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Research Article

EFFECTIVENESS OF PERIODONTAL PLASTIC SURGICAL TECHNIQUES IN THE MANAGEMENT OF LOCALIZED FACIAL GINGIVITIS RECESSIONS

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Abstract:

Aim: The point of this Systematic Review (SR) was to survey the clinical viability of periodontal plastic medical procedure strategies in the therapy of confined gingival downturns (Rec) with or without between dental clinical connection misfortune.

Methods: The electronic and manual review was conducted to distinguish between preliminary randomized clinical trials (RCTs) for the treatment of single gingival retardation with at least half a year of development. The essential outcome variable was the inclusion of the finite root (CRC). Our current research was conducted at Jinnah Hospital, Lahore from March 2019 to February 2020. The optional outcome factors were reduction of the retardation and keratinized tissue (KT) gain. To assess the impact of treatment, Odds Ratios were consolidated for dichotomous information and average contrasts in the consistent information using an irregular impact model.

Results: Fifty-one RCTs (58 articles) with a total of 1579 patients treated (1745 slowdowns) were retained for this SR. Finally, 33 sets of correlations were distinguished and a total of 84 meta-surveys were performed. The advanced coronary fold (ACF) was associated with a higher probability of CRC and a higher sum of Rec Red than the positioned semi-lunar coronary flap. Mixing CAF in addition to the connective tissue graft (CAF+CTG) or CAF in addition to the subsidiary enamel matrix (CAF+EMD) was more viable than CAF alone with respect to CRC also, RecRed. CAF in addition to the collagen matrix (CAF+CM) resulted in a higher rate of RecRed than CAF alone. Similarly, CAF+CTG resulted in a better CRC rate than CAF+EMD, SCPF, Free Gingival Graft (FGG) and Lateral Flap (LPS). Similarly, CAF+CTG performed better in CRC than border membranes (CAF+GTR), CAF+EMD and CAF+CM. The GTR was certainly not ready to improve the clinical viability of CAF. Studies adding the acellular dermal network (ADM) to CAF showed enormous heterogeneity and not huge advantages over CAF alone. Different mixtures, using more than one solitary seal/biomaterial under the fold, mostly give comparable or less advantages than the less complex control methodology in terms of root inclusion results.

Conclusion: CAF methodology alone or with CTG, EMD are upheld by huge proof in current periodontal plastic medical procedure. CAF+CTG accomplished the best clinical results in single gingival downturns with or without iCAL.

Keywords: Periodontal Plastic Surgical Techniques Lahore.

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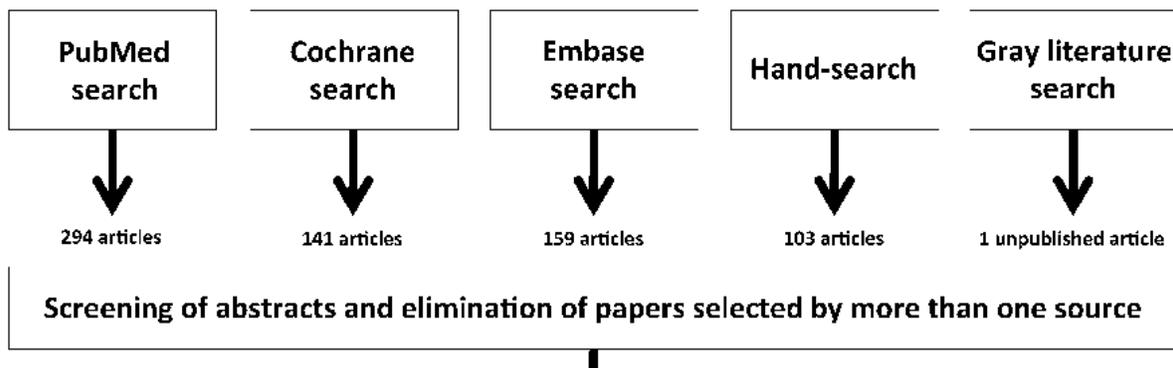
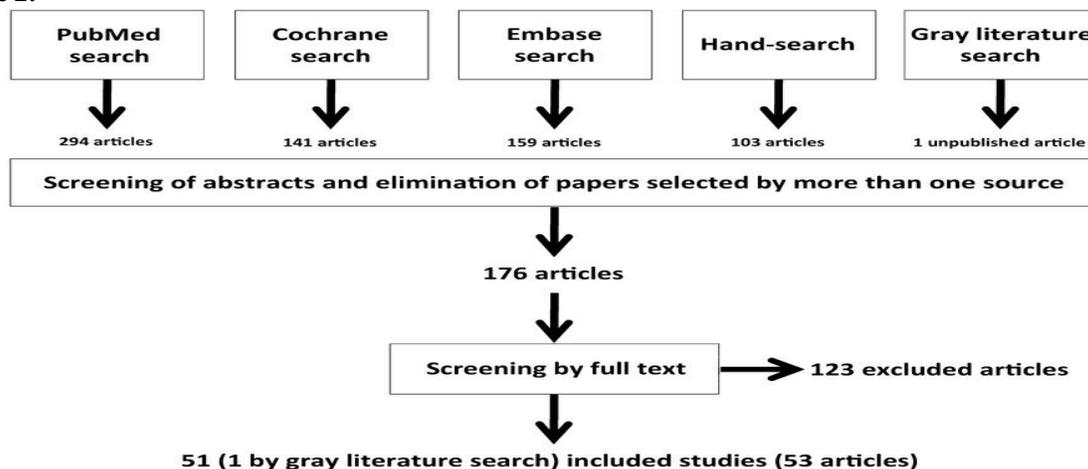
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INTRODUCTION:

