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analysis & debate

DEBATE

Multiple adjacent gingival recessions: which technique to use, tunnel or flap?



Tunnel: 'Advantages of the tunnel technique include fast early healing, reduced morbidity, and minor post-operative swelling' (Ion Zabalegui)

Aesthetic concerns play a major role in the treatment planning of dental care and in every periodontal practice. Gingival recessions are one of the prevalent problems that require clinicians' attention because of the patient's aesthetic demands and the possible health complications, such as dentin hypersensitivity and root caries. The cosmetic expectations of our patients and their dental health are the primary indication for performing periodontal plastic surgery and soft-tissue reconstructive surgery. It is the responsibility of the clinician to understand patient demands for aesthetics, the indications and limitations of surgical treatment, and to acquire the needed surgical skills to perform delicate procedures aimed at achieving optimal aesthetics. These procedures need to ensure the best possible results with minimal discomfort and maximal safety for our patients.

Periodontal plastic-surgery procedures are designed to correct defects in the morphology, position, and amount of gingiva. The present debate focuses on the treatment of multiple adjacent gingival recessions with two surgical approaches: the coronally advanced flap (with or without connective tissue graft) and the tunnelling procedure. Each technique has its own advantages and limitations and the two procedures are well documented in the literature. Here, two opinion leaders - Massimo de Sanctis and Ion Zabalegui - share their clinical views and long-term experience to help us decide which approach we should carry out in different clinical situations.

Lior Shapira, deputy chair, EFP scientific affairs committee

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Massimo de Sanctis: 'MCAF: a very effective approach to solving aesthetic problems when multiple recessions are present'

The multiple coronally advanced flap (MCAF), as proposed by Giovanni Zucchelli and me in 2000, has become the most widely used surgical approach when treating multiple recessions. MCAF is a simple technique that nevertheless yields very good results when complete root coverage is the aim of the surgery.

It is clear that the most important indication for this technique is aesthetic. Very often, patients requiring root coverage have very high expectations and are extremely critical if surgery is likely to produce scar tissue or incomplete results.

For such patients, it is thus guite evident that one should utilise the technique that has resulted in producing the highest rate of complete root coverage. However, it needs to be kept in mind that root coverage alone is no longer an acceptable answer to the aesthetic request. Nowadays it is mandatory for surgery to recreate an anatomical condition equal to the one the patient had before the recession was established. This means that no scar tissue is acceptable and that the blending in tissue colour and texture must be perfect, without any excess in keratinized tissue.

The MCAF has an envelope design. This means that by avoiding vertical releasing incisions, the healing is not affected by scars or keloids.

The elevation of the flap – split-full-split – provides a good reason for the likely success of this technique. In fact, such a technique represents a surgical modulation of the soft-tissue thickness.

This technique maintains a partial-thickness recipient bed,

where the vascular exchanges are of paramount importance: that is, the area of the surgical papilla where the flap is anchored and where every effort must be made to reduce the risk of tissue shrinkage.

In the second part of the flap, the periosteum is maintained in the flap by means of a full-thickness elevation, augmenting the thickness of the flap over the most critical part – the avascular root surface. Including the periosteum in the portion of flap that will be moved coronally and positioned over the avascular surface will provide maximum stability.

Finally, the most apical portion – raised split thickness – allows flap mobilisation because all muscular insertions are detached by the flap, so the tissue remains free from muscle tension.

Optimal results

This technique has yielded optimal results in both class 1 and class 2 Miller recession defects. Nevertheless, a multiple recession cannot be categorised in the same way as a single recession. Very often teeth adjacent to each other show a different amount and a different thickness or height of keratinized tissue – that is, they may be classified as Miller class 1 or class 2. This is an anatomical factor of paramount importance for flap stability following the surgical procedure.

For this reason, some modifications have been added to the original technique – such as the use of a connective graft in the so-called multiple bilaminar flap – which have increased the predictability of the procedure.

The use of a connective tissue in combination with a coronal



"It is clear that the most important indication for this technique is aesthetic"



FIG 1: Patient showing multiple recession and NCCL, maxillary arch



FIG 2: Quadrant 2 after CEJ reconstruction



FIG 3: Quadrant 2 Multiple CAF incision

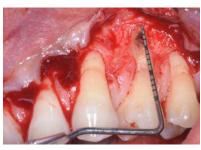


FIG 4: Flap elevated, split-full-split; note calculus on root surfaces



FIG 5: Flap sutured



FIG 6: Six-months healing



FIG 7: Maxillary arch pre-op and six-month healing

advanced flap is well described in literature and obtains the maximum probability of root coverage without altering the aesthetic outcome of the surgical area.

