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Restorative Dentistry

Evidence Update

February 2018 (Bimonthly)

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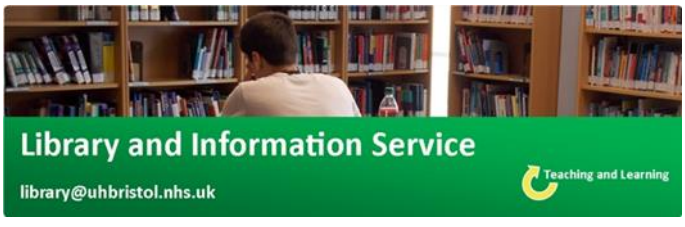

Training Sessions 2018

All sessions are one hour

February (12.00-13.00)	
1st (Thu)	Literature Searching
9th (Fri)	Critical Appraisal
12th (Mon)	Statistics
20th (Tue)	Literature Searching
28th (Wed)	Critical Appraisal
March (13.00-14.00)	
8th (Thu)	Statistics
12th (Mon)	Literature Searching
20th (Tue)	Critical Appraisal
28th (wed)	Statistics

Your Outreach Librarian – Jo Hooper

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Contents

The Latest Evidence for Restorative Dentistry

NICE National Institute for Health and Care Excellence

Lip and Oral Cavity Cancer Treatment (Adult) (PDQ®)–Health Professional Version Source: National Cancer Institute, USA - 08 February 2018

Oral bacterial infections | Treatment summary Source: British National Formulary - BNF - 11 January 2018

Nasopharyngeal Cancer Treatment (Adult) (PDQ®)–Health Professional Version Source: National Cancer Institute, USA - 07 February 2018

Laryngeal Cancer Treatment (Adult) (PDQ®)–Health Professional Version Source: National Cancer Institute, USA - 08 February 2018

Lip and Oral Cavity Cancer Treatment (Adult) (PDQ®)–Health Professional Version Source: National Cancer Institute, USA - 08 February 2018

Estimating the Importance of Significant Risk Factors for Early Dental Implant Failure: A Monte Carlo Simulation Source: PubMed - 01 January 2018 - Publisher: The International Journal Of Oral & Maxillofacial Implants Read Summary

Influence of subcrestal implant placement compared with equicrestal position on the peri-implant hard and soft tissues around platform-switched implants: a systematic review and meta-analysis Source: PubMed - 08 January 2018 - Publisher: Clinical Oral Investigations Read Summary

DENOSUMAB | Drug Source: British National Formulary - BNF - 11 January 2018

Effect of Submerged vs Nonsubmerged Implant Placement Protocols on Implant Failure and Marginal Bone Loss: A Systematic Review and Meta-Analysis Source: PubMed - 01 January 2018 - Publisher: The International Journal Of Prosthodontics

Cochrane Library

Supportive periodontal therapy (SPT) for maintaining the dentition in adults treated for periodontitis
Online Publication Date: January 2018

UpToDate®

OpenAthens login required. Register here: https://openathens.nice.org.uk/

Medication-related osteonecrosis of the jaw in patients with cancer
Literature review current through: Jan 2018. | **This topic last updated:** Feb 15, 2018.

Gingivitis and periodontitis in adults: Classification and dental treatment
Literature review current through: Jan 2018. | **This topic last updated:** Feb 16, 2018.

Medication-related osteonecrosis of the jaw in patients with cancer
Literature review current through: Jan 2018. | **This topic last updated:** Feb 15, 2018.

Risks of bisphosphonate therapy in patients with osteoporosis
Literature review current through: Jan 2018. | **This topic last updated:** Dec 13, 2017.

The Dental Elf

Orthognathic surgery: limited evidence on antibiotic prophylaxis?
Feb 19 2018

Non-surgical periodontal therapy – which antibiotic regime?
Feb 12 2018
different doses or duration of amoxicillin-plus-metronidazole at 3 months post-treatment

Phytotherapy as an adjunct to nonsurgical periodontal treatment?
Feb 7 2018

Departmental News

News, Research, Conferences, Training etc

Please contact us with any departmental news you wish to share here with your colleagues in your Evidence Update bulletin.

library@uhbristol.nhs.uk

Dorri M, Martinez-Zapata MJ, Walsh T, Marinho VCC, Sheiham (deceased) A, Zaror C.

Atraumatic restorative treatment versus conventional restorative treatment for managing dental caries.

Cochrane Database of Systematic Reviews 2017, Issue 12

Link to paper: http://www.cochrane.org/CD008072/ORAL_atraumatic-restorative-treatment-hand-instruments-only-compared-conventional-treatment-managing

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Recent Database Articles on Restorative Dentistry

Below is a selection of articles on restorative dentistry recently added to the healthcare databases, grouped in the following categories:

- **Peri-implantitis**
- **Bisphosphonate-related osteonecrosis of the jaw**
- **Dental-related cleft lip and palate**
- **Periodontal disease and antibiotics**
- **Dental-related head and neck oncology**
- **Dental implants**

If you would like any of the following articles in full text, or if you would like a more focused search on your own topic, then get in touch: library@uhbristol.nhs.uk

Peri-implantitis

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

Author(s): Renvert, Stefan; Lindahl, Christel; Persson, Gösta Rutger

Source: Journal of Clinical Periodontology; Feb 2018; vol. 45 (no. 2); p. 233-240

Publication Type(s): Academic Journal

Abstract: Abstract: Aim: To determine the prevalence and development of peri-implant mucositis and peri-implantitis and to assess risk factors over time. Materials and Methods: The study is a longitudinal case series assessing the occurrence and diagnosis of peri-implant mucositis and peri-implantitis. Results: A total of 218 of 294 patients who had received dental implants between 1988 and 1992 were examined between 2000 and 2002 (examination II; 9–14 years after the first examination). At examination III (20–26 years after examination I, on average 23.3 years), 86 individuals were re-examined. The diagnosis of peri-implant mucositis and peri-implantitis 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 (Pp = 0.40), a diagnosis of peri-implant mucositis (p = .77) or smoking (p = .86) at examination II were not predictive of peri-implantitis at examination III. Conclusions: 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.

Differences between inflammatory and catabolic mediators of peri-implantitis and periodontitis lesions following initial mechanical therapy: An exploratory study.

Author(s): Ghighi, M.; Llorens, A.; Baroukh, B.; Chaussain, C.; Bouchard, P.; Gosset, M.

Source: Journal of Periodontal Research; Feb 2018; vol. 53 (no. 1); p. 29-39

Publication Type(s): Academic Journal

Abstract: Background and Objective The aim of this study was to analyze the differences in inflammatory and catabolic mediators expressed in peri-implantitis compared to periodontitis lesions after non-surgical therapy. Peri-implantitis is associated with a faster rate of bone loss when compared with periodontitis, and peri-implant non-surgical therapy is ineffective to cure peri-implantitis. This may be due to persistent inflammation in peri-implantitis tissues after initial mechanical treatment. Material and Methods Eleven patients with peri-implantitis and 10 with severe chronic periodontitis received non-surgical therapy. They were included at re-evaluation (8 weeks) if they presented pocket depth ≥6 mm with bleeding on probing, and the indication for open flap debridement surgery. Connective tissues were harvested during surgery from diseased sites. Healthy gingiva were harvested during third molar extraction in a third group of healthy patients (n=10). Explants were incubated for 24 hours in media culture and the release of cytokines, chemokines, growth factors, osteoprotegerin, receptor activator of nuclear factor kappa-B ligand (RANKL), matrix metalloproteinase and tissue inhibitors of matrix metalloproteinase (TIMP) in the conditioned media was analyzed by an exploratory multiplex immunoassay. When difference was found in the conditioned media, an immunohistochemistry was performed to compare expression in the tissues. Results Connective tissues from non-stabilized peri-implantitis exhibited a distinct cytokine profile compared to periodontitis lesions that did not respond to initial therapy. Indeed, TIMP-2 was significantly increased in media from peri-implantitis (P≤.05). In addition, the in situ expression of TIMP-2, interleukin-10 and RANKL was also significantly increased in peri-implantitis tissues (P≤.05). However, the ratio of RANKL/ osteoprotegerin-positive cells did not vary (P≥.05). Conclusion This study suggests that peri-implantitis and periodontitis connective tissues exhibit differences in response to non-surgical treatment, which may contribute to a different pattern of disease evolution.

Role of toll-like receptor 2 in inflammation and alveolar bone loss in experimental peri-implantitis versus periodontitis.

Author(s): Yu, X.; Hu, Y.; Freire, M.; Yu, P.; Kawai, T.; Han, X.

Source: Journal of Periodontal Research; Feb 2018; vol. 53 (no. 1); p. 98-106

Publication Type(s): Academic Journal

Abstract: Background and Objective Peri-implantitis and periodontitis are different entities in immune characteristics even though they share similar features in clinical and radiologic signs. Toll-like receptor 2 (TLR-2), one of the key pathogen-recognition receptors in the innate immune system, plays an important role in the progression of periodontitis. However, the role of TLR-2 in peri-implantitis remains unclear. The objective of this study was to investigate the role of TLR-2 in inflammation and alveolar bone loss in a murine model of ligature-induced peri-implantitis and to compare it with ligature-induced periodontitis. Material and Methods Smooth-surface titanium implants were placed in the alveolar bone of the left maxillary molars of wild-type (WT) and Tlr2 knockout (Tlr2-KO) mice 6 weeks after tooth extraction. Silk ligatures were applied to the left implant fixtures and the right maxillary second molars to induce peri-implantitis and periodontitis 4 weeks after implant placement. Two weeks after ligation, bone loss around the implants and maxillary second molars was analysed by micro-computed tomography (micro-CT), and

inflammation around the implants and maxillary second molars was assessed at the same time point using histology and TRAP staining, respectively. Expression of mRNA for proinflammatory cytokines (interleukin-1β [Il1β], tumor necrosis factor-α [Tnfα]), an anti-inflammatory cytokine (interleukin-10 [Il10]) and osteoclastogenesis-related cytokines (Rankl, osteoprotegerin [Opg]) were evaluated, in gingival tissue, using real-time quantitative PCR (RT-qPCR). Results The success rate of implant osseointegration was significantly higher in Tlr2- KO mice (85.71%) compared with WT mice (53.66%) (P = .0125). Micro- CT revealed significantly decreased bone loss in Tlr2- KO mice compared with WT mice (P = .0094) in peri-implantitis. The levels of m RNA for Il1β (P = .0055), Tnfα (P = .01) and Il10 (P = .0019) in gingiva were significantly elevated in the peri-implantitis tissues of WT mice, but not in Tlr2- KO mice, compared with controls. However, the gingival m RNA ratios of Rankl/ Opg in peri-implant tissues were significantly upregulated in both WT (P = .0488) and Tlr2-KO (P = .0314) mice. Ligature-induced periodontitis exhibited similar patterns of bone loss and inflammatory cytokine profile in both groups of mice, except that the level of Il10 was elevated (P = .0114) whereas the Rankl/Opg ratio was not elevated (P = .9755) in Tlr2- KO mice compared with control mice. Histological findings showed increased numbers of TRAP-positive cells and infiltrated inflammatory cells in ligature-induced peri-implantitis in both WT (P < .01) and Tlr2- KO mice (P < .05), and the numbers of both types of cell were significantly higher in WT mice than in Tlr2- KO mice (P < .01). Conclusion This study suggests that TLR-2 mediates bone loss in both peri-implantitis and periodontitis. However, different molecular features may exist in the pathogenesis of the two diseases.

Treatment of pathologic peri-implant pockets.