The treatment of gingival compaction by methods of periodontal plastic medical procedures is a conceivable solicitation in current dentistry (Nieri et al. 2018) [1]. The ultimate goal of these methods is the complete inclusion of the root (CRC) and wonderful taste results (Cairo et al. 2017, 2018) [2]. A precise study (SR) submitted by the European Periodontology Workshop for the treatment of a single slowdown has been initiated on the clinical viability of the coronal progression flap and its associated methodology [3]. This study showed that CAF alone was a protected and unsurprising methodology and that the complementary use of a connective tissue graft (CTG) or an enamel matrix derivative (EMD) in the context of CAF raised the probability of developing CRC (Cairo et al. 2009). The reason for this RS was to answer the central question that accompanied it: [4] "What is the clinical suitability of periodontal plastic medical procedure techniques in the treatment of restricted gingival retardation with or without misfortune between the dental clinical connection [5]?"

METHODOLOGY:

A specialized administrator has conducted a hunt on electronic information bases until May 2019 to identify exams included or sought for this review. Expanding, all the creators of the distinguished examinations, clinical specialists or specialists in the field of periodontal plastic medical procedure were contacted in an effort to distinguish the unpublished information or again the examinations not yet published. The evaluation of the quality of the included preliminary examinations was carried out autonomously in a copy structure by two survey creators (F.C., moreover, U.P.). In accordance with Form 5.1.0 of the Cochrane Handbook for Deliberate Reviews of Interventions [updated March 2018] (Higgins and Green 2018), three primary quality measures were inspected: concealment of portions, blinding of treatment outcomes to outcome assessors, and completion of development (for a step-by-step clarification, see Cairo et al. 2008 and supplementary segment, Information S2: Assessing Validity).

Figure 1:**Figure 2:**

Following the quality assessment, the reviews were grouped into two classifications:

- Low risk of tilting, if each of the three quality models were met.
- High tilt hazard, in the event that at least one of the three quality models is not met. The titles and modified titles (where available) of all reports recognized by both electronic and manual companies were independently reviewed by two survey creators (F.C., moreover, U.P.). At the point when the studies met the consideration models or, conversely, when information missing from the summaries to assess the consideration standards was identified, the full article was obtained. Our current research was conducted at Jinnah Hospital, Lahore from March 2019 to February 2020. The full content, all things considered, of conceivable relevance was independently reviewed by two audit creators (F.C., moreover, U.P.). All reviews meeting the standards for incorporation at this stage were subjected to quality assessment and information recording. When the contradiction between the two analysts was discovered, agreement was reached through a conversation with the third factual

analyst/consultant. At this point, the information was freely separated and integrated into a PC by two audit creators (F.C. in addition, U.P.) using explicitly planned information assortment structures. The tolerant qualities, drugs, clinical results, difficulties and quality of the study were effectively recorded. When clinical information on CRC was insufficient, the creators of the preliminaries were contacted. For dichotomous results, assessments of the impact of mediation were reported in proportion to chance (or again) with 95% certainty. For consistent results, mean contrasts and standard deviations were used to summarize the information from each collection. For each patient, only one site was considered for each procedure. In fact, the different sites for the same patient are not free, as revealed by the comparative risk factors related to the patient. When concentrates from different sites were recognized, the presence of silent individual data was verified and many sites were eliminated. This identified a slowing of the strategy in a single patient. Alternatively, dichotomous information and average contrasts of persistent information were pooled using a random effect model.

