Impact of defect configuration on the clinical outcome following surgical regenerative therapy of peri-implantitis.

Schwarz F, Sahm N, Schwarz K, Becker J.


Abstract

OBJECTIVES: The present study aimed at investigating the impact of defect configuration on the clinical outcome of surgical regenerative therapy of peri-implantitis lesions using a natural bone mineral in combination with a collagen membrane (NBM+CM).

MATERIALS AND METHODS: Twenty-seven patients (n=27 defects) exhibited three different types of peri-implantitis lesions including either Class Ib (buccal dehiscence+semicircumferential), Class Ic (buccal dehiscence+circumferential), or Class Ie (circumferential) intra-bony defects (n=9 defects per group). All defects were treated with access flap surgery and the application of NBM+CM.

RESULTS: At 6 and 12 months, Class Ie defects tended to reveal higher changes in the mean probing depth (PD) and clinical attachment level (CAL) values when compared with Class Ib and Class Ic groups. However, significant differences were only observed at 6 months (PD: 2.9 +/- 0.3 versus 1.4 +/- 0.5 versus 1.3 +/- 0.7 mm; CAL: 2.5 +/- 0.5 versus 0.9 +/- 0.8 versus 0.9 +/- 0.7 mm). Site-level analysis has pointed to lowest PD and CAL changes at the midbuccal aspect of Class Ib and Class Ic groups.

CONCLUSION: Defect configuration may have an impact on the clinical outcome following surgical regenerative therapy of peri-implantitis lesions. While Class Ie defects seem to be promising in conjunction with NBM+CM, Class Ib and Class Ic may be considered as unfavourable.

Surgical regenerative treatment of peri-implantitis lesions using a nanocrystalline hydroxyapatite or a natural bone mineral in combination with a collagen membrane: a four-year clinical follow-up report.

Schwarz F, Sahm N, Bieling K, Becker J.


Abstract

OBJECTIVES: The present case series aimed at investigating the 4-year clinical outcomes following surgical regenerative therapy of peri-implantitis lesions using either a nanocrystalline hydroxyapatite (NHA) or a natural bone mineral in combination with a collagen membrane (NBM+CM).
MATERIALS AND METHODS: Twenty patients suffering from moderate peri-implantitis (n=20 intrabony defects) were randomly treated with (1) access flap surgery (AFS) and the application of NHA (n=9), or with AFS and the application of NBM+CM (n=11). Clinical and radiographic (R) parameters were recorded at baseline (R) and after 36 and 48 (R) months of non-submerged healing.

RESULTS: One patient from the NBM+CM group was discontinued from the study due to severe pus formation at 36 months. Compared with NHA, the application of NBM+CM resulted in higher mean PD reductions (NBM+CM: 2.5 +/- 0.9 mm versus NHA: 1.1 +/- 0.3 mm) and clinical attachment-level gains (NBM+CM: 2.0 +/- 1.0 mm versus NHA: 0.6 +/- 0.5 mm) at 48 months. A radiographic bone fill was observed for five sites in the NHA group, and eight sites in the NBM+CM group.

CONCLUSION: While the application of NBM+CM resulted in clinical improvements over a period of 4 years, the long-term outcome obtained with NHA without barrier membrane must be considered as poor.

Effect of enamel matrix derivative on proliferation and differentiation of osteoblast cells grown on the titanium implant surface.

Qu Z, Andrukhov O, Laky M, Ulm C, Matejka M, Dard M, Rausch-Fan X.

Abstract

OBJECTIVES.: Enamel matrix derivative (EMD) is widely used in promoting periodontal regeneration, but the mechanisms underlying its effects are not entirely clear. In particular, the effect of EMD on osseointegration of dental implants and its application in the treatment of peri-implantitis are still debatable. The purpose of this study was to investigate the effect of EMD on proliferation and differentiation of osteoblasts grown on the Ti implant surface.

STUDY DESIGN.: Osteoblast-like MG-63 cells were seeded on coarse-grit-blasted and acid-etched surface Ti implant disks and stimulated with various EMD concentrations. Cell proliferation/viability, alkaline phosphatase activity, osteocalcin production, and expression levels of osteoprotegerin (OPG) and receptor activator of nuclear factor κB ligand (RANKL) were determined.

