

Treatment of Localized Gingival Recessions

Part IV. Results After Three Years

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TWENTY-SIX LOCALIZED gingival recessions treated with either a lateral sliding flap or a coronally repositioned flap procedure more than 3 years ago were reevaluated. Biometric measurements on the recipient and the donor or control teeth included: a) cementoamel junction, gingival margin; b) sulcus depth; c) gingival margin, mucogingival line. These recordings were statistically compared to those taken 180 days after the surgical procedures were performed. Pairwise *t* tests were used to determine whether there were any changes between the 180 days and the 3 years postoperative control with either procedure. A two sample *t* test was run to see whether the changes obtained with the two procedures differed from each other. No significant changes were found. The values for gingival recession, sulcus depth and width of keratinized gingiva remained stable for both techniques throughout the observation period.

Localized gingival recessions are among the indications for mucogingival surgery. They may require treatment due to functional considerations or because of their esthetic implications.

In previous publications¹⁻³ the biometric results obtained with two surgical techniques were presented and compared. Lateral sliding flap procedures and coronally repositioned flaps with a free gingival graft were evaluated over a 6-month period. It was reported that both techniques rendered satisfactory results in the treatment of localized gingival recessions. No differences were found between the results obtained with both techniques on the recipient teeth regarding gain of tissue coverage, sulcus depth and gain of attached gingiva. An average of 2.71 mm of soft tissue coverage was obtained with both techniques, which represented an average coverage of 67% of the recession.

However, differences were found in relation to the donor teeth, where an increase of root exposure averaging 1 mm was found after lateral sliding flap procedures. No changes were found after coronally repositioned flaps, since the teeth neighboring the recessions were not affected by the surgical procedures. They acted as control teeth, not as donor sources.

All these results were shown to remain stable after the first postoperative month, for the 6-month period the clinical study lasted.

The question always arises whether the results ob-

tained remain stable over a longer period of time or if the excellent results are only transitory, and the recessions tend to recur.

The purpose of the present communication is to present the results of the reevaluation of those lateral sliding and coronally repositioned flaps after more than 3 years of observation.

MATERIAL AND METHODS

Originally 28 recessions were treated; 14 received a lateral sliding flap following the technique of Grupe and Warren⁴ and 14 received a coronally repositioned flap with a free gingival graft according to Bernimoulin.⁵ The procedures and methods of evaluation are described in detail in the previous publications.¹⁻³

Of the 28 original recessions, 26 were reevaluated after a postoperative period of more than 3 years. This sample included the 14 recessions originally treated with a lateral sliding flap and 12 recessions treated with a coronally repositioned flap. Two patients were unable to be reached since they had moved away from the area.

At this reevaluation the same biometric measurements previously recorded were taken both on the recipient teeth and on the donor or control teeth: a) cementoamel junction, gingival margin; b) sulcus depth; c) gingival margin, mucogingival line.

The results obtained after more than 3 years were statistically analyzed and compared to those found after 6 months postoperatively for each technique. Since only 12 of the 14 recessions originally treated by a coronally repositioned flap were reevaluated, the statistical evaluation for the 6 month recall was computed again for this group excluding the two cases that were not reevaluated.

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A pairwise *t* test was used to determine whether there was any significant variation between the 6-month and the 3-year data. A two sample *t* test was used to determine whether there was any difference between the results obtained where both procedures were compared. The hypothesis was rejected if the probability ratio (*P* value) was less than 0.05.

RESULTS

Table 1 shows the changes that occurred on the recipient teeth after lateral sliding flap procedures between 180 days and 3 years. No significant changes occurred in any of the three parameters evaluated. Table 2 shows similar results when the changes on the donor teeth were considered.

Table 3 shows changes in the recipient teeth between the two observation periods after coronally repositioned flaps. No significant changes were found. Table 4 shows similar results for the control teeth (The data reported on Tables 3 and 4 for 180 days, differs from that previ-

ously reported² because of the two cases that were excluded).

