Does Decompression of Odontogenic Cysts and Cystlike Lesions Change the Histologic Diagnosis?

Purpose: The purpose of this study was to report the histopathologic findings after postdecompression definitive treatment of odontogenic cystlike lesions and determine whether the diagnosis was consistent with the pretreatment diagnosis, thereby answering the clinical question: does decompression change the histologic diagnosis?

Materials and Methods: The authors implemented a retrospective cohort study from a sample of patients diagnosed with a benign odontogenic cystlike lesion and who underwent decompression followed by definitive surgery as part of their treatment. The predictor variable was treatment by decompression and the dependent variable was change in histologic diagnosis. Age, gender, and lesion location were included as variables. The $X^2$ test was used for statistical analysis of the categorical data and $P$ values less than .05 were considered statistically significant.

Results: Twenty-five cysts and cystlike lesions in 25 patients were treated with decompression followed by enucleation and curettage. The mean age was 34 years (range, 13 to 80 yr) and 56% (14) were male patients. Lesions were located in the mandible in 76% (19 of 25) of patients. Postdecompression histologic examination at the time of definitive surgical treatment was consistent with the preoperative biopsy diagnosis in 91% (10 of 11) of keratocystic odontogenic tumors, 67% (2 of 3) of glandular odontogenic cysts, 75% (3 of 4) of dentigerous cysts, and 100% (7 of 7) of cystic ameloblastomas.

Conclusions: The histologic diagnosis at time of definitive treatment by enucleation and curettage is consistent with the predecompression diagnosis. Therefore, all lesions should be definitively treated after decompression based on the initial treatment protocol, with all patients placed on appropriate follow-up protocols.

Mandibular effects of maxillary distraction osteogenesis in cleft lip and palate
J.-C. Doucet, C. Herlin, M. Bigorre, C. Bäumler, G. Subsol, G. Capter

Maxillary distraction osteogenesis (DO) is a reliable treatment for severe maxillary deficiency in cleft lip and palate (CLP). The objective was to analyze its long-term effects on the mandible. A retrospective study of 24 CLP treated with maxillary DO using the Polley and Figueroa technique was done; patients were followed for more than 4 years. Preoperative (T0), 6–12 months postoperative (T1), and ≥4 years postoperative (T2) cephalometric radiographs were evaluated. A classical cephalometric analysis was used to assess treatment stability, and a Procrustes superimposition method was used to assess local changes in the shape of the mandible. The mean age of patients at T0 was 15.4±4.1 years. SNA increased at T1 and T2 ($P<0.001$), with no significant relapse between T1 and T2, indicating stability at 1 year after treatment (T0=72.4±5.3°; T1=81.3±6.2°; T2=79.9±6.1°). SNB, facial angle, gonial angle, and symphyseal angle remained stable. Long-term analysis of the mandible demonstrated a minimal counter-clockwise rotation of the body (mandibular planes=−0.2±3.2°) and ramus (−0.6±4.3°). Maxillary DO in CLP had no significant effect on the shape or rotation of the mandible. The maxillary advancement remained stable after 1 year.

Changes in the calibre of the upper airway and the surrounding structures after maxillomandibular advancement for obstructive sleep apnoea

Maxillomandibular advancement (MMA) is effective in the treatment of obstructive sleep apnoea. We aimed to assess changes in the calibre of the upper airway, facial skeleton, and surrounding structural position after MMA and their association with improvement in symptoms. Sixteen consecutive adults with moderate-to-severe apnoea were treated by primary MMA. Polysomnography and computed tomography (CT) of the head and neck were done before and at least 6 months after MMA. The calibre of the upper airway, the facial skeleton, and the surrounding structures were measured with image analysis software. After MMA, patients had a significant reduction in their apnoea-hypopnoea index (31.2 (18.8) number of events (n)/hour (h)). The mean (SD) volume of the airway increased significantly in the velopharynx ($p<0.01$), oropharynx ($p=0.001$), and hypopharynx ($p<0.001$) (by 2.3 (2.4), 2.1 (2.6), and 1.7 (1.1)cm³, respectively) and the length of the airway was significantly decreased (by 3.1 (3.5)mm $p<0.01$). The soft palate ($p<0.001$), tongue ($p<0.001$), and hyoid ($p=0.001$) moved significantly anteriorly (by 4.4 (2.0), 7.5 (2.8), and 5.7 (5.0)mm, respectively), and these movements were related to the MMA ($r=0.6$–0.8). The improvement in the apnoea-hypopnoea index was associated with both maxillary advancement and anterior movements of the soft palate and hyoid ($r=0.6$–0.7). The results of this study suggest that MMA increases the volume in the upper airway and reduces its length. Improvement in obstructive sleep apnoea is associated with the extent of the anterior movements of the maxilla, soft palate, and hyoid.