RESULTS.: EMD inhibited the proliferation/viability of MG-63 cells. Furthermore, EMD significantly increased the alkaline phosphatase activity and osteocalcin production in MG-63 cells grown on Ti surfaces. Finally, EMD enhanced mRNA expression level of OPG and did not influence that of RANKL. CONCLUSION(S): Application of EMD in the dental implantolology may have a positive effect on implant osseointegration, and further studies are required to improve clinical outcome.
Surgical Treatment of Peri-implantitis.

Søren Schou, Tord Berglundh, Niklaus P. Lang

INT J ORAL MAXILLOFAC IMPLANTS 2004;19(SUPPL):140-149

Surgical treatment of peri-implantitis lesions can be performed in cases with considerable pocket formation (larger than 5 mm) and bone loss after the acute infection has been resolved and proper oral hygiene has been instituted. A literature review was conducted to ascertain current knowledge about surgical treatment options for peri-implantitis around commercially pure titanium implants. Recently reported animal studies involving implants with a rough surface indicate that considerable bone regeneration and re-osseointegration can be obtained by using membrane-covered autogenous bone graft particles. However, comparisons of the treatment outcomes in studies involving humans and animals are difficult because of differences in implant type, graft type, and evaluation protocols. In addition, different treatment procedures, including implant surface decontamination methods, have been used. Therefore, further long-term studies in humans involving sufficient numbers of subjects are needed to provide a solid basis for recommendations regarding the surgical treatment of peri-implantitis. Moreover, the encouraging treatment outcomes of regenerative procedures recently revealed in animal experiments and applied in the treatment of peri-implantitis around implants with sandblasted/acid-etched surfaces have not yet been documented for implants with other surfaces, especially turned surfaces. Numerous implant surface decontamination methods have been suggested as part of the surgical treatment of peri-implantitis. Decontamination of affected implants with titanium plasma-sprayed or sandblasted/acid-etched surfaces may most easily and effectively be achieved by applying gauze soaked alternately in chlorhexidine and saline.

Artikel frei einsehbar unter:
http://www.iti.org/?a=1&t=0&y=3102&r=0&n=184&i=&c=25&v=list2&o=&s=
(www.iti.org -> Publications -> Proceedings of the third ITI Consensus Conference)
Dort kann Artikel gespeichert werden

Healing of intrabony peri-implantitis defects following application of a nanocrystalline hydroxyapatite (Ostim) or a bovine-derived xenograft (Bio-Oss) in combination with a collagen membrane (Bio-Gide). A case series.

Schwarz F, Bieling K, Latz T, Nuesry E, Becker J.


Abstract

OBJECTIVES: The aim of the present case series was to evaluate the healing of intrabony peri-implantitis defects following application of a nanocrystalline hydroxyapatite (NHA) or a bovine-derived xenograft in combination with a collagen membrane (BDX+BG).

MATERIAL AND METHODS: Twenty-two patients having moderate peri-implantitis (n=22 intrabony defects) were randomly treated with (i) access flap surgery (AFS) and the
application of NHA, or with AFS and the application of BDX+BG. Clinical parameters were recorded at baseline and after 6 months of non-submerged healing.

RESULTS: Post-operative wound healing revealed that NHA compromised initial adhesion of the mucoperiosteal flaps in all patients. At 6 months after therapy, NHA showed a reduction in the mean PD from 7.0+/−0.6 to 4.9+/−0.6 mm and a change in the mean clinical attachment loss (CAL) from 7.5+/−0.8 to 5.7+/−1.0 mm. In the BDX+BC group, the mean PD was reduced from 7.1+/−0.8 to 4.5+/−0.7 mm and the mean CAL changed from 7.5+/−1.0 to 5.2+/−0.8 mm.

CONCLUSION: Within the limits of the present case series, it can be concluded that at 6 months after surgery both therapies resulted in clinically important PD reductions and CAL gains.

The effect of enamel matrix proteins on the spreading, proliferation and differentiation of osteoblasts cultured on titanium surfaces.

Miron RJ, Oates CJ, Molenberg A, Dard M, Hamilton DW.