Table 5 shows the results of the two sample *t* test comparing the changes obtained with both procedures on the recipient teeth between 180 days and 3 years. No differences were found in any of the variables tested. Similarly, no differences were found on the control teeth for the same time span (Table 6).

Figure 1 shows one of the cases treated with a lateral sliding flap, while Figure 2 corresponds to one of the cases treated with a coronally repositioned flap.

DISCUSSION

The findings reported indicate that the results obtained after lateral sliding flap and coronally repositioned flap procedures are maintained without significant variations after 3 years. As reported earlier,^{1,2} after the first post-operative month, all the results seem to stabilize. Since this same stabilization in the results is also found after 6 months, it is evident that the 1-month evaluation will

Table 1
Mean Changes on Recipient Teeth After Lateral Sliding Flap Procedure

	180 Days	>3 Years	Mean diff.	<i>P</i> Value
Cementoamel junction, gingival margin	1.20	0.71	0.48	0.62
Sulcus depth	1.57	1.46	0.11	0.64
Gingival margin mucogingival line	4.50	4.50	0.0	1.00

N = 14.

Table 2
Mean Changes on Donor Teeth After Lateral Sliding Flap Procedure

	180 Days	>3 Years	Mean diff.	<i>P</i> Value
Cementoamel junction, gingival margin	1.42	1.42	0.0	1.0
Sulcus depth	0.96	1.28	0.32	0.16
Gingival margin mucogingival line	3.46	3.50	0.04	0.84

N = 14.

Table 3
Mean Changes on Recipient Teeth After Coronally Repositioned Flap Procedure

	180 Days	>3 Years	Mean diff.	<i>P</i> Value
Cementoamel junction, gingival margin	1.41	1.20	0.21	0.37
Sulcus depth	1.08	1.33	0.25	0.45
Gingival margin mucogingival line	4.33	4.37	0.04	0.77

N = 12.

Table 4
Mean Changes on Control Teeth After Coronally Repositioned Flap Procedure

	180 Days	>3 Years	Mean diff.	<i>P</i> Value
Cementoamel junction, gingival margin	0.70	0.62	0.08	0.33
Sulcus depth	1.45	1.66	0.21	0.29
Gingival margin mucogingival line	3.91	3.95	0.04	0.58

N = 12.

Table 5
Comparison of Mean Changes on Recipient Teeth After Laterally Sliding and Coronally Repositioned Flap Procedures

Two sample *t* test

		N	180 Days	>3 Years	Change	P Value
Cementoamel junction Gingival margin	LSF	14	1.20	0.71	0.48	0.47
	CRF	12	1.41	1.20	0.21	
Sulcus depth	LSF	14	1.57	1.46	0.11	0.36
	CRF	12	1.08	1.33	0.25	
Gingival margin Mucogingival line	LSF	14	4.50	4.50	0.0	0.85
	CRF	12	4.33	4.37	0.04	

Table 6
Comparison of Mean Changes on Donor or Control Teeth After Laterally Sliding and Coronally Repositioned Flap Procedures

Two sample *t* test

		N	180 Days	>3 Years	Change	P Value
Cementoamel junction Gingival margin	LSF	14	1.42	1.42	0.0	0.80
	CRF	12	0.70	0.62	0.08	
Sulcus depth	LSF	14	0.96	1.28	0.32	0.70
	CRF	12	1.45	1.66	0.21	
Gingival margin Mucogingival line	LSF	14	3.46	3.50	0.04	0.97
	CRF	12	3.91	3.95	0.04	



Figure 1. Localized gingival recession on the lower left central incisor treated with a lateral sliding flap taken from the lower left lateral incisor. A, preoperative; B, 1 month after surgery; C, 40 months after surgery. Notice the gingival changes occurring on the donor tooth.