Author(s): Renvert, Stefan; Polyzois, Ioannis

Source: Periodontology 2000; Feb 2018; vol. 76 (no. 1); p. 180-190

Publication Type(s): Journal Article Review

Abstract: Peri-implant and periodontal pockets share a number of anatomical features but also have distinct differences. These differences make peri-implant pockets more susceptible to trauma and infection than periodontal pockets. Inadequate maintenance can lead to infections (defined as peri-implant mucositis and peri-implantitis) within peri-implant pockets. These infections are recognized as inflammatory diseases, which ultimately lead to the loss of supporting bone. Diagnostic and treatment methods conventionally used in periodontics have been adopted to assess and treat these diseases. Controlling infection includes elimination of the biofilm from the implant surface and efficient mechanical debridement. However, the prosthetic supra-structure and implant surface characteristics can complicate treatment. Evidence shows that when appropriately managed, peri-implant mucositis is reversible. Nonsurgical therapy, with or without the use of antimicrobials, will occasionally resolve peri-implantitis, but for the majority of advanced lesions this approach is insufficient and surgery is indicated. The major objective of the surgical approach is to provide access and visualize the clinical situation. Hence, a more informed decision can be made regarding whether to use a resective or a regenerative surgical technique. Evidence shows that following successful decontamination, surgical treatment to regenerate the bone can be performed, and a number of regenerative techniques have been proposed. After

treatment, regular maintenance and good oral hygiene are essential for a predictable outcome and long-term stability.

Is History of Periodontitis a Risk Factor for Peri-implant Disease? A Pilot Study.

Author(s): Altay, Mehmet Ali; Tozoğlu, Sinan; Yıldırımyan, Nelli; Ozarslan, Mehmet Mustafa

Source: International Journal of Oral & Maxillofacial Implants; Jan 2018; vol. 33 (no. 1); p. 152-160

Publication Type(s): Academic Journal

Abstract: Purpose: The aim of this pilot study was to evaluate clinical outcomes of implant treatment in periodontally compromised patients. Materials and Methods: Partially edentulous patients who were diagnosed and treated for chronic periodontitis and later rehabilitated with implant-supported single crowns or fixed partial dentures were enrolled in this study. At the final follow-up, data on probing pocket depth and bleeding on probing were collected, and changes in peri-implant bone levels were assessed on periapical radiographs. Accordingly, patients were categorized into peri-implant disease--free (PID-free), peri-implant mucositis (PIM), or peri-implantitis (PI) groups. Additionally, information on the history of systemic diseases was obtained and correlated with the findings. Results: Seven females and six males with a mean age of 55.2 (standard deviation [SD] ± 8.38) years were included in this study. Fifty-five implants were placed in 13 partially edentulous patients with a history of chronic periodontitis. The mean follow-up in the study was 35.1 (SD ± 2.40) months. No implants were lost in the 13 patients, for a cumulative survival of 100%. PI was confirmed in 3 patients and PIM in 8 patients, while 2 patients were found to be PID-free. Diabetes and hypertension were found to be the predominant systemic factors among patients affected by peri-implant diseases. Conclusion: Patients with a history of periodontitis are at considerable risk of being affected by peri-implant mucositis, if not by peri-implantitis.

Peri-implantitis Management in the Esthetic Zone in a Periodontally Compromised Patient: Five-Year Results Including Cone Beam Computed Tomography.

Author(s): Kourkouta, Stella

Source: International Journal of Periodontics & Restorative Dentistry; Jan 2018; vol. 38 (1)

Publication Type(s): Academic Journal

Abstract: The article presents the case study of a 59-year-old woman with four Implants affected by peri-implantitis. It mentions the bone loss around the implants, the regenerative dental surgery required to resolve the issue, and the regeneration of the peri-implant tissue and reintegration with the bone.

Five-year outcomes of a randomized clinical trial comparing bone-level implants with either submerged or transmucosal healing.

Author(s): Flores-Guillen, Juan; Álvarez-Novoa, Carmen; Barbieri, Germán; Martín, Conchita;

Source: Journal of Clinical Periodontology; Jan 2018; vol. 45 (no. 1); p. 125-135

Publication Type(s): Academic Journal

Abstract: Aim: To evaluate the long-term hard and soft tissue peri-implant tissue stability of bone-level implants using a different implant placement protocol (submerged versus transmucosal). Materials and methods: This study was partly a subset analysis of a multicentre study where in 40 patients, a single bone-level implant with platform switching and a conical implant-abutment interface was placed either submerged or transmucosal in non-molar sites. Changes in the peri-implant tissues between implant placement and 5 years were assessed clinically and radiologically. Patient-related outcomes were also recorded. Results: Thirty patients completed the 5-year follow-up. Implant survival rate was 100%. The mean radiographic changes in crestal bone levels between baseline and 5 years were 0.59 (0.92) mm and 0.78 (1.03) mm for the submerged and the transmucosal groups, respectively. No statistical significant differences were found between the groups for any of the investigated variables. Peri-implantitis, defined as changes in the level of crestal bone of =2 mm together with bleeding on probing, was only diagnosed in one patient. Patients in both groups were highly satisfied with the treatment received. Conclusions: Bone-level implants with submerged or transmucosal healing protocols demonstrated similar outcomes after 5 years. Both protocols yielded optimal clinical and radiographic results when bone-level implants were placed in non-molar positions for single tooth replacement.

Bone and soft tissue outcomes, risk factors, and complications of implant-supported prostheses: 5-Years RCT with different abutment types and loading protocols.

Author(s): Göthberg, Catharina; Gröndahl, Kerstin; Omar, Omar; Thomsen, Peter

Source: Clinical implant dentistry and related research; Jan 2018

Publication Type(s): Journal Article

Abstract:BACKGROUNDData on risk factors and complications after long-term implant treatment is limited. The aims were to evaluate the role of various fixation modes and to analyze complications and risks that affect long-term use of implant-supported partial fixed dental prostheses.MATERIALS AND METHODSFifty partially edentulous subjects received three Brånemark TiUnite™ implants. Superstructures were attached directly at implant level (IL) or via abutments: machined surface (AM) and an oxidized surface (AOX, TiUnite™). Implants were immediately loaded (test) or unloaded for 3 months (control). Examinations occurred over a 5-year period.RESULTSForty-four subjects were re-examined after 5 years. Cumulative survival rates in test and control groups were 93.9% and 97.0%, respectively. Marginal bone loss (MBL; Mean [SEM]) was significantly lower at superstructures connected to AM (1.61 [0.25] mm) than at sites with no abutment IL (2.14 [0.17] mm). Peri-implantitis occurred in 9.1% of subjects and in 4.0% of implants. Multiple linear regression indicated that increased probing pocket depth (PPD), periodontal disease experience, deteriorating health, and light smoking (≤10 cigarettes/day) predict greater MBL, whereas increased buccal soft tissue thickness and higher ISQ predict lower MBL.CONCLUSIONSThe results show that MBL was influenced by the connection type. A machined abutment, instead of connecting the superstructure directly at the implant level, was beneficial. The following factors influenced MBL: PPD, periodontal disease experience, deteriorating health, light smoking, buccal soft tissue thickness, and ISQ. The results on peri-implantitis underscore the need for long-term maintenance care. Further, the abutment material surface properties constitute additional target for strategies to minimize MBL.

Long-term outcomes of narrow diameter implants in posterior jaws: A retrospective study with at least 8-year follow-up.

Author(s): Shi, Jun-Yu; Xu, Feng-Yuan; Zhuang, Long-Fei; Gu, Ying-Xin; Qiao, Shi-Chong

Source: Clinical oral implants research; Jan 2018; vol. 29 (no. 1); p. 76-81

Publication Type(s): Journal Article

Abstract:OBJECTIVEThe aim of this study was to evaluate the long-term survival, complications, peri-implant conditions, marginal bone loss, and patient satisfaction of fixed dental prostheses supported by narrow diameter implants (NDIs) in the posterior jaws.MATERIALS AND METHODSThis study was designed as a retrospective cohort study with a mean follow-up time of 10.1 years (SD: 2.5 years). Patients receiving NDIs in posterior jaw were reviewed. Implant survival, hardware complication, modified plaque index (mPI), peri-implant probing depth (PPD), percentage of bleeding on probing (BOP%), marginal bone loss (MBL), and patient satisfaction were evaluated. Log-rank test and t test were used to detect the influence of implant location and restoration type.RESULTSSixty-seven patients with 98 NDIs (Premolar site: 81, Molar site: 17, Single crowns: 33, Splinted restorations: 65) were included. The overall implant survival rates were 96.9% at implant level and 97.0% at patient level. Veneer chipping was the most common hardware complication. The veneer chipping rates were 19.4% at patient level and 18.4% at implant level. All patients showed acceptable oral hygiene. Thus, the average MBL was 1.19 mm at implant level and 1.15 mm at patient level. Eight implants (8.5%) and six patients (9.2%) were diagnosed with peri-implantitis. Fifty-eight patients (89.2%) were satisfied with the esthetics of the restorations, while 55 patients (84.6%) were satisfied with the function of the restorations.CONCLUSIONNarrow diameter implants could be a predictable treatment option in the long term. High survival rates, high patient satisfaction, acceptable complication rates and marginal bone loss could be achieved. Further long-term studies are needed to evaluate the predictability of NDIs in molar sites.

Periodontal status of tooth adjacent to implant with peri-implantitis.

Author(s): Sung, Cheng-En; Chiang, Cheng-Yang; Chiu, Hsien-Chung; Shieh, Yi-Shing

Source: Journal of dentistry; Jan 2018

Publication Type(s): Journal Article

Abstract:OBJECTIVESTo evaluate the relationship between peri-implantitis and the periodontal health of the adjacent tooth, the periodontal status of the teeth adjacent and contralateral to the implants with and without peri-implantitis.METHODSFifty-three subjects with existing dental implants and chronic periodontitis were examined in this cross-sectional study. Seventy implants were categorized into peri-implantitis (n = 42) and healthy/mucositis (n = 28) groups. The periodontal and peri-implant status, including probing depth (PD), clinical attachment level (CAL), and gingival recession (GR) were measured at 6 sites around the implants and the teeth adjacent and contralateral to those implants. In total 560 sites of the 70 teeth/implant sets, the association between the periodontal status at the near and away sites of the teeth (according to implant) and the implant status (without/with peri-implantitis) was examined.RESULTSA significantly different mean PD (5.01 ± 1.69, 4.42 ± 1.8, 3.55 ± 0.88, and 3.71 ± 1.07 mm, $p < 0.001$) and CAL (6.02 ± 2.36, 4.89 ± 2.04, 4.35 ± 1.11, and 4.35 ± 1.5 mm, $p < 0.001$) were noted at the

near sites of the teeth adjacent to the implants with peri-implantitis when compared with the away sites of adjacent and contralateral teeth and the near sites of contralateral teeth. With generalized estimating equation (GEE), the presence of peri-implantitis (β = 1.041 mm, confidence interval = 0.646-1.435, and p < 0.001; β = 0.857 mm, confidence interval = 0.279-1.434, and p < 0.004) and tooth location (β = 0.65 mm, confidence interval = 0.4-0.9, and p < 0.001; β = 0.682 mm, confidence interval = 0.34-1.024, and p < 0.001) were significantly associated with the values of the PD and CAL of the teeth. Moreover, the factor of examining sites (i.e. near and away sites of the tooth) was significantly associated with CAL (β = 0.304 mm, confidence interval = 0.019-0.588, and p = 0.036) and GR (β = 0.136 mm, confidence interval = 0.02-0.252, and p = 0.022).CONCLUSIONThe existence of peri-implantitis, the tooth location, and the examining site are significantly associated with the periodontal measurements of the remaining teeth.CLINICAL SIGNIFICANCEPeri-implant health is related to the periodontal health of the natural teeth close to the dental implant.

Supportive peri-implant therapy following anti-infective surgical peri-implantitis treatment: 5-year survival and success.