Abstract

Modifications of implant surface topography and chemistry have proven a means to enhance osseointegration, a process that ensures the stability of bone-contacting devices, including titanium dental implants. The commercial product Emdogain is an enamel matrix derivative (EMD) extracted from porcine teeth commonly used in periodontal surgery, where it has been shown to potentiate regeneration of bone. The aim of the present study was to evaluate the effect of EMD on the attachment, proliferation and differentiation of osteoblasts on titanium surfaces in vitro. Pickled (smooth) and SLA (roughened) titanium discs were coated with EMD or left uncoated. Primary rat calvarial osteoblasts were cultured on each surface from 1h to 4 weeks. EMD significantly increased cell spreading and proliferation at time points ranging from 3 to 7 days on both topographies. Alkaline phosphatase activity was significantly increased on EMD-coated titanium compared with titanium alone. Moreover, there was a 6 fold increase in levels of mRNA encoding bone sialoprotein and osteocalcin in osteoblasts cultured on EMD-coated titanium surfaces compared with uncoated surfaces. We conclude that coating of titanium with EMD enhances the proliferation and differentiation of osteoblasts irrespective of the titanium substratum topography.
Implant surface characteristics influence the outcome of treatment of peri-implantitis: an experimental study in dogs.

Albouy JP, Abrahamsson I, Persson LG, Berglundh T.


Abstract

Aim: To analyse the effect of surgical treatment of peri-implantitis without systemic antibiotics at different types of implants.

Material and methods: Four implants representing four different implant systems - turned (Biomet 3i), TiOblast (Astra Tech AB), SLA (Straumann AG) and TiUnite (Nobel Biocare AB) were placed in the left side of the mandible in six dogs, 3 months after tooth extraction. Experimental peri-implantitis was initiated by placement of ligatures and plaque formation. The ligatures were removed when about 40-50% of the supporting bone was lost. Four weeks later, surgical therapy including mechanical cleaning of implant surfaces was performed. No systemic antibiotics or local chemical antimicrobial therapy were used. After 5 months, block biopsies were obtained and prepared for histological analysis.

Results: Two of the TiUnite implants were lost after surgical therapy. Radiographic bone gain occurred at implants with turned, TiOblast and SLA surfaces, while at TiUnite implants additional bone loss was found after treatment. Resolution of peri-implantitis was achieved in tissues surrounding implants with turned and TiOblast surfaces.

Conclusion: Resolution of peri-implantitis following treatment without systemic or local antimicrobial therapy is possible but the outcome of treatment is influenced by implant surface characteristics.


Lindhe J, Meyle J; Group D of European Workshop on Periodontology.

Collaborators (13)


Abstract
Issues related to peri-implant disease were discussed. It was observed that the most common lesions that occur, i.e. peri-implant mucositis and peri-implantitis are caused by bacteria. While the lesion of peri-implant mucositis resides in the soft tissues, peri-implantitis also affects the supporting bone. Peri-implant mucositis occurs in about 80% of subjects (50% of sites) restored with implants, and peri-implantitis in between 28% and 56% of subjects (12-40% of sites). A number of risk indicators were identified including (i) poor oral hygiene, (ii) a history of periodontitis, (iii) diabetes and (iv) smoking. It was concluded that the treatment of peri-implant disease must include anti-infective measures. With respect to peri-implant mucositis, it appeared that non-surgical mechanical therapy caused the reduction in inflammation (bleeding on probing) but also that the adjunctive use of antimicrobial mouthrinses had a positive effect. It was agreed that the outcome of non-surgical treatment of peri-implantitis was unpredictable. The primary objective of surgical treatment in peri-implantitis is to get access to the implant surface for debridement and decontamination in order to achieve resolution of the inflammatory lesion. There was limited evidence that such treatment with the adjunctive use of systemic antibiotics could resolve a number of peri-implantitis lesions. There was no evidence that so-called regenerative procedures had additional beneficial effects on treatment outcome.

The efficacy of interventions to treat peri-implantitis: a Cochrane systematic review of randomised controlled clinical trials.


Esposito M, Grusovin MG, Coulthard P, Worthington HV.

Abstract

OBJECTIVES: To identify the most effective interventions for treating peri-implantitis around osseointegrated dental implants. DATA SOURCES: The Cochrane Oral Health Group’s Trials Register, CENTRAL, MEDLINE and EMBASE were searched and several journals were handsearched with no language restriction up to January 2008.