Subnasal modified Le Fort I osteotomy: Indications and results

Purpose: To study the possible morphologic changes in the nose after subnasal modified Le Fort I maxillary osteotomy to correct class III dentofacial deformities in patients with considered normal nasal morphology.
Material and methods: Fifteen patients (7 males, 8 females) requiring maxillary advancement to treat class III dentofacial deformities were studied prospectively between January 2004 and January 2011. All the patients had an adequate projection of the nasal tip preoperatively preventing a conventional Le Fort I osteotomy. Patients received preoperatively (T1), 6 months after surgery (T2), and 12 months after the initial surgical procedure (T3) lateral cephalograms, CT-3D studies and clinical nose analysis to measure different morphologic variables including: the alar/nose base width, nasal tip protrusion and nasal bridge length using a digital sliding caliper directly on the soft-tissue surface of the face.

Results: Mean age was 26.2 years, range 20–36 years. A significant advancement of the maxilla was noted postoperatively (mean 7.5 mm). After surgery the different anthropometric variables of the nasal region analysed had not suffered any significant variation. No significant differences were found when comparing T2 with T3 measures. No significant complications were found.

Conclusion: The results indicated that maxillary advancement using a subnasal modified Le Fort I osteotomy can prevent undesirable soft tissue changes of the nose when anterior repositioning of the maxilla is indicated in patients with preoperatively normal nasal morphology.

Complication Rate in 200 Consecutive Sinus Lift Procedures: Guidelines for Prevention and Treatment

Purpose: Maxillary sinus grafting is a predictable and reliable procedure that has been routinely performed for more than 30 years. The complication rate is low, but some cases may require additional surgery, and the outcome of oral rehabilitation may be affected. The purpose of the present study was to evaluate the early and late complications after sinus lift procedures performed in the authors’ center, with special attention to risk factors and their connection to the principles of prevention and treatment.

Materials and Methods: A retrospective analysis of 200 patients was performed. During an 8-year period, patients underwent preprosthetic surgery with implants and a maxillary sinus lift procedure because of maxillary atrophy. In total, 202 sinus lift procedures were performed and 364 implants were placed (117 simultaneously and 247 delayed). Clinical data, local or systemic disease, risk factors, type of surgery, intraoperative and postoperative complications, and the evolution of the implant zone were recorded.

Results: The most common intraoperative complication was damage to the Schneiderian membrane (25.7%), which did not show any connection to postoperative complications. Thirty patients (14.9%) developed postoperative complications, including wound infection, abscess, or dehiscence with drainage (9 cases), maxillary sinusitis of the operated area (6 cases), partial exposure of the simultaneous onlay graft (6 cases), and loss of the graft (2 cases).

Conclusion: Sinus lift surgery is a proven and reliable technique because of the low observed rate of postoperative complications and the success rate of implants placed into the grafted area. To minimize risk, care must be taken with all technical details and risk factors that can lead to fatality.

Review of the fracture toughness approach
Karl-Johan Soderholm

Dental adhesives are usually tested in shear or tension even though neither of these approaches measures the local stress triggering failure. Because the stress level varies extensively over the bonded surface, it seems as a fracture mechanics approach would be more appropriate.

In this review different general aspects of fracture mechanics and adhesive joints were reviewed first. That review served as a foundation for a review of fracture toughness studies performed on dental adhesives. The dental adhesive studies were identified through aMEDLINE search using “dental adhesion testing AND enamel OR dentin AND fracture toughness” as search strategy.

The outcome of the review revealed that fracture toughness studies performed on dental adhesives are complex, both regarding technical performance as well as achieving good discriminating ability between different adhesives. The review also suggested that most fracture toughness tests of adhesives performed in dentistry are not totally reliable because they usually did not consider the complex stress pattern at the adhesive interface. However, despite these limitations, the review strongly supports the notion that the proper way of studying dental adhesion is by use a fracture mechanics. At the present time, it seems as the fracture energy of adhesives might be more appropriate to determine than their fracture toughness values.