Author(s): Heitz-Mayfield, Lisa J A; Salvi, Giovanni E; Mombelli, Andrea; Loup, Pierre-Jean

Source: Clinical oral implants research; Jan 2018; vol. 29 (no. 1); p. 1-6

Publication Type(s): Journal Article

Abstract:OBJECTIVESTo evaluate clinical outcomes of supportive peri-implant therapy (SPIT) following surgical treatment of peri-implantitis.MATERIALS AND METHODSTwenty-four partially dentate patients with 36 dental implants diagnosed with peri-implantitis were treated by an anti-infective surgical protocol followed by regular supportive therapy. SPIT included removal of supra- and submucosal biofilm at the treated implants using titanium or carbon fibre curettes, or ultrasonic devices. In addition, professional prophylaxis (calculus/biofilm removal) at other implants/teeth and oral hygiene reinforcement was provided. Clinical measurements and radiographs were obtained at 1, 3 and 5 years. A successful treatment outcome was defined as implant survival with the absence of peri-implant probing depths (PD) ≥ 5 mm with concomitant bleeding/suppuration and absence of progression of peri-implant bone loss.RESULTSTwelve months after treatment, there was 100% survival of the treated implants and 79% of patients (19 of 24) had a successful treatment outcome according to the defined success criteria. At 3 years, 75% of the patients (18 of 24) had a successful treatment outcome, two patients (8%) were lost to follow-up (LTF), while 8% lost an implant, and two patients had recurrence of peri-implantitis. Between 3 and 5 years, an additional two patients were LTF, and an additional two patients each lost one implant. Thus, at 5 years 63% of patients (15 of 24) had a successful treatment outcome. Complete resolution of peri-implantitis, defined as absence of bleeding at all sites, was achieved in 42% of implants (N = 15) at 5 years.CONCLUSIONFive years following regular supportive therapy, the peri-implant conditions established following peri-implantitis surgery were maintained in the majority of patients and implants. Some patients had recurrence of peri-implantitis and some lost implants over the 5-year period.

Clinical and microbiological evaluation of the effect of Lactobacillus reuteri in the treatment of mucositis and peri-implantitis: A triple-blind randomized clinical trial.

Author(s): Galofré, M; Palao, D; Vicario, M; Nart, J; Violant, D

Source: Journal of periodontal research; Jan 2018

Publication Type(s): Journal Article

Abstract:BACKGROUND AND OBJECTIVEOral probiotics appear to improve the treatment of periodontal diseases but there is limited evidence on their efficacy in the treatment of peri-implant diseases. The objective of the present study was to evaluate, clinically and microbiologically, the effect of the oral probiotic, Lactobacillus reuteri Prodentis, as adjuvant to non-surgical mechanical therapy in implants with mucositis or peri-implantitis, placed in patients with a history of periodontal disease.MATERIAL AND METHODSA randomized, controlled, parallel-design, triple-blind prospective clinical study was designed. Patients included in the study were partially edentulous and had implants with mucositis or peri-implantitis. Implants with radiographic bone loss of ≥5 mm and/or ≥50% of the implant length were excluded, and only one implant per patient was included. After non-surgical mechanical therapy, subjects were randomly assigned to take either 1 probiotic lozenge or 1 placebo lozenge every day for 30 days. Clinical measurements were taken in the whole mouth (general plaque index and general bleeding on probing) and at the implant site (probing pocket depth, plaque index and bleeding on probing) at baseline and 30 and 90 days Microbiological examination (to identify Aggregatibacter actinomycetemcomitans, Tannerella forsythia, Porphyromonas gingivalis, Treponema denticola, Prevotella intermedia, Peptostreptococcus micros, Fusobacterium nucleatum, Campylobacter rectus and Eikenella corrodens) was performed at the same study time points that clinical measurements were made.RESULTSA total of 44 patients - 22 with mucositis and 22 with peri-implantitis - randomly received treatment with either probiotic or placebo. The probiotic L. reuteri, together with mechanical therapy, produced an additional improvement over treatment with mechanical therapy alone, both in the general clinical parameters of patients with mucositis (bleeding on probing) and at the level of implants with mucositis (probing pocket depth) or peri-implantitis (bleeding on probing and probing pocket depth). However, L. reuteri had a very limited effect on the peri-implant microbiota because the only parameter in which a significant decrease was found was the bacterial load of P. gingivalis in implants with mucositis (P = .031).CONCLUSIONSThe administration of a daily lozenge of L. reuteri for 30 days, together with mechanical debridement of the whole mouth, improved the clinical parameters of implants with mucositis or peri-implantitis over a period of at least 90 days, but the microbiological effect was much more limited. Probiotics provide an alternative therapeutic approach to consider in the prevention and treatment of peri-implant diseases, but further long-term prospective studies with standardized variables are needed.

Bisphosphonate-related osteonecrosis of the jaw

The risk of osteonecrosis on alveolar healing after tooth extraction and systemic administration of antiresorptive drugs in rodents: a systematic review.

Author(s): Poubel, Victor Lousan do Nascimento; Silva, Carolina Amália Barcellos

Source: Journal of cranio-maxillo-facial surgery : official publication of the European Association for Cranio-Maxillo-Facial Surgery; Feb 2018; vol. 46 (no. 2); p. 245-256

Publication Type(s): Journal Article Review

Abstract:PURPOSEThere is much concern about the increasing number of patients with medication-related osteonecrosis of the jaw (MRONJ), and many studies have been published in an attempt to understand the pathophysiology of this condition. This study aimed to systematically review the literature on MRONJ arising in rodents under antiresorptive drug therapy after tooth extraction.METHODSA search of electronic databases, including LILACS, PROQUEST, PubMed, SCOPUS, and the Web of Science.RESULTSThe search resulted in 2319 titles after removing the duplicates, and one paper was identified using the reference list. Ninety-eight full-text papers were then screened for eligibility, resulting in 20 for inclusion in the final qualitative synthesis. The quality of the articles was assessed using the 'ARRIVE' tool.CONCLUSIONDespite the wide heterogeneity of the methodologies used by the authors, the current available evidence suggests that the combination of bisphosphonate and/or denosumab therapy and tooth extraction is associated with osteonecrosis of the jaw in rodents.

In vivo effects of geranylgeraniol on the development of bisphosphonate-related osteonecrosis of the jaws.

Author(s): Koneski, Filip; Popovic-Monevska, Danica; Gjorgoski, Icko; Krajoska, Jovanka;

Source: Journal of cranio-maxillo-facial surgery : official publication of the European Association for Cranio-Maxillo-Facial Surgery; Feb 2018; vol. 46 (no. 2); p. 230-236

Publication Type(s): Journal Article

Abstract:BACKGROUNDBisphosphonate-related osteonecrosis of the jaws (BRONJ) is a complication of the bisphosphonate (BP) treatment and its pathopysiology is still not fully understood. The existing preventive and treatment options require updates and more attention. Geranylgeraniol (GGOH) so far demonstrated an increased activity and viability of the cells previously treated with zoledronic acid (ZA). The aim of this study was to evaluate the in vivo effects of GGOH on the development of BRONJ.MATERIALS AND METHODSA total of 30 male Wistar rats were included in the study, divided into three groups: two experimental groups (EG1 and EG2) and a control group (CG). Rats from EG1 and EG2 were treated with 0,06 mg/kg ZA ip weekly in a duration of five weeks, while CG received saline ip. On the third week all animals underwent extraction of the lower right first molars. The rats from EG2 received a local solution of GGOH in concentration of 5 mM in the socket every day after the tooth extraction. The analyses included clinical evaluation on the wound healing and pathohistological evaluation for presence and level of osteonecrosis.RESULTSEG2 showed significantly improved wound healing and tissue proliferation, when compared to EG1. EG2 significantly differed from EG1 and CG ($p<0,05$) for the presence of microscopical osteonecrosis (80% vs 22,2% vs 0%). Regarding to the number of empty lacunes without osteocytes and the level of necrosis, all groups demonstrated significant differences.CONCLUSIONGeranylgeraniol in a form of local solution may be a promising option for prevention and treatment of BRONJ.

Detecting the earliest radiological signs of bisphosphonate-related osteonecrosis.

Author(s): Devlin, H; Greenwall-Cohen, J; Benton, J; Goodwin, T L; Littlewood, A; Horner, K

Source: British dental journal; Jan 2018; vol. 224 (no. 1); p. 26-31

Publication Type(s): Journal Article

Abstract: Introduction Oral bisphosphonates are the most commonly prescribed anti-resorptive drugs used in the treatment of osteoporosis, but osteonecrosis of the jaw is a serious complication. The early diagnosis of this destructive side effect is crucial in preventing excessive bone loss, pain and infection.Objective To aid dental practitioners in the early identification of bisphosphonate-related osteonecrosis of the jaw.Method A scoping review was carried out.Data sources We searched MEDLINE via OVID, EMBASE via OVID, Dentistry and Oral Sciences Source (DOSS), Proquest Dissertation and Theses Search, to identify references that described clinical and radiological

findings in medication-related osteonecrosis of the jaw (MRONJ).Data selection Nineteen references mentioned the earliest radiological changes in MRONJ with a description of the observations and were included in the analysis.Data synthesis The radiographic signs included osteosclerosis/lysis, widening of the periodontal ligament and thickening of the lamina dura and cortex. To assess the quality of original data on which recommendations had been made, these 19 studies were subjected to a quality appraisal.Conclusion Using bone exposure as a criterion for diagnosis of MRONJ, leads to delayed diagnosis and a poor response to treatment. In those patients at risk of bone exposure with MRONJ, insufficient information is present in the literature to allow the general dental practitioner to reliably identify the radiographic features indicating imminent bone exposure. A well-designed prospective study is needed.

Use of Leukocyte- and Platelet-Rich Fibrin in the Treatment of Medication-Related Osteonecrosis of the Jaws.

Author(s): Maluf, Gustavo; Caldas, Rogério Jardim; Silva Santos, Paulo Sérgio

Source: Journal of oral and maxillofacial surgery : official journal of the American Association of Oral and Maxillofacial Surgeons; Jan 2018; vol. 76 (no. 1); p. 88-96

Publication Type(s): Journal Article

Abstract: Lesions associated with medication-related osteonecrosis of the jaws (MRONJ) are refractory to different treatment approaches. Hence, auxiliary approaches capable of improving patient outcomes should be explored. Leukocyte- and platelet-rich fibrin (LPRF) is a second-generation platelet concentrate (natural autologous fibrin matrix). It shows anti-infectious activity through immune regulation and accelerates the angiogenesis and multiplication of fibroblasts and osteoblasts; in consequence, it stimulates soft tissue healing and prevents exposure of the alveolar bone in the oral cavity. This report describes 2 cases involving women with breast cancer who were being treated with zoledronic acid and exhibited advanced MRONJ. In case 1, MRONJ developed in the maxilla after dental extraction; in case 2, it was assumed that MRONJ arose spontaneously in the mandible because no other risk factors could be detected. These cases were managed with surgical resection of the necrotic bone followed by placement of an LPRF membrane. Complete wound healing and intact mucosal cover were achieved. At clinical and tomographic follow-up after 2 years, there were no oral lesions or complaints. Therefore, this could be a noninvasive, quick, and alternative approach to manage bone exposure. The LPRF membrane contributes to a successful outcome and acts as a physical barrier against micro-organisms, thus preventing secondary infectins.

Dental-related cleft lip and palate

Secondary Alveolar Bone Grafting in Patients Born With Unilateral Cleft Lip and Palate: A 20-Year Follow-up.