Table 1:

Comparisons between single and/or combinations of techniques

Study	Comparison (Test <i>versus</i> Control)	Study Design	MRC Test (%)	MRC Control (%)	CRC Test (%)	CRC Control (%)
Alkan & Parlar (2011)	28. CAF+CTG+EMD <i>versus</i> CAF+EMD	SM	89 ± 14	92 ± 14	58.3	75.0
Alves et al. (2012)	29. CAF+ADM+EMD <i>versus</i> CAF+ADM	SM	55.4	44	15.8	5.3
Cairo et al. (2012)	30. CAF+CTG <i>versus</i> CAF	P	85.0	69.0	57.0	29.0

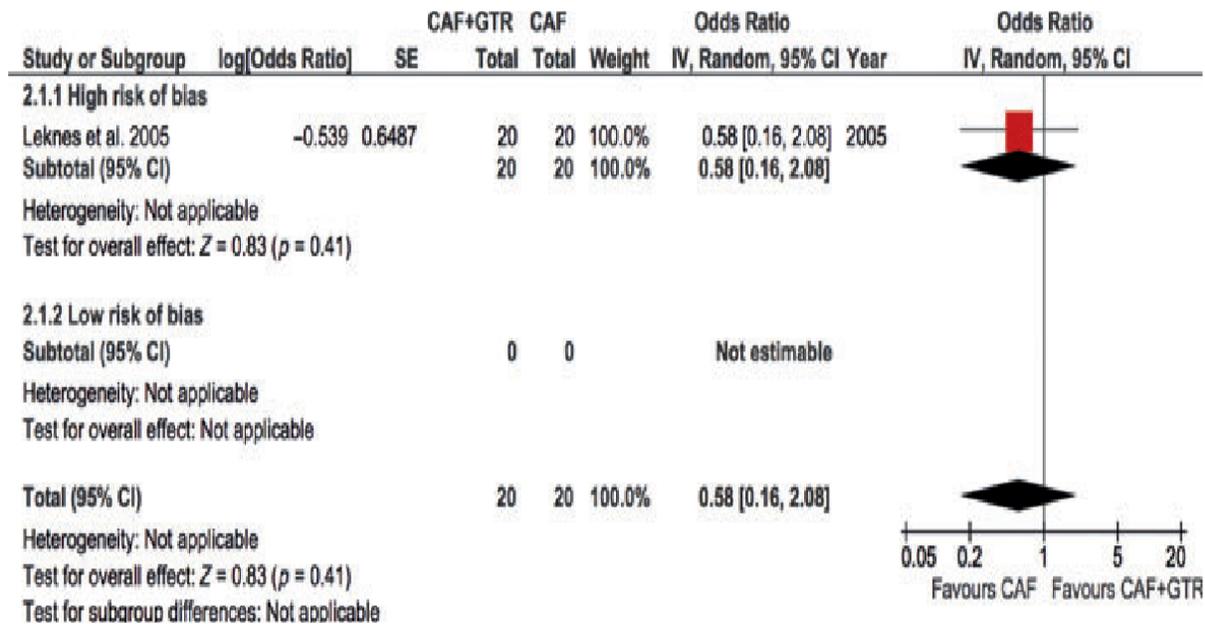
SM, Split-Mouth design; P, Parallel design; MRC, Mean% of Root Coverage; CRC, Complete Root Coverage; NR, Not Reported; CAF, Coronally Advanced Flap; CTG, subepithelial Connective Tissue Graft; GTR, Guided Tissue Regeneration procedures for root coverage; B, Bioabsorbable barrier membrane; U, Unsorbable barrier membrane; EMD, Enamel Matrix Derivative; ADM, Acellular Dermal Matrix; CM, porcine Collagen Matrix; PCG, Platelet Concentrate Graft; HF-DDS, Human Fibroblast-Derived Dermal Substitute; BGS, Bone Graft Substitute; P-RFM, Platelet-Rich Fibrin Membrane; SCPF, Semilunar Coronally Positioned Flap; DPF, Double Papilla Flap; LPF, Laterally Positioned Flap; FGG, Free Gingival Graft. BG, Bone Graft; β -TCP, Beta-Tricalcium Phosphate; rhPDGF-BB, Recombinant Human Platelet-Derived Growth Factor-BB; Fib, autologous gingival Fibroblasts; HP, Hydroxyapatite.