An overview of zirconia ceramics: Basic properties and clinical applications
Paolo Francesco Manicone, Pierfrancesco Rossi iommetti*, Luca Raffaelli

Abstract: Zirconia (ZrO2) is a ceramic material with adequate mechanical properties for manufacturing of medical devices. Zirconia stabilized with Y2O3 has the best properties for these applications. When a stress occurs on a ZrO2 surface, a crystalline modification opposes the propagation of cracks. Compression resistance of ZrO2 is about 2000 MPa. Orthopedic research led to this material being proposed for the manufacture of hip head prostheses. Prior to this, zirconia biocompatibility had been studied in vivo; no adverse responses were reported following the insertion of ZrO2 samples into bone or muscle. In vitro experimentation showed absence of mutations and good viability of cells cultured on this material. Zirconia cores for fixed partial dentures (FPD) on anterior and posterior teeth and on implants are now available. Clinical evaluation of abutments and periodontal tissue must be performed prior to their use. Zirconia opacity is very useful in adverse clinical situations, for example, for masking of dischromic abutment teeth. Radiopacity can aid evaluation
during radiographic controls. Zirconia frameworks are realized by using computer-aided design/manufacturing (CAD/CAM) technology. Cementation of Zr-ceramic restorations can be performed with adhesive luting. Mechanical properties of zirconium oxide FPDs have proved superior to those of other metal-free restorations. Clinical evaluations, which have been ongoing for 3 years, indicate a good success rate for zirconia FPDs. Zirconia implant abutments can also be used to improve the aesthetic outcome of implant-supported rehabilitations. Newly proposed zirconia implants seem to have good biological and mechanical properties; further studies are needed to validate their application.

Current ceramic materials and systems with clinical recommendations: A systematic review
J Prosthet Dent 2007;98:389-404

Statement of problem: Developments in ceramic core materials such as lithium disilicate, aluminum oxide, and zirconium oxide have allowed more widespread application of all-ceramic restorations over the past 10 years. With a plethora of ceramic materials and systems currently available for use, an overview of the scientific literature on the efficacy of this treatment therapy is indicated.

Purpose: This article reviews the current literature covering all-ceramic materials and systems, with respect to survival, material properties, marginal and internal fit, cementation and bonding, and color and esthetics, and provides clinical recommendations for their use.

Material and methods: A comprehensive review of the literature was completed seeking evidence for the treatment of teeth with all-ceramic restorations. A search of English language peer-reviewed literature was undertaken using MEDLINE and PubMed with a focus on evidence-based research articles published between 1996 and 2006. A hand search of relevant dental journals was also completed. Randomized controlled trials, nonrandomized controlled studies, longitudinal experimental clinical studies, longitudinal prospective studies, and longitudinal retrospective studies were reviewed. The last search was conducted on June 12, 2007. Data supporting the clinical application of all-ceramic materials and systems was sought.

Results: The literature demonstrates that multiple all-ceramic materials and systems are currently available for clinical use, and there is not a single universal material or system for all clinical situations. The successful application is dependent upon the clinician to match the materials, manufacturing techniques, and cementation or bonding procedures, with the individual clinical situation.

Conclusions: Within the scope of this systematic review, there is no evidence to support the universal application of a single ceramic material and system for all clinical situations. Additional longitudinal clinical studies are required to advance the development of ceramic materials and systems.

Reasons for Marginal Bone Loss around Oral Implants
Jie Qian, Ann Wennerberg, Tomas Albrektsson

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Background: The reasons for long-term marginal bone loss around oral implants are not well understood.

Purpose: The aim of this paper is to analyze presented evidence behind anticipated reasons for long-term marginal bone loss around oral implants.

Materials and Methods: A computerized research was conducted on PubMed in April 2011 with the following keywords: oral implants and marginal bone resorption/crestal bone loss/bone loss/bone resorption. This search resulted in a total of one thousand one hundred ninety-four papers of which seven hundred fifty-three were clinical contributions. Further search and filtering finally resulted in 21 experimental studies and one hundred sixteen clinical studies, which were reviewed.