Author(s): Jabbari, Fatemeh; Wiklander, Laila; Reiser, Erika; Thor, Andreas; Hakelius, Malin; **Source:** The Cleft palate-craniofacial journal : official publication of the American Cleft Palate-Craniofacial Association; Feb 2018; vol. 55 (no. 2); p. 173-179

Publication Type(s): Journal Article

Abstract:OBJECTIVETo identify factors of oral health important for the final outcome, after secondary alveolar bone grafting in patients born with unilateral cleft lip and palate and compare occlusal radiographs with cone beam computed tomography (CBCT) in assessment of alveolar bone height.DESIGNObservational follow-up study.SETTINGCleft Lip and Palate Team, Craniofacial Center, Uppsala University Hospital, Sweden.PATIENTS40 nonsyndromic, Caucasian patients with unilateral complete cleft lip and palate.INTERVENTIONSClinical examination, CBCT, and occlusal radiographs.MAIN OUTCOME MEASUREMENTSAlveolar bone height was evaluated according to

Bergland index at a 20-year follow-up.RESULTSThe alveolar bone height in the cleft area was significantly reduced compared to a previously reported 10-year follow-up in the same cohort by total (P = .045) and by subgroup with dental restoration (P = .0078). This was positively correlated with the gingival bleeding index (GBI) (r = 0.51, P = .0008) and presence of dental restorations in the cleft area (r = 0.45, P = .0170). There was no difference in the Bergland index generated from scoring the alveolar bone height on occlusal radiographs as with the equivalent index on CBCT.CONCLUSIONPatients rehabilitated with complex dental restoration seems to be at higher risk for progression of bone loss in the cleft area. Supportive periodontal therapy should be implemented after complex dental restorations in cleft patients. Conventional occlusal radiographs provide an adequate image for evaluating postoperative bone height in clinical follow-up.

Custom-Made Palatal Shield Use in Cleft Palate and Fistula Repair: A Potential Benefit for Fast Postoperative Recovery.

Author(s): Tan, Anouk; Heijdenrijk, Kees; Moues, Chantal M

Source: The Cleft palate-craniofacial journal : official publication of the American Cleft Palate-Craniofacial Association; Feb 2018; vol. 55 (no. 2); p. 307-311

Publication Type(s): Journal Article

Abstract:OBJECTIVETo review our experience with a polymethylmethacrylate (PMMA) protective shield used as an adjunct to protect the newly restored palate in wide bilateral cleft and complex fistula closure without diet restrictions.DESIGNClinical cohort study.SETTINGDivision of Plastic Surgery and Maxillary Surgery.PATIENTSA selection of 22 cleft palate children undergoing (tertiary) palatal fistula repair (n = 16) or closure of a complex wide primary palatal defect (n = 6).INTERVENTIONSOne month prior to surgery, a plaster model of the palate was made adding a 5- to 8-mm-thick layer of dental putty to the level of the dental arch. On top of the putty, a 1.5-mm-thick PMMA shield was created to cover the postoperative elevated and restored palate.MAIN OUTCOME MEASURESFistula recurrence rate, postoperative complications, days of hospitalization.RESULTSAll patients maintained durable and safe palatal closure without fistula recurrence within the follow-up period, varying from 1 until 4 years. Recovery was fast, with a mean duration of hospitalization of 1.5 days. All patients could directly resume their normal diet.CONCLUSIONSA PMMA shield has been shown to be a safe and helpful adjunct in complex fistula repair and late anterior palate repair.

Postoperative Complications Following LeFort 1 Maxillary Advancement Surgery in Cleft Palate Patients: A 5-Year Retrospective Study.

Author(s): Moran, Isabelle; Virdee, Satnam; Sharp, Ian; Sulh, Jagdeep

Source: The Cleft palate-craniofacial journal : official publication of the American Cleft Palate-Craniofacial Association; Feb 2018; vol. 55 (no. 2); p. 231-237

Publication Type(s): Journal Article

Abstract:OBJECTIVETo investigate the postoperative complication rates of LeFort 1 maxillary advancement surgery in cleft patients when performed by a single surgeon over a 5-year period.DESIGNA retrospective case note review of 79 cleft palate patients.SETTINGAll surgery was performed by a single oral and maxillofacial surgeon in a tertiary care center.PARTICIPANTSAll cleft palate patients over 17 years of age who opted for surgical correction of maxillary hypoplasia with a LeFort 1 between 2010 and 2015. Patients required full surgical and clinical records.INTERVENTIONSComplete surgical advancement of the maxilla ranging from 2.0 to 18.0 mm performed by conventional osteotomies (87%) or distraction osteogenesis (13%).MAIN OUTCOME MEASURE(S)Postoperative patient- and clinician-reported complications at set-interval follow-up appointments.RESULTSTwenty-one patients (26.58%) reported no complications; 11 postoperative

complications were identified in the remaining cohort. Temporary paresthesia of the infraorbital nerve was the most common complication (53.16%) followed by infection (13.92%). Other complications included relapse (11.39%), maxillary instability (6.33%), velopharyngeal impairment (6.33%), nasal obstruction (5.06%), chronic sinusitis (3.80%), bony dehiscence (1.27%), gingival necrosis (1.27%), partial necrosis of the maxilla (1.27%), and loss of tooth vitality (1.27%).CONCLUSIONSLeFort 1 maxillary advancement surgery in cleft palate patients is associated with a wide range of postoperative complications, most commonly temporary paresthesia of the infraorbital nerve. Detailed, informed consent is essential prior to surgery.

Congenital Vomer Agenesis: A Rare and Poorly Understood Condition Revealed by Cone Beam CT.

Author(s): Yan, David Jun; Lenoir, Vincent; Chatelain, Sibylle; Stefanelli, Salvatore; Becker, Minerva

Source: Diagnostics (Basel, Switzerland); Feb 2018; vol. 8 (no. 1)

Publication Type(s): Case Reports

Available at Diagnostics (Basel, Switzerland) - from Europe PubMed Central - Open Access

Abstract: Isolated congenital vomer agenesis is a very rare and poorly understood condition. In the context of dental work-up by cone-beam computed tomography (CBCT), the explored volume of the facial bones occasionally reveals incidental abnormalities. We report the case of a 13-year old Caucasian female who underwent CBCT for the pre-treatment evaluation of primary failure of tooth eruption affecting the permanent right upper and inferior molars. CBCT depicted a large defect of the postero-inferior part of the nasal septum without associated soft tissue abnormality and without cranio-facial malformation or cleft palate. In the absence of a history of trauma, chronic inflammatory sinonasal disease, neoplasia and drug abuse, a posterior nasal septum defect warrants the diagnosis of vomer agenesis. A discussion of this condition and of salient CBCT features is provided.

Teeth agenesis evaluation in an Italian sample of complete unilateral and bilateral cleft lip and palate patients.

Author(s): DE Stefani, Alberto; Bruno, Giovanni; Balasso, Paolo; Mazzoleni, Sergio; Baciliero, Ugo; Gracco, Antonio

Source: Minerva stomatologica; Jan 2018

Publication Type(s): Journal Article

Abstract:BACKGROUNDThe aim of this study is to evaluate the prevalence and the distribution of teeth agenesis inside and outside the cleft area in an Italian population with a non-syndromic unilateral (UCLP) and bilateral (BCLP) cleft lip and palate.METHODS233 digital panoramic radiographs (151 females, 82 males) of patients between seven and fifteen years old were recruited from the maxillo-facial surgery clinic of the San Bortolo Hospital of Vicenza according with the following inclusion criteria: unilateral or bilateral cleft lip and palate, no other syndroms, no previous orthodontic treatment, no previous teeth extractions and good quality of digital panoramic radiographs. Statistical analyses were carried using Chi-squared test (p-value <0.05).RESULTS160 subjects out of 233 (68.67%) presented with agenesis of at least 1 missing permanent tooth. The prevalence of hypodontia is significantly more frequent in BCLP patients than UCLP ones with a total of 153 missing teeth (51.34%). The most frequent missing tooth is the lateral incisor in the upper left side (37.6%) followed by the lateral incisor in the upper right side (29.2%), the upper second premolars, the upper central incisors and the upper canine.CONCLUSIONSThis study is the first that evaluates the prevalence and distribution of hypodontia in an Italian population with cleft lip and palate. The higher congenital absence of dental elements in this group than healthy general patients is an important aspect to consider for a functional and aesthetic oral rehabilitation.

Evaluation of alveolar bone support around incisors in patients with unilateral cleft lip, alveolus, and palate in late mixed dentition using cone beam computed tomography.

Author(s): Pan, Yingdan; Zeng, Yunting; Zhang, Zeyu; Liu, Yiqin; Jing, Yi; Xiao, Liwei

Source: The Angle orthodontist; Jan 2018

Publication Type(s): Journal Article

Abstract:OBJECTIVESTo evaluate alveolar bone support around cleft-adjacent maxillary central incisors (U1) in patients with unilateral cleft lip, alveolus and palate (UCLAP) in the late mixed dentition and to investigate the correlation between the alveolar bone thickness (ABT) and tooth inclination.MATERIALS AND METHODSCone beam computed tomography scans of 45 subjects with UCLAP (29 boys, 16 girls; mean age = 10.74 ± 1.08 years) were assessed. The distance between the cementoenamel junction (CEJ) and alveolar bone crest (AC), and the ABTs at 3 mm, 6 mm, and the apex were measured on the labial, lingual and distal surfaces of U1. The cleft and normal sides were compared using a paired t-test and Pearson's $\chi 2$ test. Pearson's correlation was used to explore the association between the ABT and tooth inclination of cleft-adjacent U1 in the labiolingual and mesiodistal dimensions.RESULTSThe CEJ-AC distances were significantly greater in cleft-adjacent U1 ($P < .01$), with more bone height reduction observed labially and distally ($P < .001$). The labial, lingual, and apico-distal ABTs were decreased on the cleft side ($P < .01$). A positive correlation was found between the apico-labial ABT and the labiolingual inclination ($r = 0.568$, $P < .01$).CONCLUSIONSPatients with UCLAP have reduced alveolar bone support around the cleft-adjacent U1, and the apico-labial ABT tends to decrease with increasing lingual tooth inclination; however, the correlation was weak.

Tooth-borne distraction osteogenesis versus conventional Le Fort I in maxillary advancement of cleft lip and palate patients.

Author(s): Jamilian, Abdolreza; Showkatbakhsh, Rahman; Behnaz, Mohammad; Ghassemi, Alireza

Source: Minerva stomatologica; Jan 2018

Publication Type(s): Journal Article

Abstract:BACKGROUNDDistraction osteogenesis (DO) is rapidly becoming a mainstream surgical technique for correction of maxillary deficiency. The aim of this study was to compare the effectiveness of a newly designed tooth-borne osteogenic distraction device with conventional LeFort 1 osteotomy in maxillary advancement of cleft lip and palate patients.METHODSThe DO group consisted of 10 subjects (7 males, 3 females) with a mean age of 21.2 (SD 4.2) years. In these patients, the newly designed distraction device which exerted force anteroposteriorly was cemented after mobilization of the maxilla. After a latency period of 7 days, the distractor was activated twice daily by a total amount of 0.5 mm per day. The activation was continued for 3 weeks. After an 8-week consolidation period, the distraction appliance was removed. Cephalograms of DO patients were obtained at the start of distraction and at the end of consolidation. The LeFort 1 group consisted of 11 subjects (6 males, 5 females) with a mean age of 22.3 (SD 3.7) years. Pre and post-surgery lateral cephalograms were obtained. T-Test and paired T-test were used to evaluate the data.RESULTSAt the end of treatment, the SNA angle of LeFort 1 patients increased by 5.5° (SD 2.3) ($P<0.001$) and the SNA angle of DO patients increased by 3.4° (SD 2) ($P<0.001$).CONCLUSIONSCurrent evidence suggests that both conventional LeFort 1 and tooth-borne osteogenic distraction device can effectively advance the maxilla forward in patients with cleft lip.

An Intraoral Appliance to Retract the Protrusive Premaxilla in Bilateral Cleft Lip Patients Presenting Late for Primary Lip Repair.