Although it is well documented in the literature that MCAF plus connective tissue graft yields less pain than the tunnel technique, the harvesting of connective tissue from the palate exposes the patient to a second surgical site and can affect morbidity in the healing phase. For this reason – and taking into account that not all the recession in a quadrant/ sextant has the same amount and thickness of keratinized tissue - a selective use of connective tissue grafting has been developed to reduce the dimension and depth of the harvesting area, thereby reducing post-surgical pain.

With this approach, a connective tissue graft of very small dimensions is positioned only over roots where the soft tissue is very thin or keratinized tissue is lacking. While this can achieve



"This technique has yielded optimal results in both class 1 and class 2 Miller recession defects"

the same amount of root coverage as utilising a long and large fragment of connective tissue, it also greatly reduces the patient's post-operation discomfort.

In conclusion, the MCAF technique – with or without a connective-tissue graft – is a very effective technical approach to solving aesthetic problems when multiple recessions are present. It provides the best results when compared to other surgical techniques, it is easy to perform, and does not result in excessive discomfort to patients.



Massimo de Sanctis

Graduated in periodontology at Boston University in 1982 and obtained an MSc in periodontology from the same university for an experimental study carried out between 1982 and 1983. In 1987, he was appointed professor of periodontology at the II University of Rome where he taught until 1989. Between 1989 to 1999 he held various teaching positions at the University of Bologna, and between 2000 and 2014 he was professor of periodontology at the University of Sienna. In

2015 he was nominated professor at the Vita-Salute San Raffaele University in Milan, where he is chair of the programme of periodontology and director of the clinical department of periodontology. The author of more than 100 scientific articles, Professor de Sanctis is a fellow of the International College of Dentistry, a member of the American Academy of Periodontology, a past president of the Italian Society of Periodontology, and a past president of the Italian Co-ordinating Committee for the Scientific Societies.

Ion Zabalegui: 'The tunnel approach is the treatment of choice in the absence of keratinised tissue, when low morbidity is expected, and when patients need public exposure soon after surgery'

For years, there has been a tendency in dentistry – and in periodontology in particular – to create controversy, and sometimes this has been more for the glory of the professionals than for the benefit of patients.

In relation to the treatment of multiple adjacent gingival recessions, let us try to explore in a positive way some of the features that have led to the tunnel technique's becoming the most popular technique among many dental professionals.

The basic advantages of the tunnel technique are:

- Fast early healing with no visible marks as early as two weeks post-operation, because of the surgical design;
- 2. No vertical releasing incisions: relaxation of the flap comes from partial thickness undermining beyond the mucogingival junction;
- **3.** No papilla incisions: they are undermined, preserving the tip and the vascularisation from the palatal masticatory mucosa:
- **4.** Immediate augmentation of the band of keratinised

- mucosa: theoretically, this will reduce the chances of relapse if the aetiology returns;
- 5. Reduced morbidity;
- **6.** No displacement of the mucogingival line;
- **7.** No changes in the depth of the vestibule;
- **8.** Minor post-operative swelling.

The exposure of the tissue has been claimed to be a risk factor for low predictability of the tunnel procedure. However, this factor can be counteracted by two different approaches:

- A coronal traction of the tissue by means of specifically designed sutures anchored with composite to the crowns of the treated teeth, as described by several authors (Sofia Aroca, Anton Sculean, Otto Zuhr).
- 2. Changing the sequence of the surgical procedure: starting out with the acquisition of the donor tissue in order to carry out a test before designing the flap and the number of teeth where the treatment will be carried out.

The critical factor for indicating a tunnel procedure is the

dimension of the donor tissue. In a situation with generous palatal masticatory mucosa, the tunnelling technique provides fast healing in the papilla areas with hardly any residual evidence of the procedure two weeks post-operation.

Change in protocol

This is the reason why I have advocated a change in protocol for the treatment of multiple adjacent gingival recessions: first, the donor tissue should be harvested, a test should be performed on the recipient site, and then the decision should be made about which type of recipient bed is going to be best for the patient.