Results: No evidence was found that primary infection caused marginal bone resorption. Clinical papers that have reported high levels of peri-implantitis were not supported by data given. Clinical evidence was presented that the so-called combined factors (implant hardware, clinical handling, and patient characteristics) may lead to marginal bone resorption. However, once tissue damage has been caused by combined factors, inflammation and/or infection may develop secondarily and then result in peri-implantitis that may need particular clinical treatment.

Conclusions: As marginal bone loss primarily depends on numerous background factors, it seems logical that, for example, the use of poorly constructed implants placed and handled by untrained clinicians may result in high numbers of patients with secondary problems in form of peri-implantitis; having said this, control of combined factors may likewise lead to very good clinical results where peri-implantitis would represent a very rare disease indeed even at follow-up times of 10 years or more.

Clinical and esthetic outcome of implants placed in postextraction sites
Stephen T. Chen, Daniel Buser

Purpose: The aim of this review was to evaluate the clinical outcomes for the different time points of implant placement following tooth extraction.

Materials and methods: A PubMed search and a hand search of selected journals were performed to identify clinical studies published in English that reported on outcomes of implants in postextraction sites. Only studies that included 10 or more patients were accepted. For implant success/survival outcomes, only studies with a mean follow-up period of at least twelve months from the time of implant placement were included. The following outcomes were identified: (1) change in peri-implant defect dimension, (2) implant survival and success, and (3) esthetic outcomes

Results and conclusions: Of 1,107 abstracts and 170 full-text articles considered, 91 studies met the inclusion criteria of this review. Bone augmentation procedures are effective in promoting bone fill and defect resolution at implants in postextraction sites, and are more successful with immediate
(type 1) and early placement (type 2 and type 3) than with late placement (type 4). The majority of studies reported survival rates of over 95%. Similar survival rates were observed for immediate (type 1) and early (type 2) placement. Recess of the facial mucosal margin is common with immediate (type 1) placement. Risk indicator included a thin tissue biotype, a facial malposition of the implant, and a thin or damaged facial bone wall. Early implant placement (type 2 and type 3) is associated with a lower frequency of mucosal recession compared to immediate placement (type 1).

Mode of delivery and other maternal factors influence the acquisition of Streptococcus mutans in infants.

Li Y1, Caufield PW, Dasanayake AP, Wiener HW, Vermund SH. J Dent Res. 2005 Sep;84(9):806-11.

S. mutans plays a key role in dental caries. The extent to which perinatal events influence the acquisition of S. mutans is unclear. We hypothesized that several maternal factors, including the mode of delivery, influence the initial acquisition of S. mutans in infants. A prospective cohort study was conducted in 156 mother-infant pairs. The study found that maternal gestational age (p = 0.04), S. mutans level (p = 0.02), caries score (p = 0.02), sexually transmitted disease (STD) infection experience (p = 0.01), and family income (p = 0.03) had significant effects on the acquisition of S. mutans. Among infants who became infected, those delivered by Caesarean section acquired S. mutans 11.7 mos earlier than did vaginally delivered infants (p = 0.038). C-section infants harbored a single genotype of S. mutans that was identical to that of their mothers (100% fidelity). Analysis of the data demonstrated the possible perinatal influences on infants’ acquisition of a member of the cariogenic microbiota, and its potential effect on caries outcome.

Factors related to maternal transmission of mutans streptococci in high-risk children-pilot study.


Purpose: The purpose of this study was to investigate virulence factors associated with maternal transmission of mutans streptococci (MS).

Methods: Saliva samples were collected from 10 mothers with active caries and their 2- to 5-year-old children. Ten MS colonies were isolated from each subject. Transmission of MS was identified by arbitrarily primed polymerase chain reactions. Biofilm formation and mutacin production of the isolates against Streptococcus gordonii 10558, Streptococcus sanguinis 10557, Streptococcus mutans 25175, and Streptococcus sobrinus 6715 were analyzed.

Results: All mothers and children had MS colonization. Only 7 of the 36 maternal genotypes (33 Streptococcus mutans genotypes and 3 Streptococcus sobrinus genotypes) were transmitted. Maternal transmission was found in 4 mother-child pairs, whereas 9 children had nonmaternal genotypes. There was no difference in biofilm formation between transmitted and nontransmitted genotypes (P>.05). Transmitted genotypes, however, produced more mutacin against Streptococcus sobrinus 6715 than nontransmitted genotypes.