Author(s): Vura, Nandagopal; Gaddipati, Rajasekhar; Palla, Yudhistar; Kumar, Pranay

Source: The Cleft palate-craniofacial journal : official publication of the American Cleft Palate-Craniofacial Association; Jan 2018 ; p. 1055665617732783

Publication Type(s): Journal Article

Abstract: The protruding and deviated premaxilla in bilateral complete cleft lip and palate (BCL/P) patients causes a perplexing problem in achieving a tension-free primary lip closure. An innovative noninvasive active intraoral Fixed Pre-Surgical Cleft Orthopedic (FPSCO) appliance is presented that has enabled to successfully reposition the premaxillary segment to a more favorable position prior to the surgical repair in 4 BCL/P patients, who reported late for treatment with a mean age of 18 ± 3 months. All the patients had at least 1 deciduous tooth erupted in 3 cleft segments, 1 premaxilla (PM), and 2 lateral maxillary (LM) segments. This innovative approach is a noninvasive method of getting the cleft segments closer prior to chelioplasty, where conventional presurgical nasoalveolar molding (PNAM) is not possible, which needs to be done early in life as it requires circulating maternal estrogen levels to achieve results preferably possible in patients younger than 3 to 6 months. Bonding to erupted teeth with glass ionomer cement was implemented to secure the appliance. Nickel-titanium (Ni-Ti) closed-coil springs were used that delivered continuous forces of 150 g/5 oz per side to retract the premaxillary segment. The mean active period of treatment time was 3.5 ± 1.6 months and the retention period was 1.2 ± 0.6 months, following which cheiloplasty was performed.

A Prospective Study of Chin Bone Graft Harvesting for Unilateral Maxillary Alveolar Cleft During Mixed Dentition.

Author(s): Shirzadeh, AliReza; Rahpeyma, Amin; Khajehahmadi, Saeedeh

Source: Journal of oral and maxillofacial surgery : official journal of the American Association of Oral and Maxillofacial Surgeons; Jan 2018; vol. 76 (no. 1); p. 180-188

Publication Type(s): Journal Article

Abstract:PURPOSEThe chin is a common donor site for alveolar cleft bone grafting. The amount of bone available at this site can be limited, because conservative harvesting with mixed dentition must consider the incisive nerve, the unerupted mandibular canine, and the integrity of the inferior mandibular border.MATERIALS AND METHODSPatients with nonsyndromic unilateral alveolar cleft in the mixed dentition stage were selected for this study. The volume of bone obtained from the mandibular symphysis (symphysis menti), degree of alteration in lower lip sensation, anterior tooth vitality, remaining bone in the alveolar cleft, and bone defects at the donor site 1 year after surgery were evaluated.RESULTSEighteen patients were enrolled in this study. The mean volume of bone harvested from the symphysis was 2.1 mL (range, 1.6 to 2.3 mL). For all cases, the bone volume harvested from the symphysis was insufficient to fill the alveolar cleft defect, and allograft had to be added to completely fill the cleft. Allograft was admixed in the range of 0.5 to 1 mL with autogenous bone harvested from the mandible. Lower lip sensation and vitality of the anterior teeth of the mandible were within the normal range 1 year after surgery in all cases. Fourteen of 18 patients (77.8%) had normal bone height or bone height at least three fourths of the expected height in the grafted alveolar cleft after 1 year; only 10% of the defect remained in the mandible.CONCLUSIONThe amount of bone yielded by conservative monocortical bone harvest from the mandibular symphysis during the mixed dentition stage for unilateral alveolar cleft bone grafting is not sufficient in volume and should be mixed with allograft. However, donor site morbidity is low with this approach.

Third molar agenesis as a potential marker for craniofacial deformities.

Author(s): Fernandez, Clarissa Christina Avelar; Pereira, Christiane Vasconcellos Cruz Alves

Source: Archives of oral biology; Jan 2018; vol. 88 ; p. 19-23

Publication Type(s): Journal Article

Abstract: The identification of clinical patterns of tooth agenesis in individuals born with craniofacial deformities may be a useful tool for risk determination of these defects. We hypothesize that specific craniofacial deformities are associated with third molar agenesis.OBJECTIVEThe aim of this study was to identify if third molar agenesis could have a relation with other craniofacial structure alterations, such as cleft lip and palate, skeletal malocclusion, or specific growth patterns in humans.DESIGNData were obtained from 550 individuals ascertained as part of studies aiming to identify genetic contributions to oral clefts. 831 dental records of patients aged over eight years seeking orthodontic treatment were also included. SN-GoGn angle were used to classify the growth pattern (hypo-divergent, normal and hyper-divergent), and the ANB angle was used to verify the skeletal malocclusion pattern (Class I, II and III). Panoramic radiographs were used to determine third molar agenesis.RESULTSA high frequency of third molar agenesis among individuals born with cleft lip with or without cleft palate (55%), as well as among their relatives (93.5%) was found. Third molar agenesis was not associated to skeletal malocclusion or growth pattern.CONCLUSIONIt appears that third molar agenesis is associated with the disturbances that lead to cleft lip and palate.

Dynamic Cleft Maxillary Orthopedics and Periosteoplasty.

Author(s): Lukash, Frederick N; Shikowitz-Behr, Lauren B; Schwartz, Michael; Tuminelli, Frank

Source: Annals of plastic surgery; Jan 2018; vol. 80 (no. 1); p. 40-44

Publication Type(s): Journal Article

Abstract: In 1985 this cleft team, dissatisfied with the treatment and results from cleft lip and palate repair, began a longitudinal long-term study using dynamic maxillary orthopedics and periosteoplasty as was originally described by Drs Millard and Latham. All cases were carefully documented through adolescence, including clinical assessments, orthodontic, radiographic, and cephalometric analyses. In 1998, in this journal, we published our data on 35 complete unilateral and 10 complete bilateral cleft patients. At that time facial growth was following normal cephalometric patterns. Crossbites were dental and treated with orthodontics. There was radiologic evidence of bone within the alveolus with elimination of the oronasal fistula, and facial aesthetics revealed soft faded scars and balanced noses.That publication was a preliminary study with the intent to provide long-term results when full facial growth was achieved. This article reports on 25 patients from the initial cohort (20 unilateral and 5 bilateral) that we were able to closely follow up for 25 years, with the same clinical team, making it the longest study of its kind.At this stage, data revealed continued growth of the midface both vertically and horizontally. Secondary alveolar cleft bone grafting when required was in small aliquots placed into well-healed tissue, and orthodontic movement of teeth was through a consolidated alveolus. Orthognathic procedures were performed in 2 of 5 bilateral and 0 of 20 unilateral cases.We concluded that in this cohort, dynamic maxillary orthopedics and periosteoplasty, despite controversy in the literature, did not negatively impact facial growth and provided the benefit of early structural normalization and social integration by consolidation of the maxilla, closure of the oronasal fistula, tension free closure of the lip, and by balancing the nose.

PGAP3-related hyperphosphatasia with mental retardation syndrome: Report of 10 new patients and a homozygous founder mutation.

Author(s): Abdel-Hamid, M S; Issa, M Y; Otaify, G A; Abdel-Ghafar, S F; Elbendary, H M; Zaki, M S

Source: Clinical genetics; Jan 2018; vol. 93 (no. 1); p. 84-91

Publication Type(s): Journal Article

Abstract:BACKGROUNDHyperphosphatasia with mental retardation syndrome (HPMRS) is caused by recessive mutations in genes involved in the glycosylphosphatidylinsitol pathway, including PGAP3.MATERIALS AND METHODSWe describe 10 patients from 8 Egyptian families presenting with developmental delay, severe intellectual disability, distinct facial dysmorphism and increased alkaline phosphatase. Sanger sequencing of PGAP3 was performed.RESULTSEight patients had cleft palate, 4 had postnatal microcephaly and 5 had seizures. Neuro-imaging findings showed thin corpus callosum in 9 patients, mild ventriculomegaly in 3 patients and variable degrees of cerebellar vermis hypoplasia in 4 patients, a finding not previously reported in patients with HPMRS. Additional manifestations included double row teeth, hypogenitalism and congenital heart disease. Biallelic loss of function mutations in the PGAP3 gene were detected in all patients. Nine patients were homozygous for the c.402dupC (p.M135Hfs*28) mutation strongly suggesting a founder effect. On the other hand, 1 patient had a novel mutation, c.817_820delGACT (p.D273Sfs*37).CONCLUSIONThis is the largest series of patients with HPMRS from same ethnic group. Our results reinforce the distinct clinical and facial features of PGAP3-related HPMRS which are the clue for targeted genetic testing. Moreover, we present additional unreported clinical and neuro-imaging findings and a novel mutation thus expanding the phenotypic and mutational spectrum of this rare disorder.

Periodontal disease and antibiotics

Microbial colonization of the periodontal pocket and its significance for periodontal therapy.

Author(s): Mombelli, Andrea

Source: Periodontology 2000; Feb 2018; vol. 76 (no. 1); p. 85-96

Publication Type(s): Journal Article Review

Abstract: The aim of this paper was to evaluate strategies for periodontal therapy from the perspective of periodontal disease being a consequence of microbial colonization of the periodontal pocket environment. In classic bacterial infections the diversity of the microbiota decreases as the disease develops. In most cases of periodontitis, however, the diversity of the flora increases. Most incriminating bacteria are thought to harm tissues significantly only if present in high numbers over prolonged periods of time. Clinical trials have repeatedly demonstrated that scaling and root planing, a procedure that aims to remove subgingival bacterial deposits by scraping on the tooth surface within the periodontal pocket, is effective. At present, for the therapy of any form of periodontal disease, there exists no protocol with proven superiority, in terms of efficiency or effectiveness, over scaling and root planing plus systemic amoxicillin and metronidazole. Some exponents advocate rationing these drugs for patients with a specific microbial profile. However, the evidence for any benefit of bacteriology-assisted clinical protocols is unsatisfactory. Treated sites are subject to recolonization with a microbiota similar to that present before therapy. The degree and speed of recolonization depends on the treatment protocol, the distribution patterns of periodontal microorganisms elsewhere in the oral cavity and the quality of the patient's oral hygiene. To limit the use of antibiotics and to avoid accumulation of harmful effects by repeated therapy, further efforts must be made to optimize procedures addressing the microbial colonization and recolonization of the periodontal pocket.

Modulation of periodontitis progression using pH-responsive nanosphere encapsulating metronidazole or N-phenacylthialzolium bromide.

Author(s): Lin, J-H; Feng, F; Yu, M-C; Wang, C-H; Chang, P-C

Source: Journal of periodontal research; Feb 2018; vol. 53 (no. 1); p. 22-28

Publication Type(s): Journal Article

Abstract:BACKGROUND AND OBJECTIVEThis study aimed to develop pH-responsive polylactide-glycolic acid co-polymer and chitosan (PLGA/chitosan) nanosphere as an inflammation-responsive vehicle and evaluate the potential of the nanosphere encapsulating metronidazole, an antibiotic, and N-phenacylthiazolium bromide (PTB), a host modulator, for treating periodontitis.MATERIAL AND METHODSPLGA/chitosan nanospheres were fabricated using oil-in-water emulsion method. Experimental periodontitis was induced on the rat maxillae, and the sites were randomly allocated to four treatment categories, including periodontitis alone (PR), periodontitis with nanospheres alone, nanospheres encapsulating metronidazole (MT) and nanospheres encapsulating PTB (PB). The ligature was retained until the animals were killed, and the treatment outcome was evaluated by the progression of periodontal bone loss (PPBL), inflammatory cell infiltration and collagen deposition.RESULTSThe encapsulated drug was released rapidly from the nanospheres without significant initial burst release at pH 5.5. Compared with group PR, PPBL was significantly reduced in groups MT and PB on day 4 (P<.05). On day 21, PPBL was significantly lower in group PB (P<.05). In groups MT and PB, inflammation was significantly reduced in groups MT and PB relative to groups PR and periodontitis with nanospheres alone (P<.05), and collagen deposition was significantly greater relative to group PR (P<.05).CONCLUSIONPLGA/chitosan nanospheres encapsulating metronidazole or PTB showed potential for modulating periodontitis progression.