REVIEW METHODS: Randomised controlled trials (RCTs) comparing interventions for treating peri-implantitis were eligible. Screening of studies, quality assessment and data extraction were conducted in duplicate. Missing information was requested. Outcome measures were: implant failure; complications; changes in radiographic marginal bone level, probing 'attachment' level (PAL), probing pocket depth (PPD), and recession; aesthetics evaluated by patients and dentists; cost and treatment time.

RESULTS: Ten eligible trials were identified, and seven were included (148 patients). They tested: (1) local antibiotics vs ultrasonic debridement; (2) adjunctive local antibiotics to debridement; (3) different techniques of subgingival debridement; (4) laser vs manual debridement and chlorhexidine irrigation/ gel; (5) systemic antibiotics plus resective surgery plus two local antibiotics with and without implant surface smoothening; and (6) nanocrystalline hydroxyapatite vs Bio-Oss and resorbable barriers. Follow up ranged from 3 months to 2 years. After 4 months, adjunctive local antibiotics to manual debridement in
patients who lost at least 50% of peri-implant bone showed improved PAL and PPD (0.6
mm). After 6 months, peri-implant infrabony defects > 3 mm treated with Bio-Oss and
barriers gained 0.5 mm more PAL and PPD than those treated with hydroxyapatite. In four
trials subgingival mechanical debridement seemed to achieve results similar to more
complex therapies.

CONCLUSIONS: There is very little reliable evidence suggesting which could be the most
effective interventions for peri-implantitis. Sample sizes were too small and follow up too
short. This is not to say that currently used interventions are ineffective. Larger well-designed
RCTs are needed.

Untersuchungen zur Fräsbarkeit und Polierbarkeit von gegossenem
unlegiertem Titan

Andre M, Schwarze T, Günay H, Geurtsen W.


Zusammenfassung:

Ziel dieser Untersuchung war, die Effizienz unterschiedlicher Diamant- und Hartmetall-
sowie Polierinstrumente bei der Bearbeitung von gegossenem unlegiertem Titan zu bestimmen.
Die Bearbeitung der Prüfkörper erfolgte in einer Frässapparatur mit Schnittleistungserfassung.
Die Bestimmung der Oberflächenqualität wurde mit einem Profilographen vorgenommen.
Anschließend wurden die Proben im REM untersucht. Sowohl bei der
Schnittleistungsbestimmung als auch bei der Oberflächenuntersuchung erbrachten
creuzverzahnte Hartmetallfräser im Vergleich zu diamantiertem Instrumenten bessere
Ergebnisse. Eine Politur der Titanoberflächen war mit den verwendeten Polierrändern und
Gummipolierspitzen nur unzureichend möglich.

Micro-morphometric assessment of titanium plasma-sprayed coating removal
using burs for the treatment of peri-implant disease.

Rimondini L, Cicognani Simoncini F, Carrassi A.


Abstract

This study evaluated, in vitro, the effectiveness of diamond and carbide burs, and bur
sequences to remove the plasma-sprayed titanium coating from IMZ fixture surfaces. Fifteen
polishing procedures were tested. They included the use of 12, 16, 30 bladed carbide burs or
bevered carbide burs and 30, 15, 8 microns mean-particles-size diamond burs. The treated
surfaces were evaluated with profilometer and SEM. Worn burs and titanium debris produced
by the grinding were observed with SEM. All procedures produce smoother surfaces than
baseline plasma-sprayed surfaces for both Ra and Rz(DIN) parameters (P < 0.001). A
roughening effect of the 8 microns mean-grit diamond bur and 30 bladed burs were noted.
The single carbide burs produce polished surfaces affected by waviness. Waviness was
minimized by sequence or diamond bur use. The carbide bur blades were variously damaged after their use. In contrast, the grit of diamond burs was observed to be clogged by titanium debris whose amount seemed to be inversely related to the diamond mean particle size. Debris produced by diamond burs was granular whereas that produced by carbide bladed burs showed needle or flake morphology. In conclusion, the most effective titanium plasma sprayed removal were obtained by 30 microns and 15 microns mean-particle-size diamond burs, i.e. 30 microns plus 15 microns diamond burs and carbide 12 plus 16 bladed burs used in sequence.

---

**Platelet-derived growth factor and dexamethasone combined with a collagen matrix induce regeneration of the periodontium in monkeys.**

Rutherford RB, Ryan ME, Kennedy JE, Tucker MM, Charette MF.