Conclusions: This pilot study showed that there may be nonmaternal as well as maternal mutants streptococci transmission.

Twenty-four-month clinical evaluation of fissure sealants on partially erupted permanent first molars: glass ionomer versus resin-based sealant.


Background: Glass ionomer sealants are an alternative to resin-based sealants, especially for use in partially erupted permanent molars. The authors conducted a study to compare the retention, marginal staining and cariostatic properties of a glass ionomer sealant with those of a resin-based sealant during a 24-month period.

Methods: We included in this study 39 patients aged 5 through 9 years who had bilateral partially erupted first permanent molars. One of us (S.B.) placed a resin-based sealant (Delton Plus FS+, Dentsply Professional, York, Pa.) (group D) on a partially erupted first molar in one quadrant of the maxilla or mandible and a glass ionomer sealant (GC Fuji Triage White, GC America, Alsip, Ill.) (group T) in the other quadrant. Two masked and calibrated investigators (S.A.A., J.C.) evaluated the sealants for retention, marginal staining and carious lesions at three, six, 12 and 24 months. The authors used a multinomial regression for statistical analysis (P < .05).

Results: The recall rate was 69.2 percent at 24 months. Two sealants from group D and three from group T were lost completely. Complete retention rates at 24 months were 40.7 and 44.4 percent for groups D and T, respectively. The authors found no statistically significant difference in retention rates between groups at each recall examination (P > .05). For marginal staining, sealants in the resin-based group exhibited statistically higher marginal staining than did sealants in the glass ionomer group (P < .05). Although the authors detected no caries in teeth in group T, teeth in group D in which the sealant was lost completely experienced demineralization.

Conclusions: Resin-based and glass ionomer sealants exhibited similar retention rates at 24 months. However, marginal staining was lower in the glass ionomer group, and the authors found no caries in teeth in this group. Consequently, glass ionomer sealants may be a better choice when salivary contamination is expected.

Clinical Implications: Sealing during tooth eruption presents a particular challenge owing to difficulty in isolating the tooth. Glass ionomers may be a better material for sealing partially erupted molars.

Impact of periodontal disease and periodontal therapy on oral health-related quality of life.


Objective: To determine the impact of periodontal disease and periodontal therapy on oral health-related quality of life using
the German version of the Oral Health Impact Profile, taking into account the possible effects of age, gender and socioeconomic factors.

**Methods:** This is a study of 93 patients of both sexes aged 27-74 years. The sample included 82 patients with a diagnosis of periodontal diseases, 11 patients without periodontitis (control group). All patients used the German 14-item version of the Oral Health Impact Profile, as well as a socioeconomic and demographic questionnaire. This was used to assess oral health-related quality of life issues. The questionnaire and clinical inspection were done before and 6-8 weeks after the periodontal treatment.

**Results:** Periodontal diseases have an effect on oral health-related quality of life issues. Scores for the German 14-item version of the Oral Health Impact Profile were associated with severity of periodontal diseases, sex, age, oral hygiene and smoking habits. The highest scores included those patients with a probing pocket depth of > 7 mm. The median score of these patients was reduced from 14.4 at baseline to 5.5 after treatment (P = 0.007). These patients perceived physical, social and psychological changes in oral health-related quality of life after periodontal therapy. Median OHIP-G-14 scores were reduced from 6.3 at baseline to 4.8 6-8 weeks after treatment (P < 0.001). The number of teeth with a probing pocket depth > 3 mm could be reduced from 76.0% at baseline to 27.6% after treatment.

**Conclusion:** The association between periodontal diseases and the oral health-related quality of life was determined. The positive effect of the periodontal treatment on the oral health related quality of life was also shown and was most pronounced for patients with a probing pocket depth of > 7 mm.

**Vertical transmission of mutans streptococci and lactobacillus in Thai families.**

**Purpose:** The purpose of this study was to investigate the vertical transmission of mutans streptococci (MS) and lactobacilli in a group of Thai families.