Referred morbidity is another issue: we as therapists try to provide the lowest amount of post-operational morbidity if the goal of the procedure fulfils patient and treatment expectations. It is very difficult through a randomised controlled trial to measure the exact procedures carried out by surgeons with similar kinds of expertise. However, in

my experience in both private and university environments, in terms of patient-related quality of life (unpublished data), tunnel recession-coverage procedures involve less perception of external inflammation and external bruising compared to coronally advanced flap (CAF). As far as post-operational pain is concerned, no difference has been found on the flap side of the procedure or the palatal donor area.

The tunnel approach is definitely the treatment of choice in the absence of keratinized tissue, when low morbidity is expected for the patient, and when the patient needs to have public exposure within a short period of time after the surgical procedure.

Nevertheless, my personal clinical recommendation is that professionals should be well trained in both procedures. There will always be clinical situations in which one of the procedures "a priori" should provide better outcome expectations than the other.



FIG 8: Multiple adjacent gingival recessions in anterior maxilla on a high-smile-line patient seeking root-coverage treatment for aesthetic reasons



FIG 9: Try-on of the harvested Ct graft for decision-making: large enough for a tunnel procedure



FIG 10: CT graft placed inside bilaminar tunnel bed



FIG 11: Six-week healing

Select Bibliography

- >> Allen AL. Use of a supraperiosteal envelope in soft tissue grafting for root coverage. I. Rationale and technique. Int J Periodontics Restorative Dent. 1994 14(3):216-227.
- >> Aroca S, Molnar B, Windisch P, Gera I, Salvi GE, Nikolidakis D, & Sculean A. Treatment of multiple adjacent Miller class I and II gingival recessions with a Modified Coronally Advanced Tunnel (MCAT) technique and a collagen matrix or palatal connective tissue graft: a randomized, controlled clinical trial. *Journal of Clinical Periodontology* 2013 40, 713-720.
- >> Burkhardt R & Lang NP. Coverage of localized gingival recessions: comparison of micro- and macrosurgical techniques. *Journal of Clinical Periodontology* 2005 32, 287-293.
- >> Cairo F, Cortellini P, Pilloni A, Nieri M, Cincinelli S, Amunni F, et al. Clinical efficacy of coronally advanced flap with or without connective tissue graft for the treatment of multiple adjacent gingival recessions in the aesthetic area: a randomized controlled clinical trial. *Journal of Clinical Periodontology* 2016 43(10):849–56.
- >> Chambrone L & Tatakis DN. Periodontal soft tissue root coverage procedures: a systematic review from the AAP Regeneration Workshop. Journal of Periodontology 2015 86, S8-S51.
- >> De Sanctis M, Baldini N, Goracci C, Zucchelli G. Coronally advanced flap associated with a connective tissue graft for the treatment of multiple recession defects in mandibular posterior teeth. *Int J Periodontics Restorative Dent*. 2011 Nov-Dec;31(6):623-30.
- >> Gobbato L, Nart J, Bressan E, Mazzocco F, Paniz G, Lops D. Patient morbidity and root coverage outcomes after the application of a subepithelial connective tissue graft in combination with a coronally advanced flap or via a tunneling technique: a randomized controlled clinical trial. Clin Oral Invest. 2016 Jan 27;1–14.
- >> Graziani F, Gennai S, Roldán S, Discepoli N, Buti J, Madianos P, Herrera D. Efficacy of periodontal plastic procedures in the treatment of multiple gingival recessions. *Journal of Clinical Periodontology* 2014 41, S15.
- >> Pini Prato GP, Cairo F, Nieri M, Franceschi D, Rotundo R, Cortellini P. Coronally advanced flap versus connective tissue graft in the treatment of multiple gingival recessions: a split-mouth study with a 5-year follow-up. Journal of Clinical Periodontology 2010 37(7):644–50.
- >> Rebele SF, Zuhr O, Schneider D, et al. Tunnel technique with connective tissue graft versus coronally advanced flap with enamel matrix derivative for root coverage: a RCT using 3D digital measuring methods. Part II. Volumetric studies on healing dynamics and gingival dimensions. *Journal of Clinical Periodontology* 2014 41:593-603.