Use of Antibiotic Prophylaxis for Tooth Extractions, Dental Implants, and Periodontal Surgical Procedures.

Author(s): Suda, Katie J; Henschel, Heather; Patel, Ursula; Fitzpatrick, Margaret A;

Source: Open forum infectious diseases; Jan 2018; vol. 5 (no. 1); p. ofx250

Publication Type(s): Journal Article

Available at Open forum infectious diseases - from Europe PubMed Central - Open Access

Abstract: BackgroundGuidelines for antibiotics prior to dental procedures for patients with specific cardiac conditions and prosthetic joints have changed, reducing indications for antibiotic prophylaxis. In addition to guidelines focused on patient comorbidities, systematic reviews specific to dental extractions and implants support preprocedure antibiotics for all patients. However, data on dentist adherence to these recommendations are scarce.MethodsThis was a cross-sectional study of veterans undergoing tooth extractions, dental implants, and periodontal procedures. Patients receiving antibiotics for oral or nonoral infections were excluded. Data were collected through manual review of the health record.ResultsOf 183 veterans (mean age, 62 years; 94.5% male) undergoing the included procedures, 82.5% received antibiotic prophylaxis (mean duration, 7.1 ± 1.6 days). Amoxicillin (71.3% of antibiotics) and clindamycin (23.8%) were prescribed most frequently; 44.7% of patients prescribed clindamycin were not labeled as penicillin allergic. Of those who received prophylaxis, 92.1% received postprocedure antibiotics only, 2.6% received preprocedural antibiotics only, and 5.3% received pre- and postprocedure antibiotics. When prophylaxis was indicated, 87.3% of patients received an antibiotic. However, 84.9% received postprocedure antibiotics when preprocedure administration was indicated. While the majority of antibiotics were indicated, only 8.2% of patients received antibiotics appropriately. The primary reason was secondary to prolonged duration. Three months postprocedure, there were no occurrences of Clostridium difficile infection, infective endocarditis, prosthetic joint infections, or postprocedure oral infections.ConclusionThe majority of patients undergoing a dental procedure received antibiotic prophylaxis as indicated. Although patients for whom antibiotic prophylaxis was indicated should have received a single preprocedure dose, most antibiotics were prescribed postprocedure. Dental stewardship efforts should ensure appropriate antibiotic timing, indication, and duration.

Formulation and Investigation of a Lipid Based Delivery System Containing Antimicrobials for the Treatment of Periodontal Disease.

Author(s): Leber, Attila; Budai-Szucs, Maria; Urban, Edit; Valyi, Peter; Kovacs, Anita; Berko, Szilvia;

Source: Current drug delivery; Jan 2018

Publication Type(s): Journal Article

Abstract:BACKGROUNDPeriodontitis is a chronic inflammatory disease, which affects the supporting tissues of the teeth, and without proper treatment it may lead to tooth loss. Antibiotics - dministered orally - have been widely used in the treatment of periodontitis. With the conventional administration routes, adequate drug levels cannot be reached in the periodontal pockets and oral application of antimicrobials could lead to side effects. Drug delivery systems containing antibiotics, administered at the site of infection, could possibly help eliminate pathogen bacteria and treat periodontitis.OBJECTIVEThe aim of the recent study was to create a locally swellable, biodegradable, biocompatible, mucoadhesive, lipophilic drug delivery system (SDLDDS) containing antimicrobial drugs which softens at body temperature, accommodates to the shape of the periodontal pocket and can provide extended drug release for at least one week.METHODSDuring the formulation, thermoanalytical, consistency, wettability, swelling, degradation and drug release studies were applied to determine the ideal ratios of lipid bases, structure-building components and surface active agent concentrations.RESULTS AND DISCUSSIONThe structure-building component cetostearyl alcohol appeared to be the most convenient thanks to its wettability and mechanical properties, which led to controlled drug release. With the use of ideal concentrations of components (10% surfactant, 40% structure-building component, 32 % lipid base, 15% antimicrobial agent and 3% polymer), sustained drug release can be provided up to nearly 3 weeks.

No association between periodontitis and preterm low birth weight: a case-control study.

Author(s): Fogacci, Mariana Fampa; Cardoso, Elaine de O C; Barbirato, Davi da S;

Source: Archives of gynecology and obstetrics; Jan 2018; vol. 297 (no. 1); p. 71-76

Publication Type(s): Journal Article

Abstract:PURPOSEThis study aimed to investigate the association between periodontitis in pregnant women and adverse pregnancy outcomes by heeding confounding risk factors for preterm low birth weight infants.METHODSThis study was reported according to The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) Statement. A case-control study was conducted. Medical records of all pregnant women attending a prenatal care clinic were screened. Those between 21 and 34 years and gestational age of 28-32 weeks were initially enrolled in the study. The exclusion criteria were then applied: diabetes mellitus, genitourinary tract infections, or HIV infection; previous multiple gestations; previous preterm birth/low birth weight infants; in vitro fertilization procedures; placental, cervical/uterine abnormalities; history of infertility; history of drug abuse; and any medical conditions that required antibiotics prophylaxis. Patients' anthropometric, demographic, and behavioral characteristics were collected. The periodontal clinical parameters were obtained from six sites per tooth: clinical attachment level, probing pocket depth, dental plaque index, and gingival bleeding index. Women were then allocated into two groups: mothers of preterm and/or low birth weight newborns (cases) and mothers of full-term and normal birth weight newborns (controls).RESULTSPeriodontal clinical parameters were analyzed and reported separately for each group, and no significant differences were observed ($p > 0.05$). Logistic regression analysis revealed that periodontal clinical parameters were not associated with the adverse pregnancy outcomes.CONCLUSION(S)After controlling for confounding factors, our results suggest that maternal periodontal disease is not a risk factor associated with preterm low birth weight infants.

Microbiological and clinical effects of probiotics and antibiotics on nonsurgical treatment of chronic periodontitis: a randomized placebo- controlled trial with 9-month follow-up.

Author(s): Morales, Alicia; Gandolfo, Alessandro; Bravo, Joel; Carvajal, Paola; Silva, Nora

Source: Journal of applied oral science : revista FOB; Jan 2018; vol. 26 ; p. e20170075

Publication Type(s): Journal Article

Available at Journal of applied oral science : revista FOB - from nih.gov

Abstract: The aim of this double-blind, placebo-controlled and parallel- arm randomized clinical trial was to evaluate the effects of Lactobacillus rhamnosus SP1-containing probiotic sachet and azithromycin tablets as an adjunct to nonsurgical therapy in clinical parameters and in presence and levels of Tannerella forsythia, Porphyromonas gingivalis and Aggregatibacter actinomycetemcomitans. Forty-seven systemically healthy volunteers with chronic periodontitis were recruited and monitored clinically and microbiologically at baseline for 3, 6 and 9 months after therapy. Subgingival plaque samples were collected from four periodontal sites with clinical attachment level ≥1 mm, probing pocket depth ≥4 mm and bleeding on probing, one site in each quadrant. Samples were cultivated and processed using the PCR technique. Patients received nonsurgical therapy including scaling and root planing (SRP) and were randomly assigned to a probiotic (n=16), antibiotic (n = 16) or placebo (n = 15) group. L. rhamnosus SP1 was taken once a day for 3 months. Azithromycin 500mg was taken once a day for 5 days. All groups showed improvements in clinical and microbiological parameters at all time points evaluated. Probiotic and antibiotic groups showed greater reductions in cultivable microbiota compared with baseline. The placebo group showed greater reduction in number of subjects with P. gingivalis compared with baseline. However, there were no significant differences between groups. The adjunctive use of L. rhamnosus SP1 sachets and azithromycin during initial therapy resulted in similar clinical and microbiological improvements compared with the placebo group.

Optimal dose and duration of amoxicillin-plus-metronidazole as an adjunct to non-surgical periodontal therapy: A systematic review and meta-analysis of randomized, placebo-controlled trials.

Author(s): McGowan, Kelly; McGowan, Troy; Ivanovski, Saso

Source: Journal of clinical periodontology; Jan 2018; vol. 45 (no. 1); p. 56-67

Publication Type(s): Journal Article Review

Abstract:AIMThis systematic review aimed to determine the optimum dose and duration of amoxicillin-plus-metronidazole prescribed as an adjunct to non-surgical treatment of periodontitis.METHODSElectronic searching identified 376 records, of which 18 were eligible blinded, randomized placebo-controlled trials. The primary outcomes assessed were periodontal pocket depth and clinical attachment level at 3 months, and secondary outcomes were adverse events and compliance. Subgroup analyses were conducted to compare lower and higher doses, and 7- and 14-day courses.RESULTSMeta-analysis showed a small beneficial effect of adjunctive amoxicillin-plus-metronidazole for each primary outcome, but there was <0.1 mm variation with antibiotic dose or duration. Risk differences for adverse events in the higher dose and longer duration groups were minimally greater (0.04 and 0.05, respectively), and there was one report of anaphylaxis; 1.3% of patients were not fully compliant.CONCLUSIONThere was no clinically meaningful difference between different doses or duration of amoxicillin-plus-metronidazole at 3 months post-treatment. Without compelling evidence to suggest that any one regimen performed superiorly, principles of responsible antibiotic use generally recommend the highest dose for the shortest duration of time to reduce the risk of antibiotic resistance. Therefore, a 7-day regimen of 500/500 mg or 500/400 mg of amoxicillin and metronidazole would be most appropriate.

Draft Genome Sequence of Tetzosporium hominis VT-49 gen. nov., sp. nov., Isolated from the Dental Decay Plaque of a Patient with Periodontitis.

Author(s): Tetz, George; Tetz, Victor

Source: Genome announcements; Jan 2018; vol. 6 (no. 4)

Publication Type(s): Journal Article

Available at Genome announcements - from Europe PubMed Central - Open Access

Abstract: Here, we report the draft genome sequence of Tetzosporium hominis VT-49 gen. nov., sp. nov., isolated from the dental plaque of a patient with severe periodontal disease. The draft genome sequence was 2,780,751 bp in length with a 43.3% G+C content. We detected 3,001 genes, which are predicted to encode proteins that regulate both virulence and antibiotic resistance.

Transient bacteremia induced by dental cleaning is not associated with infection of central venous catheters in patients with cancer.

Author(s): Usmani, Saad; Choquette, Linda; Bona, Robert; Feinn, Richard; Shahid, Zainab;

Source: Oral surgery, oral medicine, oral pathology and oral radiology; Jan 2018

Publication Type(s): Journal Article

Abstract:OBJECTIVEThe aim of this study was to determine the incidence of bacteremia resulting from dental cleaning and of subsequent established bloodstream infection (BSI) caused by oral microorganisms in patients with cancer with central venous catheters (CVCs).STUDY DESIGNTwenty-six patients with cancer with CVCs and absolute neutrophil count over 1000 cells/μL received dental cleaning without antibiotic prophylaxis. Periodontal status was assessed at baseline by using the Periodontal Screening and Recording (PSR) score. Blood cultures were drawn via the CVCs at baseline, 20 minutes into cleaning, and 30 minutes and 24 hours after cleaning. Medical records were monitored for 6 months.RESULTSBaseline blood culture results were negative in 25 patients. Nine of 25 patients (36%) had positive blood culture 20 minutes into cleaning, all associated with at least 1 microorganism typically found in the mouth. These 9 patients had significantly higher mean PSR score (3.22) compared with the other 16 (2.56; P = .035). These expected bacteremias did not persist, with blood culture results (0/25) at 30 minutes and 24 hours after cleaning showing no positivity (P = .001). There were no cases of CVC-related infection or BSI attributable to dental cleaning.CONCLUSIONSBacteremia resulting from dental cleaning is transient and unlikely to cause CVC-related infection or BSI in patients with absolute neutrophil count greater than 1000 cells/μL.

