therapy using SCTG or SCPF in a split-mouth design.

MATERIALS AND METHODS
Study Population
Seventeen patients, 11 females and six males, 21 to 52 years of age (mean age, 33.5 years), were included in the study from June to December 2003. All patients were non-smokers who were periodontally and systemically healthy, with no contraindications for periodontal surgery, and had not taken medications known to interfere with periodontal tissue health or healing. Power analysis indicated that with 17 subjects, the study would have >85% power to detect a 1-mm difference in recession depth between the two groups. The following inclusion criteria were used: presence of bilateral Miller Class I gingival recessions (≤4 mm) in maxillary canines or premolars, probing depth (PD) <3 mm without bleeding on probing, width of keratinized tissue (WKT) ≥2 mm, and tooth vitality and absence of caries or restorations in the areas to be treated.

The subjects were selected from patients referred for dental treatment at the School of Dentistry at Piracicaba, State University of Campinas, Brazil. Informed consent was signed by each of the subjects after thorough explanation of the nature, risks, and benefits of the clinical investigation and associated procedures. The University’s Ethical Committee approved the consent form and experimental protocol.

Initial Therapy
The patients initially completed a plaque control program, including oral hygiene instructions, to eliminate habits related to the etiology of the recession, scaling, root planing, and crown polishing. The patients were instructed to perform a non-traumatic brushing technique using a soft toothbrush. Visible plaque index (VPI) and sulcus bleeding index (SBI) were used to assess gingival health conditions throughout the study.

Clinical Parameters
All measurements were recorded by a blinded, trained, and calibrated examiner (EDPR) at baseline and 6 months after surgery and quantified with a caliper† of 0.01-mm resolution. The baseline measurements were recorded 28 days after the initial therapy.

Measurements were done from the incisal border of the tooth to the CEJ (reference CEJ), to the mucogingival junction (reference MGJ), and to the gingival margin (reference GM) using an endodontic finger spreader attached to a rubber stopper. The following clinical parameters were assessed: 1) recession height (RH), measured as the distance from the CEJ to the GM, calculated as ref GM – ref CEJ; 2) WKT, measured as the distance between the most apical point of the GM and the MGJ, calculated as ref MGJ – ref GM; 3) recession width (RW), measured from one border of the recession to another at the CEJ; 4) PD, measured as the distance from the GM to the bottom of the gingival sulcus; 5) clinical attachment level (CAL), calculated as RH + PD; and 6) thickness of the keratinized tissue (TKT).

TKT was assessed at two times: TKT1, 2 mm apical to the GM before surgery and TKT2, 2 mm apical to the GM after surgery. After carefully removing the spreader, penetration depth was measured with a caliper of 0.01-mm resolution. The identification of the MGJ was facilitated by staining the tissues with iodine solution.† RW and PD were measured using a periodontal probe§§ with a rubber stopper.

Surgical Procedures
Surgical procedures were done by one operator (SB). Bilateral gingival recessions were randomly assigned (by coin toss) to one of the treatments: 1) the SCPF group or 2) the SCTG group. Both procedures were performed, in the same patient, with an operative microscope§ with an interval between surgeries of 4 weeks.

Before surgery, each patient was given a single dose of 500 mg sodic dipyrone† as an analgesic. Extrarotal antisepsis was performed with a 2.0% chlorhexidine solution§ and intraoral antisepsis with 0.12% chlorhexidine rinse.** Lidocaine (2.0%) with 1:100,000 epinephrine†† was used as anesthesia. The exposed root surface was planed with finishing burs‡‡ and curets§§ to remove edges, grooves, and dental plaque and to reduce the convexity of the most coronal portion of the root.

For the SCPF group (Fig. 1), a semilunar incision was made extending from the mesial papilla to the distal papilla of the tooth with the recession and following the curvature of the receded GM (Fig. 1B). The most apical distance of this incision to the GM was obtained, adding the bone sounding measurement to the RH. This procedure guaranteed that the apical part of the flap rested on bone after it was brought down to cover the exposed root. A sulcular partial-thickness incision was made with a miniblade|| so that it reached the semilunar incision. Once complete flap freedom