**Methods:** One hundred eighty-one mother-child pairs were included in this study. Unstimulated saliva was collected using the spatula method and counted for evaluating the number of MS and lactobacilli on a selective medium. Genotyping of MS and Lactobacillus species were performed in 37 and 22 child-mother pairs, respectively. Typically, 3 to 4 isolates of MS and/or Lactobacillus strains from each mother and child were collected for genotyping by an arbitrarily primed polymerase chain reaction (OPA-02 primer for MS and enterobacterial repetitive intergenic consensus primers for Lactobacillus species).

**Results:** Generally, MS and lactobacilli levels in children were associated with their mothers’ levels. Genotyping of most isolates of MS and Lactobacillus strains in both mothers and children found diversity, and each individual showed a distinct genotypic pattern. The presence of matching genotypes of MS and Lactobacillus strains of mother-child was approximately 76% and 50%, respectively. The genotypes acquired from the maternal route show effective persistence in the children’s oral cavities.

**Conclusions:** In Thai families, mothers can be the source for transmission of mutans streptococci and Lactobacillus strains to their children.

**Dental implants in patients with oral lichen planus: a cross-sectional study.**

**Purpose:** The main aim of this study was to evaluate the patients with oral lichen planus (OLP) and dental implants.

**Material and Methods:** Three groups of 16 patients took part in the study. Group I patients had received dental implants and been diagnosed with OLP; Group II had not received implants but were diagnosed with OLP; Group III had implants but not OLP. Clinical observations and OLP symptoms were registered in each case. Periodontal pocket depth, implant mobility, bleeding upon probing, erythema, pain, and radiolucency around implants were measured. Patient quality of life was evaluated using OHIP 14.

**Results:** Peri-implant mucositis and peri-implantitis were detected in 17.86% and 25% of the OLP-implant group, while the control group with implants showed 18% and 16%. The implant survival rate in patients treated for OLP did not appear to differ from the survival rate among the general population. Quality of life was better among patients with implants and without OLP (p = .001).

**Conclusion:** The results of the present study suggest that implants do not influence manifestations of OLP. OLP is not a risk factor for peri-implantitis.


**Aim:** To compare immediate surgery to scaling and root planing (SRP) in the treatment of advanced periodontal disease focusing on the prevalence of residual sites and cost-effectiveness (1); to evaluate the adjunctive effects of azithromycin in a second treatment phase (2).

**Materials and Methods:** Thirty-nine patients (18 males, 21 females; mean age: 54.6) received oral hygiene instructions and were randomly allocated to surgery (n = 19) or SRP (n = 20). Patients with residual pockets (≥6 mm) at 6 months received re-debridement of these sites and systemic azithromycin. Treatment groups were followed up to 12 months and evaluated in terms of clinical response parameters and cost-effectiveness. Chair-time was used to assess the financial impact of treatment.

**Results:** Both treatment arms were equally effective in terms of clinical outcome demonstrating less than 1% residual pockets at 12 months. Surgery imposed an extra 746 Euro on the patient up to 6 months when compared to SRP. At 12 months, 46 Euro of this amount could be offset as a result of a reduced
need for supportive care. Only 6 patients in the surgery group needed systemic antibiotics, whereas 14 patients in the SRP needed such additional treatment.

Conclusions: Although 700 Euro could be saved on average by performing SRP instead of surgery, the latter significantly reduced the need for supportive care and systemic antibiotics.

Extraction socket healing in humans after ridge preservation techniques: comparison between flapless and flapped procedures in a randomized clinical trial.

Background: The preservation of hard and soft tissue volume, partially lost after tooth removal, can potentially reduce the need for the more demanding augmentation procedures used in implant-supported rehabilitation. The objective of this research study is to investigate the effect of filling with xenogeneic material the postextractive sockets of two surgical procedures (flapless versus flapped).

Methods: In this prospective randomized clinical survey, two types of socket preservation were performed on two groups of patients: the control, treated via full-thickness mucoperiosteal flap, and the test, via a flapless procedure. Anatomic measurements and related outcome variables at the third month were analyzed using multway analysis of variance. Multiple comparison tests, using Tukey honestly significant difference test, and appropriate pairwise comparison tests for independent samples were carried out.

Results: Sixty-four patients were treated, 32 for each of the two socket preservation procedures. Statistically significant differences were registered for the output variables — changes in width of keratinized gingiva, changes in bucco-lingual width, and vertical bone changes at four sites — between the two socket preservation techniques, with P values of <0.001, <0.001, and 0.0105, respectively.