**Abstract**

Platelet-derived growth factor (PDGF) and the glucocorticoid dexamethasone combined with a collagen carrier matrix (CM) induced regeneration of the periodontium in monkeys. Regeneration was stringently defined as: (1) new cementum, (2) new supra-crestal bone extending coronally from the residual alveolar interdental septum and (3) functionally-oriented periodontal ligament fibers attaching new cementum to new bone. A single application of PDGF/dexamethasone/CM or CM was placed in debrided lesions of experimental periodontitis displaying 3-5 mm of attachment loss associated with horizontal and angular bony defects. Regeneration, judged histologically by these criteria and quantified by computer assisted histomorphometry after 4 weeks, was present only in PDGF/dexamethasone/CM treated lesions and not in those treated with CM or debridement alone. PDGF/dexamethasone/CM induced 5-fold more new cementum and ligament, and 7-fold more supra-crestal bone than control treatments. The presence of substantial amounts of regenerated periodontium including increased height of the alveolar bone; fill of vertically resorbed interdental alveolar septa in PDGF/dexamethasone/CM treated lesions suggests that this combination may provide a new therapeutic agent for the regeneration of lesions of periodontitis associated with horizontal as well as angular bony defects.

---

**Decision tree for the management of periimplant diseases.**

Okayasu K, Wang HL..

**Abstract**

The development of implants reflects one of the foremost breakthroughs of dentistry. As the market keeps growing exponentially, the implantologist faces an unavoidable challenge, that is, how to deal with the complications associated with implants. Literature published so far has focused in dealing with the technical and surgical aspects of implant therapy. Information regarding the management of periimplant diseases is rather lacking. Hence, the purpose of
A systematic review of the incidence of biological and technical complications in implant dentistry reported in prospective longitudinal studies of at least 5 years.

Berglundh T, Persson L, Klinge B.


Abstract

OBJECTIVE:

To systematically review the incidence of biological and technical complications in implant therapy reported in prospective longitudinal studies of at least 5 years.

METHODS:

A MEDLINE search was conducted for prospective longitudinal studies with follow-up periods of at least 5 years. Screening and data abstraction were performed independently by multiple reviewers. The types of complications assessed were as follows: implant loss, sensory disturbance, soft tissue complications, peri-implantitis, bone loss \( \geq 2.5 \) mm, implant fracture and technical complications related to implant components and suprastructures.

RESULTS:

The search provided 1310 titles and abstracts, out of which 159 were selected for full-text analysis. Finally, 51 studies were included. Meta analysis of these studies indicated that implant loss prior to functional loading is to be expected to occur in about 2.5% of all implants placed in implant therapy including more than one implant and when routine procedures are used. Implant loss during function occurs in about 2-3% of implants supporting fixed reconstructions, while in overdenture therapy >5% of the implants can be expected to be lost during a 5-year period. Few studies (41% of those included) reported data on the incidence of persisting sensory disturbance >1 year following implant surgery. Most of the studies that provided such data reported on the absence or a low incidence (1-2%) of this complication beyond this interval. A higher incidence of soft tissue complications was reported for patients treated with implants supporting overdentures. There is limited information regarding the occurrence of peri-implantitis and implants exhibiting bone loss >or=2.5 mm. Implant fracture is a rare complication and occurs in <1% of all implants during a 5-year period. The incidence of technical complications related to implant components and suprastructures was higher in overdentures than in fixed reconstructions.

CONCLUSION:

Implant loss was most frequently described (reported in about 100% of studies), while biological complications were considered in only 40-60% and technical complications in only 60-80% of the studies. This observation indicates that data on the incidence of biological and technical complications may be underestimated and should be interpreted with caution.
Long time follow up of implant therapy and treatment of peri-implantitis.
Roos-Jansåker AM.