RESULTS:

The hand that looks through discovered 106 articles and 15 of them were certainly not found by the electronic investigation. The pursuit of "dim writing" (unpublished information) through electronic contact with all the creators of the eminent clinical or scientific opinion leaders and specialists in the field of mucogingival medical procedure gave the full information of a preliminary (Barros et al. 2018). Finally, by cross-referencing the writing gaze (electronic, manual and unpublished information

gaze) to draw copies, 178 articles (163 by electronic, manual search and 1 as yet unpublished survey by "dim writing" search) were selected. A review of the overall content of the 178 articles resulted in the selection of 52 contemplates (55 reports) (Table 1) that met the standards of consideration for this deliberate inquiry and the rejection of 128 articles from the review. The investigations rejected at this stage are recorded in Table 2 (attributes of prohibited investigations) and the explanation of the prohibition has been recorded.

Figure 3:



Comparison between CAF+GTR *versus* CAF for CRC CAF: Coronally Advanced Flap GTR: Guided Tissue Regenera

Table 2:

Comparations between single and/or combinations of techniques

Study	Comparison (Test versus Control)	Study Design	MRC Test (%)	MRC Control (%)	CRC Test (%)	CRC Control (%)
da Silva et al. (2004)	1. CAF+CTG versus CAF	SM	75.3	68.8	18.2	9.1
Cortellini et al. (2009)		P	74.1	62.5	60.0	37
Amarante et al. (2000)	2. CAF+GTR versus CAF	SM	56.1	69.4	25.0	50
Lins et al. (2003)		SM	45.0	60.0	NR	NR
Leknes et al. (2005)		SM	35.0	34.2	18.2	9.1
Modica et al. (2000)	3. CAF+EMD versus CAF	SM	91.2 ± 1.5	80.9 ± 21.3	64.3	50
Del Pizzo et al. (2005)		SM	90.7 ± 17	86.7 ± 18.3	73.3	60.0
Spahr et al. (2005)		SM	84.0	67.0	53	23
Castellanos et al. (2006)		P	88.6	62.2	NR	NR
Pilloni et al. (2006)		P	93.8 ± 12.9	65.5 ± 26.0	86.7	33.3
Woodyard et al. (2004)	4. CAF+ADM versus CAF	P	99 ± 5	67 ± 27	91.7	33.3
Côrtes et al. (2004, 2006)		SM	68.0 ± 17.9	56 ± 23.0	7.7	7.7
Mahajan et al. (2007)		P	97.1	77.4	NR	NR
Huang et al. (2005)	5. CAF+PCG versus CAF	P	87.1 ± 21.4	83.5 ± 21.8	63.6	58.3
Nazareth & Cury (2010)	6. CAF+BGS versus CAF	SM	85.6 ± 21.7	90.0 ± 18.4	66.7	73.3
Jepsen et al. (2013)	7. CAF+CM versus CAF	SM	75.29	72.66	36.0	31.0
Santana et al. (2010a)	8. SCPF versus CAF	SM	41.8	83.9	9.0	63.6
Santana et al. (2010b)	9. LPF versus CAF	P	95.5	96.6	83.3	88.8
Jepsen et al. (1998)	10. CAF+GTR versus CAF+CTG	SM	87.1 ± 13.8	86.9 ± 15.4	46.7	46.7
Trombelli et al. (1998)		SM	48.0	81.0	8.3	50.0
Zucchelli et al. (1998)		P	B 5.7 ± 13.8 U 80.5 ± 14.9	93.5 ± 8.6	B 38.9 U 27.8	66.7 28.6
Borghetti et al. (1999)		SM	70.2	76.0	28.6	83.3
Tatakis & Trombelli (2000)		SM	81.0	96.0	58.3	NR
Romagna-Genon (2001)		SM	74.59	84.84	NR	43.7
Wang et al. (2001)		SM	73 ± 26	84 ± 25	43.7	
Abolfazli et al. (2009)	11. CAF+EMD versus CAF+CTG	SM	76.9	93.1	25.0	66.6
McGuire et al. (2003)		SM	95.1	93.8	89.5	79.0
Aichelmann-Reidy et al. (2001)	12. CAF+ADM versus CAF+CTG	SM	65.9 ± 46.7	74.1 ± 38.3	31.8	50.0
Paolantonio et al. (2002b)		P	83.3 ± 11.40	88.8 ± 11.6	26.7	46.7
Tal et al. (2002)		SM	89.1	88.7	42.9	42.9
Joly et al. (2007)		SM	50.0	79.5	75.0	40.0
Haghighati et al. (2009)		SM	85.4 ± 22.7	69.1 ± 24.2	NR	31.3
Barros et al. (2013)		SM	72.9	78.73	NR	NR
McGuire & Scheyer (2010)	13. CAF+CM versus CAF+CTG	SM	88.5 ± 21.2	99.3 ± 3.5	NR	NR
Wilson et al. (2005),	14. CAF+HF-DDS versus CAF+CTG	SM	56.7 ± 27.8	64.4 ± 31.9	10.0	10.0
Bittencourt et al. (2009)	15. SCPF versus CAF+CTG	SM	89.2	96.8	58.8	88.2
Jankovic et al. (2012)	16. CAF+P-RFM versus CAF+CTG	SM	88.6 ± 10.6	92.0 ± 15.5	75.8	79.6
Jahnke et al. (1993)	17. FGG versus CAF+CTG	SM	43.0	80.0	11.1	55.5
Paolantonio et al. (1997)		P	53.2 ± 21.5	85.2 ± 17.9	8.6	48.6
Ricci et al. (1996)	18. DPF+CTG versus CAF+GTR	P	77.1	80.9	NR	NR
Paolantonio (2002a)		P	90.0	81.0	60.0	40.0
Jankovic et al. (2010)	19. CAF+P-RFM versus CAF+EMD	SM	72.1 ± 9.5	70.5 ± 11.8	65.0	60.0
Zucchelli et al. (2012)	20. LPF versus CAF+CTG	P	74.2 ± 8.2	88.8 ± 11.2	4.0	48.0
Comparations between single or combinations of techniques and multiple combinations of techniques						
Rasperini et al. (2011)	21. CAF+CTG+EMD versus CAF+CTG	P	90.0 ± 10.0	80.0 ± 30.0	61.5	46.7
McGuire et al. (2009)	22. CAF+β-TCP+rhPDGF-BB versus CAF+CTG	SM	90.8	98.6	NR	NR
Jhaveri et al. (2010)	23. CAF+ADM+Fib versus CAF+CTG	SM	83.3	83.3	70.0	60.0
Paolantonio (2002a)	24. CAF+GTR+HP versus DPF+CTG	P	87.1	90.0	53.3	60.0
Paolantonio (2002a)	25. CAF+GTR+HP versus CAF+GTR	P	87.1	81.0	53.3	40.0
Dodge et al. (2000)	26. CAF+BG+GTR versus CAF+GTR	SM	89.9 ± 26.5	73.7 ± 24.6	50.0	33.0
Kimble et al. (2002)		P	74.3 ± 11.7	68.4 ± 15.2	NR	NR
Trabulsi et al. (2004)	27. CAF+GTR+EMD versus CAF+GTR	P	63 ± 16.5	75 ± 25.6	7.7	38.5