FIG 12: One-year smile



FIG 13: Initial full-mouth multiple adjacent gingival recessions, both upper and lower arches



FIG 14: One year after FM situation



The critical factor for indicating a tunnel procedure is the dimension of the donor tissue'



Ion Zabalegui

From Bilbao (Spain), he studied for his M.D. and completed stomatology at the Universidad del País Vasco, in Bilbao, in 1984. From 1985 to 1987, he studied for the Certificate in Periodontology at the University of Southern California, where his mentor was Dr. Oded Bahat. After receiving this qualification, he dedicated his work exclusively to periodontology and implant dentistry at the Albia Dental Clinic in Bilbao, alongside his brother Borja (an endodontist)

and Dr Jaime Gil. At the same time, he became a visiting professor at the postgraduate programme in periodontology at Madrid's Complutense University, under the guidance of Professor Mariano Sanz. Since then, he has published several articles on periodontal regeneration, periodontal plastic surgery, and implant dentistry. He remains in private practice and is known within the periodontal community for his minimally invasive approach to surgical treatments.

- >> Salama H, Salama M, Garber D. The Tunnel Technique in the Periodontal Plastic Treatment of Multiple Adjacent Gingival Recession Defects: A Review. *Inside Dentistry. Inside Periodontics.* 2008 78-81.
- >> Stefanini M, Zucchelli G, Marzadori M, de Sanctis M. Coronally Advanced Flap with Site-Specific Application of Connective Tissue Graft for the Treatment of Multiple Adjacent Gingival Recessions: A 3-Year Follow-Up Case Series. *Int J Periodontics Restorative Dent.* 2018 Jan/Feb;38(1):25-33.
- >> Zabalegui I, Sicilia A, Cambra J, et al. Treatment of multiple adjacent gingival recessions with the tunnel subepithelial connective tissue graft: a clinical report. Int J Periodont Restorative Dent. 1999 19:199-206.
- >> Zucchelli G, Mele M, Mazzotti C, Marzadori M, Montebugnoli L, de Sanctis M. Coronally advanced flap with and without vertical releasing incisions for the treatment of multiple gingival recessions: a comparative controlled randomized clinical trial. *J Periodontol.* 2009 Jul 1;80(7):1083-94.
- >> Zucchelli G, de Sanctis M. The coronally advanced flap for the treatment of multiple recession defects: a modified surgical approach for the upper anterior teeth. *J Int Acad Periodontol*. 2007 Jul;9(3):96-103.
- >> Zucchelli G, de Sanctis M. Long-term outcome following treatment of multiple Miller class I and II recession defects in esthetic areas of the mouth. *J Periodontol*. 2005 Dec;76(12):2286-92.
- >> Zucchelli G, de Sanctis M. Treatment of multiple recession-type defects in patients with esthetic demands. J Periodontol. 2000 Sep;71(9):1506–14.
- >> Zucchelli G, Gori G, Mele M, Stefanini M, Mazzotti C, Marzadori M, Montebugnoli L, de Sanctis M. Non-carious cervical lesions associated with gingival recessions: a decision-making process. *J Periodontol*. 2011 Dec;82(12):1713-24.
- >> Zucchelli G, Mele M, Stefanini M, Mazzotti C, Marzadori M, Montebugnoli L, de Sanctis M. Patient morbidity and root coverage outcome after subepithelial connective tissue and de-epithelialized grafts: a comparative randomized-controlled clinical trial. *Journal of Clinical* Periodontology. 2010 Aug 1;37(8):728-38.
- >> Zuhr O, Fickl S, Wachtel H, Bolz W, & Hürzeler MB (2007) Covering of gingival recessions with a modified microsurgical tunnel technique: case report. The International Journal of Periodontics & Restorative Dentistry 27, 457-463.
- >> Zuhr O, Rebele SF, Schneider D, Jung RE, & Hürzeler MB (2014) Tunnel technique with connective tissue graft versus coronally advanced flap with enamel matrix derivative for root coverage: a RCT using 3D digital measuring methods. Part I. Clinical and patient-centred outcomes. *Journal of Clinical Periodontology* 41, 582-592.

■ FOCUS

EFP launches science-based outreach projects with its partners

The EFP has launched two educational projects – on oral health and pregnancy, and on periodontal disease and caries – with its partners Oral-B and Colgate. The projects provide clear information, derived from evidence-based science, in various formats aimed at different groups.