Abstract

Dental implants have become an often used alternative to replace missing teeth, resulting in an increasing percentage of the adult population with implant supported prosthesis. Although favourable long-term results of implant therapy have been reported, infections occur. Until recently few reports included data on peri-implant infections, possibly underestimating this complication of implant treatment. It is possible that some infections around implants develop slowly and that with time peri-implantitis will be a common complication to implant therapy as an increasing number of patients have had their implants for a long time (>10 years). Data on treatment of peri-implant lesions are scarce leaving the clinician with limited guidance regarding choice of treatment. The aim of this thesis was to study the frequency of implant loss and presence of peri-implant lesions in a group of patients supplied with Brånemark implants 9-14 years ago, and to relate these events to patient and site specific characteristics. Moreover three surgical treatment modalities for peri-implantitis were evaluated. The thesis is based on six studies; Studies I-III included 218 patients and 1057 implants followed for 9-14 years evaluating prevalence of, and factors related to implant loss (Paper I) and prevalence of peri-implant infections and related factors (Paper I-III). Study IV is a review describing different treatment modalities of peri-implant infections. Study V is a prospective cohort study involving 36 patients and 65 implants, evaluating the use of a bone substitute with or without the use of a resorbable membrane. Study VI is a case series with 12 patients and 16 implants, evaluating a bone substitute in combination with a resorbable membrane and submerged healing. This thesis demonstrated that: After 9-14 years the survival rates of dental implants are high (95.7%). Implant loss seems to cluster within patients and are related to periodontitis evidenced as bone loss on radiographs at remaining teeth before implant placement. (Paper I) Peri-implantitis is a common clinical entity after 9-14 years. (Paper II) Using the implant as the statistical unit the level of keratinized mucosa and pus were explanatory for a bone level at > or =3 threads (1.8 mm). When the patient was used as a statistical unit a history of periodontitis and smoking were explanatory for peri-implantitis. (Paper III) Animal research has demonstrated that re-osseointegration can occur. The majority of human studies were found to be case reports. Using submerged healing and bone transplants, bone fill can occur in peri-implant defects. (Paper IV) Surgical treatment of peri-implantitis using a bone substitute with or without a resorbable membrane resulted in similar pocket depth reduction, attachment gain and defect fill. (Paper V) Bone substitute in combination with a resorbable membrane and a submerged healing resulted in defect fill > or =2 threads (1.2 mm) in 81% of the implants. (Paper VI) In conclusion: 9-14 years after implant installation peri-implant lesions are a common clinical entity. Smokers and patients with a history of periodontal disease are at higher risk to develop peri-implantitis. Clinical improvements and defect fill can be obtained with various surgical techniques using a bone substitute.
Comparative biology of chronic and aggressive periodontitis vs. peri-implantitis.

Heitz-Mayfield LJ, Lang NP.


Abstract

This review was undertaken to address the similarities and dissimilarities between the two disease entities of periodontitis and peri-implantitis. The overall analysis of the literature on the etiology and pathogenesis of periodontitis and peri-implantitis provided an impression that these two diseases have more similarities than differences. First, the initiation of the two diseases is dependent on the presence of a biofilm containing pathogens. While the microbiota associated with periodontitis is rich in gram-negative bacteria, a similar composition has been identified in peri-implant diseases. However, increasing evidence suggests that S. aureus may be an important pathogen in the initiation of some cases of peri-implantitis. Further research into the role of this gram-positive facultative coccus, and other putative pathogens, in the development of peri-implantitis is indicated. While the initial host response to the bacterial challenge in peri-implant mucositis appears to be identical to that encountered in gingivitis, persistent biofilm accumulation may elicit a more pronounced inflammatory response in peri-implant mucosal tissues than in the dentogingival unit. This may be a result of structural differences (such as vascularity and fibroblast-to-collagen ratios). When periodontitis and peri-implantitis were produced experimentally by applying plaque-retaining ligatures, the progression of mucositis to peri-implantitis followed a very similar sequence of events as the development of gingivitis to periodontitis. However, some of the peri-implantitis lesions appeared to have periods of rapid progression, in which the infective lesion reached the alveolar bone marrow. It is therefore reasonable to assume that peri-implantitis in humans may also display periods of accelerated destruction that are more pronounced than that observed in cases of chronic periodontitis. From a clinical point of view the identified and confirmed risk factors for periodontitis may be considered as identical to those for peri-implantitis. In addition, patients susceptible to periodontitis appear to be more susceptible to peri-implantitis than patients without a history of periodontitis. As both periodontitis and peri-implantitis are opportunistic infections, their therapy must be antiinfective in nature. The same clinical principles apply to debridement of the lesions and the maintenance of an infection-free oral cavity. However, in daily practice, such principles may occasionally be difficult to apply in peri-implantitis treatment. Owing to implant surface characteristics and limited access to the microbial habitats, surgical access may be required more frequently, and at an earlier stage, in periimplantitis treatment than in periodontal therapy. In conclusion, it is evident that periodontitis and peri-implantitis are not fundamentally different from the perspectives of etiology, pathogenesis, risk assessment, diagnosis and therapy. Nevertheless, some difference in the host response to these two infections may explain the occasional rapid progression of peri-implantitis lesions. Consequently, a diagnosed peri-implantitis should be treated without delay.
Peri-implantitis in a specialist clinic of periodontology. Clinical features and risk indicators.