Acute periprosthetic joint infection due to Fusobacterium nucleatum in a non-immunocompromised patient. Failure using a Debridement, Antibiotics + Implant retention approach.

Author(s): Corona, Pablo S; Lung, Mayli; Rodriguez-Pardo, Dolors; Pigrau, Carles; Soldado, Francisco

Source: Anaerobe; Jan 2018; vol. 49 ; p. 116-120

Publication Type(s): Journal Article

Abstract: Fusobacterium nucleatum is an obligately anaerobic gram-negative rod, a component of the microbiome of the oropharynx and the gastrointestinal and urogenital tracts, causing an array of human infections which often include periodontal pathologies. As far as we know, there are no previous publications about acute periprosthetic joint infection due to Fusobacterium sp.; we report the first case in the medical literature of an aggressive, acute knee prosthetic infection due to F. nucleatum in a non-immunocompromised patient, unsuccessfully treated with a DAIR approach (Debridement + Antibiotics + Implant Retention).

Dental-related head and neck oncology

Oral and Dental Health in Head and Neck Cancer Patients.

Author(s): Epstein, Joel B; Barasch, Andrei

Source: Cancer treatment and research; 2018; vol. 174 ; p. 43-57

Publication Type(s): Journal Article

Abstract:A diagnosis of head and neck cancer (HNC) is typically followed by therapy that is associated with immediate and long-lasting toxic consequences. HNC patients' oral health needs may be complex and are best addressed in multidisciplinary collaborative teams including surgical, medical, and radiation oncologists, dental providers, nutrition, speech/swallow specialists, and physical therapists. Oral health maintenance also requires patient compliance and caregiver support. The role of dental providers begins prior to cancer diagnosis and continues through survivorship. This includes oral screening and health maintenance, management of common oral complications such as mucositis, pain, infection, salivary dysfunction, altered taste, and dental decay, as well as complex issues that include soft tissue fibrosis, osteoradionecrosis of the jaw, dysphagia, and recurrent/new primary malignancies. As the number of potential therapeutic interventions for HNC increase, so do the spectrum of side effects affecting the oral cavity, oropharynx, and dentition. Specific approaches to oral care must be tailored to the idiosyncrasies of the patient and his/her therapy and condition. Oral and dental care is impacted by the patient's oral and dental status prior to cancer therapy, as well as the specific cancer type, location, stage, and its treatment and potential comorbid conditions. Communication between the dental professional and the oncology team is required for appropriate therapy and is best accomplished by integrated healthcare teams.

Odontoid-sparing transnasal approach for drainage of craniocervical epidural abscess; a novel technique and review of the literature

Author(s): Shawky Abdelgawaad A.; Kellner G.; Ezzati A.; Elnady B.

Source: Spine Journal; 2018

Publication Type(s): Article In Press

Abstract: Background Context: Surgical approaches to the craniovertebral junction (CVJ) are challenging. Available approaches include posterior, transoral, endonasal, and anterior extended retropharyngeal approach. Resection of the odontoid process is necessary to gain access to the pathology posterior to it. The resultant cranio-atlanto-axial instability usually necessitates subsequent posterior stabilization. Purpose: To describe a new odontoid-sparing approach to the spinal canal at the CVJ. This dens-sparing approach preserves occipito-atlanto-axial stability and avoids the need for occipitocervical stabilization that adds to the extent of surgery and its associated morbidity and mortality. Study Design: Describing a novel technique and reporting two cases. Patient Sample: Two patients that presented with infection at the CVJ with a retro-odontoid epidural abscess were operated on. Outcome Measures: Self-reported measures: visual analog scale for neck pain. Physiologic measures: plain x-rays (anteroposterior and lateral views), magnetic resonance imaging with contrast, computed tomography scan, C-reactive protein, and leukocytic count. Functional measures: dynamic flexion-extension views of the cervical spine. Methods: Two patients were operated on using a combined endoscopic transnasal-transoral approach for drainage of a retro-odontoid epidural abscess and debridement without dens resection. A 4-mm, 30-degree rigid endoscope was used. Preoperative clinical and neurologic status was evaluated. The follow-up period was 12 months. The study received no funding from any organization. None of the authors has any relevant financial disclosures or conflict of interest. Results: Both patients improved clinically after the endonasal transoral abscess drainage. Follow-up contrast magnetic resonance imaging showed complete resolution of the abscess after 3 weeks. Culture-sensitivity tests were positive for

Staphylococcus aureus in one patient. Antibiotic therapy with clindamycin and flucloxacillin was continued for 12 weeks postoperatively. There were no intraoperative or postoperative complications. There was no need for posterior occipitocervical stabilization in both cases. Conclusion: This represents the first clinical report of accessing the spinal canal at the CVJ without resection of the odontoid or the anterior arch of the atlas. The addition of endoscopic-assisted supra-dental approach to the transoral one improved visibility, and allowed access to the most cranial part of spinal canal without the need for dens resection, a procedure that significantly compromises C0-1-2 stability necessitating stabilization. This novel odontoid-sparing approach showed a favorable outcome in our first two cases with retro-odontoid abscess; however, it would likely pose a high risk in other pathologies including tumors.

mDixon-based texture analysis of an intraosseous lipoma: a case report and current review for the dental clinician.

Author(s): Lee, Kyung Mi; Kim, Hyug-Gi; Lee, Yeon-Hee; Kim, Eui Jong

Source: Oral surgery, oral medicine, oral pathology and oral radiology; Mar 2018; vol. 125 (no. 3); p. e67

Publication Type(s): Journal Article

Abstract: An intraosseous lipoma is a rare histologic variant of lipoma, accounting for only 0.1% of all primary bone tumors. This may not be the actual incidence because most of these lesions are frequently asymptomatic, but imaging modalities, such as computed tomography or magnetic resonance imaging (MRI) seem to have increased the detection rate. Lipoma occasionally undergoes osseous metaplasia and becomes an osseous lipoma. Although there are numerous papers discussing intraosseous lipoma and some authors have tried to differentiate lipomas from osseous lipomas, there is still a great deal of confusion with regard to characteristic radiologic features and the use of terms. Use of the mDixon sequence in MRI could be an effective, noninvasive method of lesion detection and differential diagnosis. Texture analysis is a useful technique for capturing intratumoral characteristics. We report what is possibly the first use of the mDixon MRI sequence in the measurement of tumoral texture in a case of the extremely rare inferior nasal turbinate intraosseous lipoma in a 58-year-old female. We conclude that mDixon and texture analysis are helpful methods for differentiating intraosseous lipomas from other masses and confirming the benign characteristics of lipoma. Our review of head and neck intraosseous lipoma could be of particular interest to head and neck surgeons and dental clinicians.

Long-term success of dental implants in patients with head and neck cancer after radiation therapy.

Author(s): Curi, M M; Condezo, A F B; Ribeiro, K D C B; Cardoso, C L

Source: International journal of oral and maxillofacial surgery; Feb 2018

Publication Type(s): Journal Article

Abstract: The purpose of this study was to analyze the long-term success and factors potentially influencing the success of dental implants placed in patients with head and neck cancer who underwent radiation therapy with a minimum total dose of 50Gy during the years 1995-2010. Thirty-five patients (169 dental implants) were included in this study. Data on demographic characteristics, tumour type, radiation therapy, implant sites, implant dimensions, and hyperbaric oxygen therapy (HBOT) were obtained from the medical records and analyzed. Implant survival was estimated using Kaplan-Meier survival curves. Seventy-nine dental implants were placed in the maxilla and 90 in the mandible. The mean follow-up after implant installation was 7.4 years (range 0.3-14.7 years). The overall 5-year survival rate for all implants was 92.9%. Sex ($P<0.001$) and the mode of radiation therapy delivery ($P=0.005$) had a statistically significant influence on implant survival. Age, time of

implantation after irradiation, implant brand and dimensions, and HBOT had no statistically significant influence on implant survival. Osseointegrated dental implants can be used successfully in the oral rehabilitation of patients with head and neck cancer with a history of radiation therapy. Risk factors such as sex and the mode of radiation therapy delivery can affect implant survival.

Diagnostic X-Ray Exposure and Thyroid Cancer Risk: Systematic Review and Meta-Analysis.

Author(s): Han, Mi Ah; Kim, Jin Hwa

Source: Thyroid : official journal of the American Thyroid Association; Feb 2018; vol. 28 (no. 2); p. 220-228

Publication Type(s): Journal Article

Abstract:BACKGROUNDRadiation exposure is a well-known risk factor for thyroid cancer. However, the specific effects of diagnostic radiation exposure on thyroid cancer risk are controversial. The purpose of this study was to perform a systematic review and meta-analysis to assess the effects of diagnostic radiation exposure on thyroid cancer risk.METHODSThe PubMed and EMBASE databases were searched to identify eligible studies. Summary odds ratio (OR) estimates and confidence intervals (CIs) were used to compute the risk of thyroid cancer using fixed- and random-effects models. Subgroup and sensitivity analyses were performed to evaluate the potential heterogeneity.RESULTSNine studies from 12 publications were included in the meta-analysis. Overall exposure to diagnostic radiation exposure was associated with a significantly increased thyroid cancer risk (OR = 1.52 [CI 1.13-2.04]). The subgroup and sensitivity analyses revealed similar results. By type of exposure, exposure to computed tomography scans (OR = 1.46 [CI 1.27-1.68]) or dental x-rays (OR = 1.69 [CI 1.17-2.44]) were associated with an increased thyroid cancer risk. Head and neck (OR = 1.31 [CI 1.02-1.69]) and chest (OR = 1.71 [CI 1.09-2.69]) exposure to diagnostic radiation was associated with an increased thyroid cancer risk.CONCLUSIONSThe results of this meta-analysis indicate that diagnostic radiation exposure is associated with an increased thyroid cancer risk. Therefore, to the extent that it will not compromise the information being sought, radiation exposure to the thyroid should be minimized during diagnostic examinations.

Targeted cancer therapies: Oral health care implications.

Author(s): Georgakopoulou, Eleni; Stebbing, Justin; Scully, Crispian

Source: Journal of the American Dental Association (1939); Feb 2018; vol. 149 (no. 2); p. 100-111

Publication Type(s): Journal Article

Abstract:BACKGROUNDTargeted treatments have been incorporated into oncology protocols, often with more traditional therapies, and are not totally free of adverse reactions, some of which affect the orofacial region.METHODSThe authors searched PubMed, the Cochrane Library, and the US Food and Drug Administration Approved Drug Products database to identify reported adverse effects of targeted agents in the orofacial region as well as other implications in oral health care. Their principal focus was the relatively newer category of molecularly targeted drugs which are called small molecules (SMs).RESULTSThe authors identified several categories of SMs and biological agents (for example, monoclonal antibodies) with adverse effects in the orofacial region. The oral and perioral regions are also fields for which there are therapeutic applications for targeted therapies, particularly to treat malignant neoplasms such as head and neck cancers.CONCLUSIONSSMs are the most rapidly growing group of targeted cancer treatments. Patients receiving SMs and other targeted antineoplastic agents may require oral medicine advice and special-care dentistry.PRACTICAL IMPLICATIONSIn this narrative review, the authors focus mainly on the orofacial adverse effects of targeted cancer therapies and outline many of the agents that are in use so the dentally focused reader can familiarize themselves with these adverse effects and agents.

Pre-Radiation dental considerations and management for head and neck cancer patients.