Both initiatives are based around dedicated websites that house detailed, fully referenced scientific reports as well as brochures aimed at groups such as oral-health professionals, other health professionals, researchers, policymakers, and patients.

"These projects are a great example of how the EFP can work at the same time with

its partners and with its national-society members to the wider benefit of patients and society at large," said Gernot Wimmer, EFP president.

The EFP is discussing similar projects with its other partners.

The next one in the pipeline will be produced in partnership with Sunstar and will be devoted to periodontal disease and diabetes.

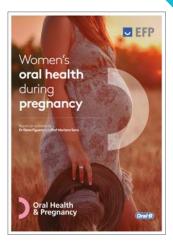
Oral Health & Pregnancy

Oral health is of fundamental importance during pregnancy because periodontal disease has been linked to various complications including preterm birth, low birth weight, and pre-eclampsia.

The Oral Health & Pregnancy project (oralhealthandpregnancy. efp.org), produced in partnership with Oral-B, offers information and advice based on scientific reports covering women's oral health during pregnancy, treating periodontal disease during pregnancy, and the biological mechanisms between periodontal diseases and pregnancy.

Key points from these reports include:

- The mouth is one of the main areas involved in the physiological and hormonal changes that take place during pregnancy;
- Pregnant women can be affected by pregnancy gingivitis, granuloma gravidarium (pregnancy tumour), and periodontitis;
- Research shows that nonsurgical periodontal therapy during the second trimester is safe – but it does not reduce



the incidence of adverse pregnancy outcomes;

- In terms of affecting adverse pregnancy outcomes, it may be more effective to provide periodontal intervention before conception;
- Clinical studies suggest that bacteria from the mouth colonise the foetus and the placenta, with blood as the most likely vehicle of transmission:
- Further co-ordinated research is needed.

"Women's oral health during pregnancy is very important, not only for its possible impact on delivery – and thus the possibility of preventing complications – but also for the oral health of pregnant women themselves," said Professor Mariano Sanz, who co-ordinated the project.

Perio & Caries

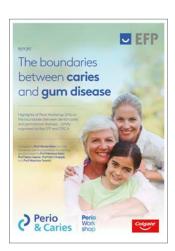
The EFP project Perio & Caries (perioandcaries.efp. org), developed in partnership with Colgate, builds on the outcomes of Perio Workshop 2016, devoted to "The boundaries between dental caries and periodontal disease" and organised by the EFP and ORCA (European Organisation for Caries Research).

This workshop, involving 75 leading cariologists and periodontists, reviewed all available evidence on common links between these preventable oral conditions.

The Perio & Caries project report The boundaries between caries and gum disease, compiled by Professor Nicola West from the workshop's consensus reports, emphasises that periodontal diseases and dental caries are the most common non-communicable diseases in mankind and the main cause of tooth loss.

The dental biofilm is a major biological determinant common to the development of both diseases, which share common risk factors and social determinants.

The report recommends various areas for future research including:



- The role played by genetics in the initiation and progression of both diseases:
- Longitudinal design studies to better explore causality;
- Further analysis of existing epidemiological data to determine the effect of common risk factors;
- Research to improve understanding of potentially modifiable risk factors;
- Properly designed randomised controlled trials addressing the simultaneous management of gingivitis and dental caries;
- Epidemiological surveillance in older populations and studies assessing the impact of elderly comorbidities in delivering effective oral-health preservation strategies.

7

Latest research from the EFP's Journal of Clinical Periodontology



The Journal of Clinical Periodontology (JCP) is the official scientific publication of the European Federation of Periodontology. Edited by Maurizio Tonetti, the JCP aims to convey scientific progress in periodontology to those concerned with applying this knowledge for the benefit of the dental health of the community.

The journal is aimed primarily at clinicians, general practitioners, periodontists, as well as teachers and administrators involved in the organisation of prevention and treatment of periodontal disease. The *JCP* is published monthly and has an impact factor of 3.477. The six articles summarised below were published in the *JCP* between November 2017 and February 2018..

EFP/IDF CONSENSUS

Scientific evidence on the links between periodontal diseases and diabetes: Consensus report and guidelines of the Perio-Diabetes Workshop

This article presents the consensus report and guidelines of the joint workshop on periodontal diseases and diabetes held by the EFP and the International Diabetes Federation (IDF) in Madrid in February 2017.