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† Absolute, Mitutoyo Sul Americana, Suzano, Brazil.
‡ Shiller’s, Proderma Farmácia de Manipulação, Piracicaba, Brazil.
§§ Hu-Friedy, Jacarepaguá, Rio de Janeiro, Brazil.
§§§ DF Vasconcelos, São Paulo, Brazil.
†‡ EMS Indústria Farmacêutica, Vinhedo, Brazil.
¶ Proderma Farmácia de Manipulação.
** NoFlak, Odontis, Rio de Janeiro, Brazil.
†† Alphacaine, DFL, Rio de Janeiro, Brazil.
‡‡ Komet, Besigheim, Germany.
§§ Mini-Gracey, Hu-Friedy.
|| 6961 Miniblade, Swann-Morton, Sheffield, U.K.
was achieved, the flap was easily advanced as coronally far as possible without tension and positioned properly (Fig. 1C). A moist gauze pad was placed with light pressure perpendicular to the flap at its new level for 5 minutes. An adhesive was applied in the coronal portion of the flap to keep it in the new position.

For the SCTG group (Figs. 2 and 4), an initial horizontal incision was made slightly coronal to the CEJ at the distal/mesial papillae of the tooth with the recession. A second incision, 1 to 2 mm apart and parallel to the first incision, was made apically. Both incisions were performed; 1 mm deep at a $90^\circ$ angle to the tissue surface (Fig. 2B). A sulcular incision was made linking the second incisions using a microsurgical blade. The blade was progressively inserted (2 to 3 mm), extending beyond the MGJ to create a uniform split-thickness flap. In addition, the deepest fibers of the flap were dissected to eliminate tension and to permit the coronal displacement of the flap. The tissue between the two incisions was partially removed with scissors to obtain a uniform receptor site that permitted primary closure.

A periodontal probe was used to measure the size of the recipient site (i.e., from the center of the mesial papilla to the center of the distal papilla). These measurements were transferred to the donor site. A connective tissue graft was obtained from the palate using a parallel blade described by Harris, yielding 1-mm-thick connective tissue grafts. The epithelial band of the graft was removed and discarded. The tissue obtained was immediately placed on the root surface (Fig. 2C).

The microsutures were performed in two stages: approximation and coaptation (Fig. 2D). The aim of the approximation suture was to place the edge of the flap at the base of the remaining papilla and to secure the graft in position. The passive closure of the wound margins without tension was carried out with two or three interrupted coaptation sutures, depending on the width of the papilla. The interrupted sutures were done without passing through the graft. The donor area was then closed with continuous sutures.

For both groups, a thin layer of periodontal dressing was applied to the recipient area.

**Post-Surgical Care**

Patients were instructed to take analgesic medication (500 mg sodic dipyrone) only if they experienced pain. Microsutures and periodontal dressing were removed after 7 days. All patients were instructed to discontinue toothbrushing around the surgical sites the first 30 days after surgery. During this period, plaque control was provided by rinsing with a 0.12% chlorhexidine digluconate solution twice a day. After this period, gentle toothbrushing with a soft-bristle toothbrush was permitted.

Subjects were enrolled in a periodontal maintenance program (professional plaque control) weekly for the first 4 weeks and then monthly until the end of the study period.

**Patient Satisfaction**

After 6 months, a questionnaire was given to each patient. The questionnaire recorded the results of the procedures relative to esthetics, root sensitivity (before and after surgery), and the postoperative period. The questionnaire was administered by a research assistant, independent of the surgeon. In terms of esthetic outcome, patients expressed their opinion of each treated tooth by selecting one of the following choices: bad, sufficient, good, or excellent. In terms of the pain experienced in the postoperative period, patients selected one of the following choices: none, low, moderate, or severe. Patients were also asked to indicate if one technique was preferable to the other in terms of the postoperative period and esthetics. The patients had been instructed to mark when (date and hour) the analgesic medication was taken. The subject’s overall postoperative pain was also assessed using a

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### Figure 1.

SCPF: preoperative view of recession on the maxillary left canine (A); semilunar incision (B); flap advanced coronally (C), and 6 months postoperative (D).

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¶¶ Loctite, Itapevi, Brazil.
## 6961 Miniblade, Swann-Morton.
*** Castroviejo, G. Hartzell & Son, Concord, CA.
††† 6-0 Polyglactin 910 (Vicryl), Ethicon, Johnson & Johnson Professional Products, São José dos Campos, Brazil.
‡‡‡ 8-0 Polyglactin 910 (Vicryl), Ethicon, Johnson & Johnson Professional Products.
§§§ GC America, Alsip, IL.
100-mm horizontal visual analog scale (VAS), with the left endpoint marking no pain and the right endpoint marking extreme pain.