DISCUSSION:

The investigation undertaken within the framework of this methodical audit was "what is the clinical adequacy of the methodology of periodontal plastic medical procedures in the treatment of restricted

gingival slowdown with or without unfortunate dental clinical connection"? [6] The current article covers 38 years of clinical examination in mucogingival medical procedures, starting in the late 1980s, when Raul Caffesse's band distributed the first CRTs on the

treatment of simple gingival recessions (Gruinard and Cafes 1979, Caffesse's and Gruinard 1979, 1984, Spinel and Cafés 1984) [7]. From this chronic perspective, it has been found that few ideal models have changed in recent years. Somewhere in the 1980s and 1990s, the best quality level techniques were considered to be the free gingival unit and the horizontally located fold (LPF), regardless of the fact that the logical basis was generally spoken of by case reviews [8]. In the latter part of the 1980's, a full representation of the CAF methodology was introduced (Allen and Miller 1989), opening another period of treatment, not only committed to recreating a "satisfactory" measure of the connected gingiva, but also powerful in improving the style of delicate tissues [9]. The significance of periodontal plastic surgery was introduced at this time (Miller 1997, American Foundation of Periodontology 1996), which achieved the goal of contemporary treatment. In the current evidence-based period, interest was generally focused on the consistency of reproduction of delicate tissues on the discovered root, resulting in a CRC along with a beautiful style (Cairo et al. 2017, Kerner et al. 2019, Cairo et al. 2018) [10].