This workshop updated the evidence for the epidemiological and mechanistic associations between diabetes and periodontitis and re-examined the impact of effective periodontal therapy upon metabolic control

(glycated haemoglobin, HbA1C).

There is strong evidence that people with periodontitis have elevated risk for dysglycaemia and insulin resistance. Cohort studies among people with diabetes demonstrate significantly higher HbA1C levels in patients with periodontitis (versus periodontally healthy patients), but there are insufficient data among people with type-1 diabetes. Periodontitis is also associated with an increased risk of type-2 diabetes.

Mechanistic links between periodontitis and diabetes involve elevations in interleukin (IL)-1- β , tumour necrosis factor- α , IL- δ , receptor activator of nuclear factor-kappa B ligand/osteoprotegerin ratio, oxidative stress and Toll-like receptor (TLR) 2/4 expression.

The EFP and IDF provide consensus guidelines for physicians, oral-healthcare professionals and patients to improve early diagnosis, prevention, and comanagement of diabetes and periodontitis.

Authors: Mariano Sanz, Antonio Ceriello, Martin Buysschaert, Iain Chapple, Ryan T. Demmer, Filippo Graziani, David Herrera, Søren Jepsen, Luca Lione, Phoebus Madianos, Manu Mathur, Eduard Montanya, Lior Shapira, Maurizio Tonetti, and Daniel Vegh.

Published in Journal of Clinical Periodontology Volume 45, Number 2 (February 2018).

S Full article: http:// onlinelibrary.wiley.com/ doi/10.1111/jcpe.12808/full

PERIODONTAL DISEASES

At least three phenotypes exist among periodontitis patients

This retrospective study sought to identify phenotypes of periodontitis patients using an unsupervised modelling technique (clustering), based on pre-treatment radiographic and microbiological characteristics. The study included data from 392 untreated periodontitis patients. A co-regularised spectral clustering algorithm was used to cluster the patients. The resulting clusters were subsequently characterised

based on their demographics, radiographic bone loss patterns, and microbial data.

The vast majority of patients fitted into one of the three main clusters (accuracy 90%):

 Cluster A (n = 18) was characterised by high prevalence and high proportions of Aggregatibacter actinomycetemcomitans, a trend for a more localised pattern of alveolar bone loss, and young individuals. Clusters B (n = 200) and C (n = 135) differed clearly in disease severity patterns and smoking habits, but not in microbiological characteristics.

The study concluded that, on the basis of alveolar bone loss patterns and microbiological data, untreated periodontitis patients can be clustered into at least three phenotypes. These results should be validated in other cohorts, and the clinical utility needs to be

explored based on periodontal treatment outcomes and/or disease progression.

Authors: Chryssa Delatola, Bruno G. Loos, Evgeni Levin, and Marja L.

Published in Journal of Clinical Periodontology Volume 44, Number 11 (November 2017).

Sefull article: http://
onlinelibrary.wiley.com/
doi/10.1111/jcpe.12797/full

PERIODONTAL DISEASES

Natural history of periodontitis: Disease progression and tooth loss over 40 years

This study assessed long-term attachment and periodontitis-related tooth loss (PTL) in untreated periodontal disease over 40 years.

The data used originated from the natural-history-of-periodontitis study in Sri Lankan tea labourers first examined in 1970. In 2010, 75 subjects (15.6%) of the original cohort were re-examined.

PTL over 40 years varied between 0 and 28 teeth (mean 13.1). Four subjects presented with no PTL, while 12 were edentulous. Logistic regression revealed attachment loss as a statistically significant covariate for PTL (p < .004). Markov chain analysis showed that smoking and calculus were associated with disease initiation and that calculus, plaque, and gingivitis were associated with loss of attachment

and progression to advanced disease.

These results highlight the importance of treating early periodontitis along with smoking cessation in those under 30 years of age. They further show that calculus removal, plaque control, and the control of gingivitis are essential in preventing disease progression, further loss of attachment, and tooth loss.

Authors: Christoph A. Ramseier, Age Anerud, Mary Dulac, Martina Lulic, Mary P. Cullinan, Gregory J. Seymour, Malcolm J. Faddy, Walter Bürgin, Marc Schätzle, and Niklaus P. Lang.