**Statistical Analysis**

Descriptive statistics were expressed as mean ± SD. Repeated measure analysis of variance was used for examination of differences within and between treatments regarding the PD, CAL, and WKT parameters. The non-parametric Wilcoxon test was used to detect differences within and between groups regarding the percentage of RC, TKT, RH, and RW parameters. The Pearson correlation coefficient was used to determine possible correlation between TKT at baseline and RH reduction. The Wilcoxon test was applied to compare the pain intensity and the number of pills used in the postoperative period. A significance level of 0.05 was employed in all statistical comparisons.

**RESULTS**

Healing was uneventful for all 17 patients (34 recessions), and no patients were excluded from the study. The recessions were located in 19 canines, 14 first premolars, and one second premolar. Full-mouth SBI and VPI were maintained below 20%, indicating a good standard of supragingival plaque control during the study period.

Pre- and post-surgery recordings for the SCPF and SCTG groups are shown in Table 1. No statistically significant differences were observed between groups in any of the clinical parameters at baseline. In the SCPF group, statistically significant changes from baseline were found for RH, RW, WKT, and CAL. RH decreased from 2.20 ± 0.56 mm to 0.21 ± 0.25 mm, corresponding to a mean root coverage of 90.95% ± 11.46%. In the SCTG group, statistically significant changes from baseline were found for all parameters, except PD. RH decreased from 2.15 ± 0.59 mm to 0.10 ± 0.19 mm, corresponding to a mean root coverage of 96.10% ± 7.69%. A statistically significant difference favoring the SCTG group was observed in the increase of TKT.

Complete root coverage was accomplished in 52.94% (nine out of 17) of the treated cases in the SCPF group and in 76.47% (13 out of 17) in the SCTG group (Table 2).

There was no significant correlation between TKT at baseline and the amount of root coverage at 6 months for either technique.

The esthetic outcome was as follows: in the SCPF group, nine subjects out of 17 reported an excellent esthetic result, seven indicated a good result, and one reported a sufficient result, while in the SCTG group, 12 subjects reported an excellent result and the remaining five a good result (Table 3). When asked about the preferred procedure, the two treatments demonstrated essentially equal results (Table 4).

Regarding the postoperative period, no patients in the SCPF group experienced pain, while seven patients in the SCTG group took analgesic pills on the first day, but only two took more than one pill. All seven patients indicating a greater discomfort in the SCTG group alleged a painful palate wound as the cause. The median VAS pain score was 30 mm.
(ranging from 20 to 60 mm) in the SCTG group and 0 mm in the SCPF group. The pain intensity and the number of pills taken were statistically different between groups only on the first day, favoring the SCPF group (Table 5). In the beginning of the study, seven patients reported hypersensitivity, but after 6 months, there was no evidence of residual or new sensitivity.

DISCUSSION
The objective of this split-mouth, randomized, single-blind, controlled clinical trial was to compare the SCPF procedure to the SCTG procedure for the treatment of buccal gingival recessions. Considering the study design and the groups’ homogeneity at baseline, differences in clinical outcomes can be attributed to the treatments employed. Present data indicate that the two surgical approaches adopted in the study were highly effective and predictable in obtaining root coverage of gingival recessions and esthetic improvements (Figs. 1D, 2E, 3B, and 4B). In fact, both techniques resulted in a very high percentage of root coverage (90.95% in the SCPF group and 96.10% in the SCTG group), and complete soft tissue root coverage was achieved in the majority of treated cases (52.94% in the SCPF group and 76.47% in the SCTG group). These results are in agreement with studies using various flap and graft techniques in controlled clinical trials. However, the comparison between studies is compromised by the different methods used to measure the clinical parameters. The measurement techniques that have a resolution of 1.0 or 0.5 mm tend to provide more favorable results than those that have a resolution of 0.1 mm. For example, the residual recessions (ranging from 0.26 to 0.62 mm) observed in the present study probably would not be quantified if the caliper was not used.

The decision to use the SCPF technique, as designed by Tarnow, was dependent on factors related to the height and class of gingival recession and the conditions of the keratinized tissue (width and thickness). SCPF was designed to cover minimal (1 to 3 mm) gingival recessions with at least 3 or 4 mm of attached gingival recession remaining. However, in the present study, this procedure was expanded to gingival recessions with a maximum of 4 mm height and a minimum of 2 mm of keratinized tissue. In addition, to our knowledge, the present study appears to be the first to demonstrate the stability and predictability of this technique in a controlled clinical trial.