Carucuac O, Jansson L.


Abstract

Implant therapy has become a widely recognized treatment alternative for replacing missing teeth. Several long term follow-up studies have shown that the survival rate is high. However, complications may appear and risk indicators associated with early and late failures have been identified. The purpose of the present retrospective clinical study was to describe some clinical features of patients with clinical signs of peri-implantitis and to identify risk indicators of peri-implantitis in a population at a specialist clinic of Periodontology. In total, the material consisted of 377 implants in 111 patients with the diagnosis peri-implantitis. The mean age at the examination was found to be 56.3 years (range 22-83) for females and 64.1 years (range 27-85) for males. The mean number of remaining teeth was found to be 10.5 (S.D. 8.89) and the mean number of implants was 5.85 (S.D. 3.42). For a majority of the subjects, more than 50% of the remaining teeth had a marginal bone loss of more than 1/3 of the root length. Forty-six percent of the patients visited regularly dental hygienists for supportive treatment. The percentage of implants with peri-implantitis was significantly increased for smokers compared to non-smokers (p = 0.04). In the group of non-smokers, 64% of the implants had the diagnosis peri-implantitis, while the corresponding relative frequency for smokers was 78%. A majority of the individuals had a Plaque index and Bleeding on probing index >50%. The median of the follow-up time after implant placement was 7.4 years and the observation period was not significantly correlated to the degree of bone loss around the implants. Among the subjects with a mean bone loss >6 mm at implants with peri-implantitis, more than 70% had a mean marginal bone loss > 1/3 of the root length of the remaining teeth. A positive and significant correlation was found between the degree of marginal bone loss in remaining teeth and the degree of bone loss around implants with peri-implantitis. In conclusion, the results of the present study indicate that smoking as well as previous history of periodontitis are associated with peri-implantitis and may represent risk factors for this disease.

Periimplant diseases: where are we now?--Consensus of the Seventh European Workshop on Periodontology.

Lang NP, Berglundh T; Working Group 4 of Seventh European Workshop on Periodontology.


Subgingival debridement appears as effective as more complex and expensive therapies for peri-implantitis.

McMullan-Vogel CG.


Re-osseointegration on previously contaminated surfaces: a systematic review.

Renvert S, Polyzois I, Maguire R.


Abstract

OBJECTIVES:

The aim of this review was to search the literature for the existing evidence of re-osseointegration after treatment of peri-implantitis at contaminated implant surfaces.

MATERIAL AND METHODS:

A search of PubMed as well as additional hand search of articles were conducted. Publications and articles accepted for publication up to November 2008 were included.

RESULTS:

A total of 25 animal studies fulfilled the inclusion criteria for this review. Access surgery with closed healing has been observed to positively influence the rate of re-osseointegration when compared with non-surgical decontamination of the implant surface with open healing. Open debridement including surface decontamination may result in re-osseointegration and this integration was more pronounced on rougher than on smooth implant surfaces. The adjunctive use of regenerative procedures resulted in varying amounts of re-osseointegration.

CONCLUSIONS:
Re-osseointegration is possible to obtain on a previously contaminated implant surface and can occur in experimentally induced peri-implantitis defects following therapy. The amount of re-osseointegration, varied considerably within and between studies. Implant surface characteristics may influence the degree of re-osseointegration. Surface decontamination alone can not achieve substantial re-osseointegration on a previously contaminated implant surface. No method predictably accomplished complete resolution of the peri-implant defect.

**Implant failure: etiology and complications.**

Sakka S, Coulthard P.