Published in Journal of Clinical Periodontology Volume 44, Number 12 (December 2017).

Sull article: http://onlinelibrary.wiley.com/doi/10.1111/ jcpe.12782/full

Latest research

Clinical Periodontology

PERIODONTAL DISEASES

Patterns of periodontal disease progression based on linear mixed models of clinical attachment loss

This longitudinal cohort study examined patterns of periodontal-disease progression at progressing sites and subjects defined using linear mixed models (LMM) of clinical attachment loss (CAL).

A total of 113 periodontally healthy and 302 periodontitis subjects had their CAL calculated bimonthly for 12 months. LMMs were fitted for each site and the predicted CAL levels used to categorise their progression state. Participants were grouped based on the number of progressing sites into "unchanged", "transitional", and "active" subjects. Patterns of periodontal disease progression were explored using descriptive statistics.

Progression occurred primarily at molars (50% of progressing sites) and inter-proximal sites (72%), affected a higher proportion of deep than shallow sites (2.7% versus 0.7%), and pocketing was the main mode of progression (49%).

Authors: Ricardo Teles, Kevin Moss, John S. Preisser, Robert Genco, William V. Giannobile, Patricia Corby, Nathalia Garcia, Heather Jared, Gay Torresyap, Elida Salazar, Julie Moya, Cynthia Howard, Robert Schifferle, Karen L. Falkner, Jane Gillespie, Debra Dixon, and

Published in Journal of Clinical Periodontology Volume 45, Number 1 (January 2018).

S Full article: http://onlinelibrary.wiley. com/doi/10.1111/jcpe.12827/full

PERIODONTAL THERAPY

Surgical treatment of peri-implantitis: Three-year results from a randomised controlled clinical trial

This study reports on the three-year followup of patients enrolled in a randomised controlled clinical trial on surgical treatment of advanced peri-implantitis.

A hundred patients with advanced peri-implantitis were randomly assigned to one of four treatment groups. Surgical therapy aiming at pocket elimination was performed and, in three test groups, supplemented by either systemic antibiotics, the use of an antiseptic agent for implantsurface decontamination, or both. Outcomes were evaluated after one and three years through clinical and radiological examinations. Differences between groups were explored by regression analysis.

Implant-surface characteristics had a significant impact on three-year outcomes, in favour of implants with non-modified surfaces. The benefits of systemic antibiotics were limited to implants with modified surfaces and to the first year of follow-up.

Authors: Olivier Carcuac, Jan Derks, Ingemar Abrahamsson, Jan L. Wennström, Max Petzold, and Tord Berglundh. Published in Journal of Clinical Periodontology Volume 44, Number 12 (December 2017).

S Full article: http://onlinelibrary.wiley. com/doi/10.1111/jcpe.12813/full

IMPLANT THERAPY

Occurrence of cases with peri-implant mucositis or peri-implantitis in a 21-26 years follow-up study

This longitudinal case series sought to determine the prevalence and development of peri-implant mucositis and peri-implantitis and to assess risk factors over time.

A total of 218 of 294 patients who had received dental implants between 1988 and 1992 were examined between 2000 and 2002, and 86 individuals were re-examined 20-26 years after the first examination. The diagnosis of peri-implant mucositis and periimplantitis at examination III was 54.7% and 22.1%, respectively.

Surgical treatment of peri-implantitis after examination II resulted in a bone gain for

two of 12 individuals. Individuals with ≥3 implants at examination II were at risk for peri-implantitis at examination III (P< 0.05).

The diagnosis and occurrence of peri-implantitis and peri-implant mucositis were high. Healthy conditions at implants after 9-14 years were predictive of future implant health.

Authors: Stefan Renvert, Christel Lindahl, and Gösta Rutger Persson.

Published in Journal of Clinical Periodontology Volume 45, Number 2 (February 2018).

🦠 Full article: http://onlinelibrary.wiley. com/doi/10.1111/jcpe.12822/full

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- Ireland Irish Society of Periodontolgy
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- Netherlands Nederlandse Vereniging voor Parodontologie
- Norway Norsk periodontist forening
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- Serbia Udruzenje Parodontologa Srbije
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- Morocco Société Marocaine de Parodontologie et d'Implantologie
- Russia Российской Пародонтологической Ассоциации
- Ukraine Асоціація лікарів-пародонтологів України