A significant decrease in the width of the gingival recession was observed in both groups in the present study (2.89 mm for the SCPF group and 3.13 mm for the SCTG group). RW >3 mm is considered less favorable for root coverage. However, in the present study, even though RW was >3 mm, it was possible to obtain a good percentage of complete root coverage.

At 6 months after surgery, the gain in WKT was 1.15 mm for SCTG and 0.90 mm for SCPF, with no statistical difference between groups. The gain in the SCTG group is explained by the established concept that the information in the connective tissue ultimately determines the character of the surface epithelium. The granulation tissue that fills the semilunar area will generally turn into the same type of tissue that was present before the repositioning.
of the tissue, and this explains the increase in WKT for the SCPF group. Studies\textsuperscript{17-29} show a great variability in this increase (from 0.55 to 3.54 mm), which is probably due to the following factors: the method used to identify the mucogingival position (visual or chemical), the initial height of gingival recession, the surgical approach, and the inclusion of Class II gingival recessions.

It was demonstrated that, as a result of the root coverage procedure with SCTG, a marked increase is to be expected not only in the WKT but also in the TKT. At 6 months, intergroup analyses showed a statistically different increase in TKT between SCTG (0.46 mm) and SCPF (0.03 mm). The findings of the present study are similar to those presented by Müller et al.\textsuperscript{24} (0.56 mm), da Silva et al.\textsuperscript{27} (0.44 mm), and Martins et al.\textsuperscript{34} (0.72 mm). Different from the present study, Paolantonio et al.\textsuperscript{20} used a 2.5-mm distance and parallel blade scalpel and, therefore, showed a greater increase in the gingival thickness (1.15 mm).

The present study shows that the increase in TKT does not lead to additional root coverage outcomes. Previous studies\textsuperscript{20,24} have shown that the increase in the thickness of gingival tissue is a desired effect in decreasing the possibility of recurrence of gingival recession, since chronic trauma from injuries during inadequate toothbrushing or inflammatory reactions in thin marginal tissue may result in gingival

<table>
<thead>
<tr>
<th>Treatment</th>
<th>100%</th>
<th>99% to 85%</th>
<th>84% to 70%</th>
<th>69% to 55%</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCTG</td>
<td>13</td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>SCPF</td>
<td>9</td>
<td>3</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>

**Table 1.**
Clinical Parameters (mean ± SD) at Baseline and 6 Months Postoperatively

<table>
<thead>
<tr>
<th>Parameter</th>
<th>SCTG</th>
<th>SCPF</th>
<th>Difference (SCTG – SCPF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RH</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>2.15</td>
<td>2.20</td>
<td>0.05 ± 0.58</td>
</tr>
<tr>
<td>6 months</td>
<td>0.10</td>
<td>0.21</td>
<td>0.11 ± 0.31</td>
</tr>
<tr>
<td>Difference</td>
<td>2.05</td>
<td>1.99</td>
<td>0.06 ± 0.47</td>
</tr>
<tr>
<td>RW</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>3.58</td>
<td>3.74</td>
<td>0.16 ± 0.57</td>
</tr>
<tr>
<td>6 months</td>
<td>0.45</td>
<td>0.85</td>
<td>0.40 ± 1.65</td>
</tr>
<tr>
<td>Difference</td>
<td>3.13</td>
<td>2.89</td>
<td>0.24 ± 1.66</td>
</tr>
<tr>
<td>WKT</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Baseline</td>
<td>3.30</td>
<td>3.52</td>
<td>0.22 ± 0.95</td>
</tr>
<tr>
<td>6 months</td>
<td>4.45</td>
<td>4.42</td>
<td>0.03 ± 1.71</td>
</tr>
<tr>
<td>Difference</td>
<td>1.15</td>
<td>0.90</td>
<td>0.25 ± 1.15</td>
</tr>
<tr>
<td>TKT</td>
<td></td>
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<tr>
<td>Baseline</td>
<td>1.01</td>
<td>1.04</td>
<td>0.03 ± 0.25</td>
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<tr>
<td>6 months</td>
<td>1.47</td>
<td>1.07</td>
<td>0.40 ± 0.45</td>
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<tr>
<td>Difference</td>
<td>0.46</td>
<td>0.03</td>
<td>0.43 ± 0.54</td>
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<tr>
<td>PD</td>
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<tr>
<td>Baseline</td>
<td>1.41</td>
<td>1.49</td>
<td>0.08 ± 0.34</td>
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<tr>
<td>6 months</td>
<td>1.67</td>
<td>1.52</td>
<td>0.15 ± 0.48</td>
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<td>Difference</td>
<td>0.26</td>
<td>0.03</td>
<td>0.23 ± 0.50</td>
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<tr>
<td>CAL</td>
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<tr>
<td>Baseline</td>
<td>3.56</td>
<td>3.69</td>
<td>0.13 ± 0.71</td>
</tr>
<tr>
<td>6 months</td>
<td>1.77</td>
<td>1.73</td>
<td>0.04 ± 0.57</td>
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<tr>
<td>Difference</td>
<td>1.79</td>
<td>1.96</td>
<td>0.25 ± 0.62</td>
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</table>