Conclusions: A full-thickness mucoperiosteal flap gave significantly more negative results than that of the less-demanding flapless procedure, with an increased width resorption of the postextraction site. Moreover, the increased value of the keratinized gingival width attested to the positive outcome of a flapless procedure in terms of soft tissue preservation and improvement. On the other hand, the flapped technique seemed to show less vertical bone resorption on the buccal aspect than the flapless technique.

Antibiotic resistance in human peri-implantitis microbiota.

Objectives: To histologically assess the effectiveness of a porcine-derived collagen matrix (CM) and a subepithelial connective tissue graft (CTG) for the coverage of single mucosal recessions at osseointegrated dental implants.

Materials and methods: Chronic-type mucosal Miller Class I-like recessions (mean clinical defect height: 0.67 ± 0.33–1.16 ± 0.19 mm) were established at the buccal aspect of titanium implants with platform switch in six beagle dogs. The defects were randomly allocated to either (1) coronally advanced flap surgery (CAF) + CM, (2) CAF + CTG or (3) CAF alone. At 12 weeks, histomorphometrical measurements were made (e.g.) between the implant shoulder (IS) and the mucosal margin (PM) and IS and the outer contour of the adjacent soft tissue (mucosal thickness [MT]).

Results: All treatment procedures investigated were associated with an almost complete soft tissue coverage of the defect area (i.e. coronal positioning of PM relative to IS). Mean IS-PM and MT values tended to be increased in both CAF + CM (1.04 ± 0.74 mm/0.71 ± 0.55 mm) and CAF + CTG (0.88 ± 1.23 mm/0.62 ± 0.66 mm) groups when compared with CAF (0.16 ± 0.28 mm/0.34 ± 0.23 mm) alone. These differences, however, did not reach statistical significance.

Conclusions: Within the limits of this pilot study, it was concluded that all treatment procedures investigated were effective in covering soft tissue recessions at titanium implants.
Counselling and self-management therapies for temporomandibular disorders: a systematic review.

de Freitas RF, Ferreira MA, Barbosa GA, Calderon PS


The aim of this review was to investigate the effectiveness of counselling and other self-management-based therapies on muscle and temporomandibular joint (TMJ) pain relief and increasing the functional abilities of patients with temporomandibular disorders (TMD). A systematic literature review was conducted by three independent reviewers and included articles published up to 2012. PubMed and Cochrane Library electronic databases were used in addition to hand-searching to assess clinical outcomes for counselling and self-management approaches for TMD treatment. The review yielded 581 records that were narrowed down to 7. All included articles were classified as blind-randomized controlled clinical trials. The selected articles analyzed revealed that counselling was able to improve tenderness upon masticatory muscle palpation and maximum mouth opening with and without pain in patients with TMD, with similar results to those of interocclusal appliances approaches. Thus, counselling- and self-management-based therapies could be considered a conservative low-cost and beneficial treatment alternative for treating TMD to potentially improve psychological domains and remove harmful behaviours for the control of the signs and symptoms of TMD.

Relationship between self-reported sleep bruxism and pain in patients with temporomandibular disorders.


The aim of this study was to evaluate the association between self-reported sleep bruxism and the age, gender, clinical subtypes of temporomandibular disorders (TMD), pain intensity and grade of chronic pain in patients previously diagnosed with TMD. Thousand two-hundred and twenty patients of the Andalusian Health Service were examined using the Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD) questionnaire. The inclusion and exclusion criteria were those included in the RDC/TMD criteria. The bruxism diagnosis was drawn from the question, ‘Have you been told, or do you notice that you grind your teeth or clench your jaw while sleeping at night?’ in the anamnestic portion of the questionnaire. A bivariate analysis was conducted, comparing the presence of perceived parafunctional activity with age (over age 60 and under age 60), gender, different subtypes of TMD, pain intensity, grade of chronic pain and presence of self-perceived locked joints. The overall prevalence of self-reported sleep bruxism (SB) was 54.51%. A statistically significant association was found between the presence of SB and patients under age 60, women, greater pain intensity, greater pain interference with activities of daily living, and the axis-I groups affected by both muscular and articular pathology. There is a statistically significant association between self-reported sleep bruxism and women under age 60 who have painful symptoms of TMD. There is also a positive association between this parafunctional habit and the presence of chronic pain. However, more studies that cover larger samples and differentiate between sleep bruxism and awake bruxism are needed.