**Abstract**

The possible occurrence of implant failure is a major concern for implantologists and knowledge in such unavoidable fact is clinically essential. Periimplantitis is an inflammatory response in which there is a loss of the bony support of the implant. Diagnosis is based on the clinical signs of infection such as hyperplastic soft tissues, suppuration, colour changes of the marginal peri-implant tissues and gradual bone loss. This site-specific infection may have many features in common with chronic adult periodontitis. Surgical trauma, micromotion and overload are also considered to be associated with implant failures. The lack of osseointegration is generally distinguished by implant mobility and radiological radiolucency. Here, the implant is considered to be failed. Progressive marginal bone loss without marked mobility is referring to a failing implant. The purpose of this concise review was to discuss the implant complications and failure by highlighting the major etiologic factors as well as the parameters used for evaluating such failure.

➡️ Artikel frei zugänglich:

➡️ http://www.medicinaoral.com/pubmed/medoralv16_i1_p42.pdf

---

**[Treatment of advanced peri-implantitis in the mandible].**

[Article in French, German]

Bassetti R, Bassetti M, Enkling N, Mericske-Stern R.


**Abstract**

This case report shows the experimental treatment of a 85 year old female with advanced periimplantitis, the surgical augmentation, the clinical as well as the radiological follow-up until twelve months after surgery. the treatment of the advanced periimplantitis with a three-dimensional vertical defect around the implant consisted of a surgical bone augmentation technique supported by the Air-Flow Master® system (EMS, Nyon, Switzerland).
Peri-implantitis: tools and techniques for disinfecting the implant surface.

Bories C, Struillou X, Badran Z, Soueidan A.


Abstract

Introduction: Peri-implantitis is a late complication of dental implant treatment, induced by microbiological changes. Since the disorder is frequent, a review is indicated of the microorganisms that influence it and of the existing treatment options. Objective: To conduct a literature review of the microbiota associated to peri-implantitis and the existing treatment options. Material and Method: A PubMed literature search was made of the studies on the microbiota associated to dental implants in healthy patients and patients with peri-implantitis, as well as of the latest treatment developments, using the following key words: "peri-implantitis AND microbiota", "periimplantitis AND microbiota", "peri-implantitis AND treatment", and "periimplantitis AND treatment". Only clinical studies in humans were considered. The following criteria were applied for including articles in the analysis: a) for the peri-implant microbiota, the search limits were human studies after the year 2000; and b) for the treatment of peri-implantitis, the search limits were randomized and controlled clinical trials (RCTs) in humans, with a minimum follow-up of 4 months, and publication after the year 2000. Results: A total of 18 articles were selected in relation to peri-implant microbiota, and 13 in relation to the treatment of peri-implantitis (8 involving nonsurgical mechanical treatments and 5 surgical procedures). Conclusions: Evaluation of the literature has shown the microbiota associated to peri-implantitis to be more complex than that found under healthy peri-implant conditions - the main flora consisting of anaerobic gramnegative bacteria. No clear criteria have been identified for the diagnosis and treatment of peri-implantitis.
Periimplantitis.
Sánchez-Gárces MA, Gay-Escoda C.

Abstract
Orodental rehabilitation through the use of implants offers very high success rates. In this paper, we describe some of the complications involved with this technique, such as periimplant disease and, within this category, periimplantitis, an inflammatory reaction in which there is a loss of the bony support of the implant accompanied by inflammation. The aetiology of the disease is conditioned by the status of the tissue surrounding the implant, implant design, degree of roughness, the poor alignment of implant components, external morphology and excessive mechanical load. The microorganisms most commonly associated with implant failure are spirochetes and mobile forms of Gram-negative anaerobes, unless the origin is the result of simple mechanical overload. Diagnosis is based on changes of colour in the gum, bleeding and probing depth of periimplant pockets, suppuration, x-ray and gradual loss of bone height around the tooth. Treatment will differ depending upon whether it is a case of mucositis or periimplantitis. Therapeutic objectives focus on correcting technical defects by means of surgery and decontamination techniques (abrasion with carbon particles, citric acid solution, topical tetracycline application and laser surgery). This study also presents a microbiological study of periimplantitis conducted by the Barcelona School of Dentistry that determined that the antibiotic therapy proven to be most efficacious in the antibiogram was the association of amoxycillin and clavulanic acid.

Artikel frei zugänglich unter:
http://www.medicinaoral.com/pubmed/medoralv9suppl_i_p69.pdf