* Within-group comparison (P < 0.05).
† Between-group comparison (P < 0.05). All other within- and between-group comparisons were not significant (P > 0.05).

**Table 2.**
Frequency of Recession Coverage With SCTG and SCPF

**Table 3.**
Patient Evaluation of Esthetics Achieved

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Excellent</th>
<th>Good</th>
<th>Sufficient</th>
<th>Bad</th>
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<tbody>
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<td>9</td>
<td>7</td>
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</tr>
<tr>
<td>SCTG</td>
<td>12</td>
<td>5</td>
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<td>0</td>
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</table>

**Table 4.**
Patient Preference for SCTG or SCPF Based on Esthetics Achieved

<table>
<thead>
<tr>
<th>SCPF Better</th>
<th>SCPF = SCTG</th>
<th>SCTG Better</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>9</td>
<td>4</td>
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</tbody>
</table>

**Table 5.**
Pain Intensity and Number of Pills Taken in the First 3 Days After Surgery

<table>
<thead>
<tr>
<th>Day</th>
<th>Pain Intensity</th>
<th>Number of Pills Taken</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SCTG</td>
<td>SCPF</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1.44</td>
<td>0.00</td>
<td>0.02*</td>
</tr>
<tr>
<td>2</td>
<td>0.24</td>
<td>0.00</td>
<td>0.32</td>
</tr>
<tr>
<td>3</td>
<td>0.18</td>
<td>0.00</td>
<td>0.32</td>
</tr>
</tbody>
</table>

* Statistically significant (P < 0.05).
recession. However, Wennström and Zucchelli, 35 in a 2-year prospective clinical study, concluded that changes in toothbrushing habits may be of greater importance than increased gingival thickness for long-term maintenance of the surgically established position of the soft tissue margin. Only the results of long-term follow-up studies can determine if the increase in TKT makes the treated sites less susceptible to future recession.

There is a need to investigate root coverage procedures as they relate to patient-oriented outcomes, such as esthetics, root sensitivity, and postoperative morbidities. 3,36 SCPF and SCTG showed an esthetic improvement after 6 months, and patients were generally satisfied with both procedures (94.1% and 100%, respectively). These results are slightly superior to other reports that used SCTQ. 17,28,37 The good esthetic results detected in the present study could be due to the use of the operative microscope, which offers advantages such as enhanced visual acuity by magnification, improved illumination of the field, and more accurate and atraumatic manipulation of the soft tissue. 9,38 Particularly, thin tissues could be easily manipulated with the use of the microscope. This can explain why correlation between initial gingival thickness and reduction in gingival recession was not observed. Also, the harvested graft thickness (1 mm) contributed to the esthetic results obtained in the SCTG group. When graft thickness was >1 mm, the esthetic harmony of mucogingival tissue was compromised. 19

The pain intensity was statistically different between groups only on the first day, with the SCPF group reporting less pain. The greater discomfort in the SCTG sites was due to the palate wound. However, this pain was scored as low or moderate. A possible explanation for this is that the reduced apico-coronal dimension and minimal thickness of the graft obtained by the use of the parallel incisions to harvest the connective tissue grafts allowed for rapid healing. 39 The parallel incision technique permitted the maintenance of the periosteum on the bone surface, and this significantly contributed to the formation of granulation tissue in the wound area. 40-42 The removal of the periosteum would have led to a delay in the repair of the palatal donor site. Minimal surgical trauma results in less cellular damage and necrosis, leading to less postoperative inflammation and pain. 43

CONCLUSION

The present study demonstrated that both SCPF and SCTG were effective in providing root coverage in Miller Class I gingival recession defects where the patient presented with at least 2 mm of keratinized gingiva prior to the root coverage surgical procedure; however, SCTG resulted in thicker gingival tissue.

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