NGF-induced mechanical sensitization of the masseter muscle is mediated through peripheral NMDA receptors.


Neuroscience 2014;269C:232-44.

Intramuscular injection of nerve growth factor (NGF) in healthy humans mimics some of the symptoms of myofascial temporomandibular disorders (M-TMD). We hypothesized that NGF induces a prolonged myofascial mechanical sensitization by increasing peripheral N-methyl-D-aspartate (NMDA) receptor expression, leading to an enhanced response of muscle nociceptors to endogenous glutamate. Behavioral experiments with an injection of NGF (25mg/mg, 10mul) into the masseter muscle reduced the mechanical withdrawal threshold for 1day in male rats and 3days in female rats. These results mirror the sex-related differences found in NGF-induced mechanical sensitization in humans. Intramuscular injection with the competitive NMDA receptor antagonist dl-2-amino-5-phosphonovaleric acid (APV, 0.020g/ml, 10mul) reversed the mechanical sensitization in male but not in female rats. NGF increased the number of NMDA receptor subtype 2B (NR2B)-expressing rat trigeminal masseter ganglion neurons in both sexes, which peaked at 3days post injection. There was an association between the levels of NR2B expression and NGF-induced mechanical sensitization. The average soma size of NR2B-expressing neurons increased significantly. Increased expression of neuropeptides (CGRP and SP) was observed in NR 2B-expressing masseter ganglion neurons in female but not in male rats. In healthy men and women, comparable basal expression levels of NR2B and SP were found in peripheral fibers from masseter muscle biopsies. This study suggests that NGF-induced sensitization of masseter nociceptors is mediated, in part, by enhanced peripheral NMDA receptor expression. Measurement of peripheral NMDA receptor expression may be useful as a biomarker for M-TMD pain.

Peri-operative dexamethasone therapy and post-operative psychosis in patients undergoing major oral and maxillofacial surgery.

Koteswara CM, Patnaik P.


A broad array of behavioral symptoms, including psychosis, can transpire post-operatively following a variety of surgeries. It is difficult to diagnose the exact cause of post-operative psychosis. We report three cases, which developed psychosis post-operatively after undergoing major oral and maxillofacial surgeries. All the three patients were administered dexamethasone peri-operatively. Dexamethasone is used to prevent or reduce post-operative edema. The exact dose of dexamethasone, which can cause psychosis, is unknown. It is important to raise awareness about this potential complication so that measures for management can be put in place in anticipation of such an event.
The incidence and prevalence of temporomandibular disorders and posterior open bite in patients receiving mandibular advancement device therapy for obstructive sleep apnea.


Purpose: This study aims to evaluate the incidence and prevalence of temporomandibular disorders (TMD) in patients receiving a mandibular advancement device (MAD) to treat obstructive sleep apnea using the Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD). In addition, it also aims to assess the development of posterior open bite (POB).

Materials and Methods: Data from 167 patients were evaluated at baseline, from 159 patients after 118 days (visit II), from 129 patients after 208 days (visit III), and from 85 patients after 413 days (visit IV). The presence of TMD symptoms was evaluated through a questionnaire. TMD signs were assessed using the RDC/TMD. Clinical evaluation assessed for the presence of POB.

Results: The prevalence of TMD was 33/167 (19.8 %) at baseline. After an initial decrease to 14.5 % on visit II, the prevalence increased to 19.4 % on visit III and finally demonstrated a decrease to 8.2 % on visit IV. The incidence of TMD was 10.6 % on visit II. This decreased on further visits and only two (1.9 %) patients developed TMD from visit III to visit IV. POB was found to develop with an average incidence of 6.1 % per visit. The prevalence of POB was 5.8 % on visit II, 9.4 % on visit III, and 17.9 % on visit IV.

Conclusion: The use of MADs may lead to the development of TMD in a small number of patients. Nevertheless, these signs are most likely transient. Patients with pre-existing signs and symptoms of TMD do not experience significant exacerbation of those signs and symptoms with MAD use. Furthermore, these may actually decrease over time. POB was found to develop in 17.9 % of patients; however, only 28.6 % of these patients were aware of any bite changes.