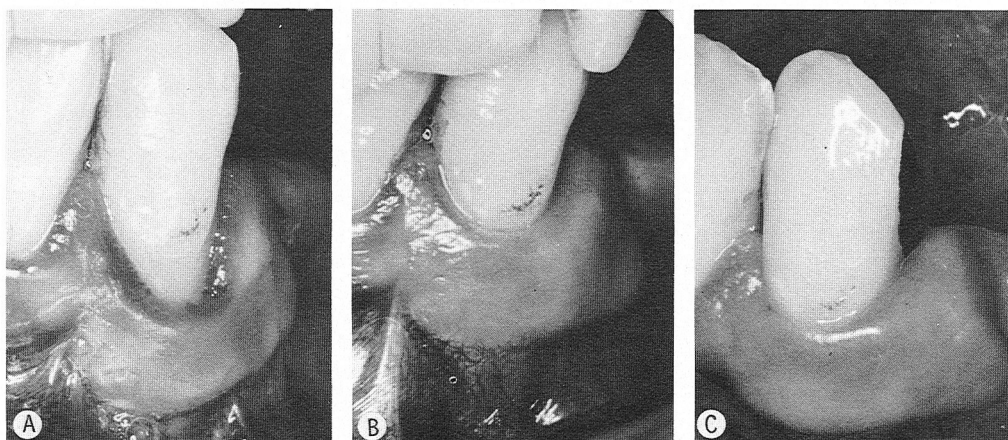


Figure 2. Localized gingival recession on the lower left cuspid treated with a coronally repositioned flap. A, after gingival grafting, prior to coronally repositioning; B, 6 months after the coronally repositioned flap; C, 43 months postoperatively.

give the clinician an accurate assessment of the long-term behavior of the performed procedure.

Accordingly, the coverage of the recession obtained with both procedures will be maintained, representing a coverage of 65 to 70% of the treated root exposure. Similarly, the recession (averaging 1 mm) created on the donor tooth after a lateral sliding flap procedure will not decrease over time.

From a clinical standpoint both procedures give very satisfactory results, which can be maintained through the years. The results found after 3 years agree with those clinical cases reported in the literature after comparable postoperative observations.^{6, 7} However, to our knowledge no biometric evaluation has been reported assessing the behavior of these techniques, or comparable techniques, in the treatment of localized gingival recessions for more than 3 years.

Although it does not reach significant levels, a minimal reduction of the recession on the recipient teeth occurred between 6 months and 3 years. It averaged 0.48 mm for the lateral sliding flap and 0.21 mm for the coronally repositioned flap. It may be related to the adaptation and particularly, to the maturation of the tissues after healing of the flap, and corresponds to the concept of "creeping reattachment",⁸ already documented after free gingival grafts.^{9, 10}

This tissue rebound was not found on the donor teeth when a lateral sliding flap was used.

CONCLUSIONS

1. The satisfactory immediate results obtained with the lateral sliding flap and the coronally repositioned flap procedures will be maintained for more than 3 years.
2. The amount of root coverage obtained will be

maintained for both techniques.

3. The 1 mm gingival recession created on the donor tooth when a lateral sliding flap is used, will not repair with time.

4. Although not statistically significant, a minimal "creeping reattachment" will occur with both procedures on the recipient teeth.

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Announcements

4th INTERNATIONAL CONGRESS ON CLEFT PALATE AND RELATED CRANIOFACIAL ANOMALIES

The 4th International Congress on Cleft Palate and Related Craniofacial Anomalies will be held in Acapulco, Mexico on May 3-8, 1981. The program will include scientific sessions, commercial and scientific exhibits, teaching seminars, audiovisual, posters and social program.

The deadline for scientific contributions and advance registration at reduced fees is August 31, 1980.

For further information write the General Secretariat, 4th Interna-

tional Congress on Cleft Palate, Apdo. Postal 18-986, Mexico 18, D.F., Mexico.

AMERICAN BOARD OF ORAL PATHOLOGY

The examination for certification by the American Board of Oral Pathology will be held on October 13 and 14, 1980 in Boston, MA. Applications must be received in the office of the Secretary by July 1, 1980.

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