CONCLUSION:

The advanced coronal flap, in addition to the connective tissue graft, is more powerful than CAF in acquiring root inclusion in a single gingival fold without loss of interdental connection (Miller Class I, II or RT1) (2 RTC, moderate quality of evidence).

- Advanced coronal flap in addition to connective tissue grafting is more convincing than CAF in addition to GTR (6 RTC, moderate quality of evidence).

- The enamel matrix derivative improves the viability of the coronary progression flap alone (4 RTC, moderate quality of evidence).

- According to preliminary information, CAF is practical in the case of a single Rec with loss of interdental connection that may or may not be exactly equivalent to the oral site (mill operator III or RT2) and the use of CAF+CTG is more powerful than CAF alone (1 RTC, poor quality of evidence).

- Studies adding acellular dermal mesh (ADM) to CAF have demonstrated enormous heterogeneity and the advantages revealed are not critical compared to CAF alone (2 preliminaries, low quality of evidence).

REFERENCES:

1. Jahnke, P. V., Sandifer, J. B., Gher, M. E., Gray, J. L. & Richardson, A. C. (1993) Thick free gingival and connective tissue autografts for root coverage. *Journal of Periodontology* 64, 315–322.
2. Jankovic, S., Aleksic, Z., Milinkovic, I. & Dimitrijevic, B. (2010) The coronally advanced flap in combination with platelet-rich fibrin (PRF) and enamel matrix derivative in the treatment of gingival recession: a comparative study. *European Journal of Esthetic Dentistry* 5 (3), 260–273.
3. Jankovic, S., Aleksic, Z., Klokkevold, P., Lekovic, V., Dimitrijevic, B., Kenney, E. B. & Camargo, P. (2012) Use of platelet-rich fibrin membrane following treatment of gingival recession: a randomized clinical trial. *International Journal of Periodontics and Restorative Dentistry* 32, 41–50.
4. Jhaveri, H. M., Chavan, M. S., Tomar, G. B., Deshmukh, V. L., Wani, M. R. & Miller, P. D. (2010) Acellular dermal matrix seeded with autologous gingival fibroblasts for the treatment of gingival recession: a proof-of-concept study. *Journal of Periodontology* 81, 616–625.
5. Jepsen, K., Heinz, B., Halben, J. H. & Jepsen, S. (1998) Treatment of gingival recession with titanium reinforced barrier membranes versus connective tissue grafts. *Journal of Periodontology* 69, 383–391.
6. Jepsen, K., Jepsen, S., Zucchelli, G., Stefanini, M., de Sanctis, M., Beldini, N., Greven, B., Heinz, B., Wennström, J., Cassel, B., Vignoletti, F. & Sanz, M. (2013) Treatment of gingival recession defects with a coronally advanced flap and a xenogeneic collagen matrix: a multicenter randomized clinical trial. *Journal of Clinical Periodontology* 40, 82–89.
7. Joly, J. C., Carvalho, A. M., da Silva, R. C., Ciotti, D. L. & Cury, P. R. (2007) Root coverage in isolated gingival recessions using autograft versus allograft: a pilot study. *Journal of Periodontology* 78, 1017–1022. Nazareth, C. A. & Cury, P. R. (2010) Use of anorganic bovine-derived hydroxyapatite matrix/ cell-binding peptide (P-15) in the treatment isolated Class I gingival recession of defects: a pilot study. *Journal of Periodontology* 82, 700–707.

8. Paolantonio, M., di Murro, C., Cattabriga, A. & Cattabriga, M. (1997) Subpedicle connective tissue graft versus free gingival graft in the coverage of exposed root surfaces. A 5-year clinical study. *Journal of Clinical Periodontology* 24, 51–56.
9. Paolantonio, M. (2002a) Treatment of gingival recessions by combined periodontal regenerative technique, guided tissue regeneration, and subpedicle connective tissue graft. A comparative clinical study. *Journal of Periodontology* 73, 53–62.
10. Paolantonio, M., Dolci, M., Esposito, P., D'Archivio, D., Lisanti, L., Di Luccio, A. & Perinetti, G. (2002b) Subpedicle acellular dermal matrix graft and autogenous connective tissue graft in the treatment of gingival recessions: A comparative 1-year clinical study. *Journal of Periodontology* 73, 1299–1307.