Author(s): Kufta, Kenneth; Forman, Michael; Swisher-McClure, Samuel; Sollecito, Thomas P;

Source: Oral oncology; Jan 2018; vol. 76 ; p. 42-51

Publication Type(s): Journal Article Review

Abstract: Treatment of head and neck cancer (HNC) is accompanied by a high rate of morbidity, and complications can have a lifelong, profound impact on both patients and caregivers. Radiation-related injury to the hard and soft tissue of the head and neck can significantly decrease patients' quality of life. The purpose of this study is to provide patent-specific guidelines for managing the oral health and related side effects of HNC patients treated with radiation therapy. Based on reviewed articles retrieved on the PubMed database, guidelines for management of the oral health of this patient population were organized into three separate categories: cancer, patient, and dentition. The location, type, and staging of the cancer, along with the radiation used to treat the cancer significantly impact dental treatment. Several unique patient characteristics such as motivation, presence of support system, socioeconomic status, nutrition, and race have all been found to affect outcomes. Dental disease and available supportive dental management was found to significantly impact treatment and quality of life in this patient population. By comprehensively assessing unique cancer, patient, and dental-related factors, this review provides individualized evidence-based guidelines on the proper management of this complex and vulnerable patient population.

A systematic review of dental disease management in cancer patients.

Author(s): Hong, Catherine H L; Hu, Shijia; Haverman, Thijs; Stokman, Monique; Napeñas, Joel J

Source: Supportive care in cancer : official journal of the Multinational Association of Supportive Care in Cancer; Jan 2018; vol. 26 (no. 1); p. 155-174

Publication Type(s): Journal Article

Abstract:INTRODUCTIONThis systematic review aims to update on the prevalence of odontogenic-related infections and the efficacy of dental strategies in preventing dental-related complications in cancer patients since the 2010 systematic review.REVIEW METHODA literature search was conducted in the databases MEDLINE/PubMed and EMBASE for articles published between 1 January 2009 and 30 June 2016. Each study was assessed by 2 reviewers and the body of evidence for each intervention was assigned an evidence level.RESULTSAfter examination of the abstracts and full-text articles, 59 articles satisfied the inclusion criteria. The weighted prevalence of dental infections and pericoronitis during cancer therapy was 5.4 and 5.3%, respectively. The frequency of dental-related infections during intensive chemotherapy after complete, partial, and minimal pre-cancer dental evaluation/treatment protocols ranged from 0 to 4%. Protocols involving third molars extractions had the highest complications (40%).CONCLUSIONSIn view of the low prevalence of infections and the potential for complications after third molar extractions, it is suggested that partial dental evaluation/treatment protocols prior to intensive chemotherapy; whereby minor caries (within dentin), asymptomatic third molars or asymptomatic teeth without excessive probing depth (<8 mm), mobility (mobility I or II) or with periapical lesions of <5 mm were observed; is a viable option when there is insufficient time for complete dental evaluation/treatment protocols. The use of chlorhexidine, fluoride mouth rinses as well as composite resin, resin-modified glass ionomer cement (GIC), and amalgam restorations over conventional GIC in post head and neck radiation patients who are compliant fluoride users is recommended.

Dental Treatment Planning for the Patient with Oral Cancer.

Author(s): Levi, Lauren E; Lalla, Rajesh V

Source: Dental clinics of North America; Jan 2018; vol. 62 (no. 1); p. 121-130

Publication Type(s): Journal Article Review

Abstract: Oral cancer therapy is associated with a multitude of head and neck sequelae that includes, but is not limited to, hyposalivation, increased risk for dental caries, osteoradionecrosis of the jaw, radiation fibrosis syndrome, mucositis, chemotherapy-induced neuropathy, dysgeusia, dysphagia, mucosal lesions, trismus, and infections. Preparing a comprehensive treatment plan for patients undergoing cancer therapy is essential to help minimize their risks for developing these oral and dental complications. In addition, dentists must take into account a patient's ongoing oncologic therapy for those patients who present to the dentist while concurrently receiving cancer treatment.

Oral health impact profile of head and neck cancer patients after or before oncologic treatment: an observational analytic case-control study.

Author(s): Stuani, Vitor T; Santos, Paulo Sérgio S; Damante, Carla A; Zangrando, Mariana S R;

Source: Supportive care in cancer : official journal of the Multinational Association of Supportive Care in Cancer; Jan 2018

Publication Type(s): Journal Article

Abstract:PURPOSEThe objective of this study was to investigate the impact of oral health on the quality of life of patients with head and neck cancer (HNC) before and after oncologic treatment.METHODSForty cancer-free individuals (Cf group) and 40 HNC patients (Hnc group) were included in this study. Hnc group was also divided into two subgroups: Hnc 1 (pre-cancer therapy, n = 20) and Hnc 2 (post-cancer therapy, n = 20). Participants were asked to complete a short form of Oral Health Impact Profile (OHIP-14). The results were statistically analyzed with the multivariate analysis of variance with post-hoc Scheffé multiple comparison.RESULTSIt was observed a moderate impact on the quality of life on HNC patients, with values on Hnc 2 group significantly higher in the functional limitation when compared to the Hnc 1 group ($p < 0.05$). When compared to the Cf group, the values found on Hnc group were higher on functional limitation ($p < 0.01$) and at the total score ($p < 0.05$), whereas Hnc 2 group had significant superior values on functional limitation ($p < 0.01$), physical pain ($p < 0.05$), and total score ($p < 0.01$) CONCLUSION: These results show that there is an oral impairment that depreciates the quality of life of patients with an experience of HNC, principally after treatment, indicating the importance of the inclusion of professionals responsible for dental and oral care with the oncologic team to monitor the oral condition of these patients.

Dental implants

Implant Mandibular Overdentures Retained by Immediately Loaded Implants: A 1-Year Randomized Trial Comparing Patient-Based Outcomes Between Mini Dental Implants and Standard-Sized Implants.

Author(s): Zygogiannis, Kostas; Aartman, Irene Ha; Wismeijer, Daniel

Source: The International journal of oral & maxillofacial implants; ; vol. 33 (no. 1); p. 197-205

Publication Type(s): Journal Article

Abstract:PURPOSEThe aim of this 1-year randomized trial was to determine the stability and the magnitude of the effect of converting patients' conventional mandibular dentures to implant overdentures (IODs) on their satisfaction and oral health-related quality of life (OHRQoL). The IODs were retained either with two immediately loaded interconnected standard-diameter implants or with four immediately loaded mini dental implants (MDIs).MATERIALS AND METHODSFifty completely edentulous subjects complaining about insufficient retention of their mandibular dentures were randomly assigned to two groups; 25 patients received IODs retained with four MDIs and 25 patients received IODs retained with two standard-sized tissue level (STL) interconnected

implants. All IODs were opposed by conventional maxillary dentures. Patients rated their satisfaction on a 100-mm visual analog scale (VAS) and their quality of life on a denture-specific short version of the oral health impact profile (OHIP-20) before assignment, and after 3 and 12 months. A two-way mixed analysis of variance (ANOVA) was conducted to assess the change in time and its interaction with treatment mode on patients' overall satisfaction ratings, the total OHIP-20, and their specific domain scores.RESULTSImmediate loading was possible for all the patients who received the MDIs. By contrast, the immediate loading protocol could be followed for only 15 of the patients allocated to the STL implant group. For the remaining patients, a delayed loading protocol was applied. There was a significant improvement in patients' general satisfaction between baseline and 3 months and between baseline and 12 months postoperatively ($F_{2,44} = 81.006$, $P < .001$). This increase did not differ between the treatment groups ($F_{4,90} = 1.838$, $P = .128$). The results also showed a decrease in mean overall OHIP score ($F_{2,43} = 46.863$, $P < .001$) between baseline and 3 months and between baseline and 12 months postoperatively, indicating a higher level of OHRQoL. In addition, patients scored lower 3 and 12 months after treatment than at baseline for all seven domains. This decrease did not differ between the treatment groups ($F_{4,88} = 0.608$, $P = .658$).CONCLUSIONThe results suggested that in terms of patient-based outcomes, mandibular overdentures retained by immediately loaded MDIs can offer an improvement of equal magnitude with that achieved by overdentures retained by standard-sized implants.

Effects of Local Drug and Chemical Compound Delivery on Bone Regeneration Around Dental Implants in Animal Models: A Systematic Review and Meta-Analysis.

Author(s): Alenezi, Ali; Chrcanovic, Bruno; Wennerberg, Ann

Source: The International journal of oral & maxillofacial implants; ; vol. 33 (no. 1); p. e1

Publication Type(s): Journal Article

Abstract:PURPOSEOne of the suggested methods for enhancing osseointegration is the local application of drug agents around implant surfaces. The aim of this review was to evaluate the methods most commonly used for local drug and chemical compound delivery to implant sites and assess their influence on osseointegration.MATERIALS AND METHODSAn electronic search was undertaken in three databases (PubMed, Scopus, Embase). The search was limited to animal experiments using endosseous implants combined with local drug delivery systems. Meta-analyses were performed for the outcome bone-to-implant contact (BIC).RESULTSSixty-one studies met the inclusion criteria. Calcium phosphate (CaP), bisphosphonates (BPs), and bone morphogenetic proteins (BMPs) were the most commonly used chemical compounds. There were two main methods for local drug delivery at the bone-implant interface: (1) directly from an implant surface by coating or immobilizing techniques, and (2) the local application of drugs to the implant site, using carriers. There was a statistically significant increase in BIC for both local drug delivery methods ($P = .02$ and $P < .0001$, respectively) compared with the control methods. There was a statistically significant increase in BIC when CaP ($P = .0001$) and BMPs ($P = .02$) were either coating implants or were delivered to the implant site, in comparison to when drugs were not used. The difference was not significant for the use of BPs ($P = .15$).CONCLUSIONIt is suggested that the use of local chemical compound delivery systems around implants could significantly improve implant osseointegration in animal models. It is a matter of debate whether these in vivo results might have some significant effect in the human clinical setting in the long term.

Osseointegration of zirconia dental implants in animal investigations: A systematic review and meta-analysis.

Author(s): Pieralli, Stefano; Kohal, Ralf-Joachim; Lopez Hernandez, Emilia; Doerken, Sam;

Source: Dental materials : official publication of the Academy of Dental Materials; Feb 2018; vol. 34 (no. 2); p. 171-182

Publication Type(s): Journal Article Review

Abstract:OBJECTIVETo determine the osseointegration rate of zirconium dioxide (ZrO2) dental implants in preclinical investigations.DATAData on the osseointegration rate was extracted considering the bone to implant contact (BIC), removal torque analysis (RTQ) and push-in tests. Meta analyses were conducted using multilevel multivariable mixed-effects linear regression models. The Šidák method was used in case of multiple testing.SOURCESAn electronic screening of the literature (MEDLINE/Pubmed, Cochrane Library and Embase) and a supplementary manual search were performed. Animal investigations with a minimum sample size of 3 units evaluating implants made of zirconia (ZrO2) or its composites (ZrO2>50vol.%) were included.STUDY SELECTIONThe search provided 4577 articles, and finally 54 investigations were included and analyzed. Fifty-two studies included implants made from zirconia, 4 zirconia composite implants and 37 titanium implants. In total, 3435 implants were installed in 954 animals.CONCLUSIONSNo significant influence of the evaluated bulk materials on the outcomes of interest could be detected. When comparing different animal models, significant differences for the evaluated variables could be found. These results might be of interest for the design of further animal investigations.

Low-level laser therapy with 940 nm diode laser on stability of dental implants: a randomized controlled clinical trial.

Author(s): Torkzaban, Parviz; Kasraei, Shahin; Torabi, Sara; Farhadian, Maryam

Source: Lasers in medical science; Feb 2018; vol. 33 (no. 2); p. 287-293

Publication Type(s): Journal Article

Abstract: Low-level laser therapy (LLLT) is a non-invasive modality to promote osteoblastic activity and tissue healing. The aim of this study was to evaluate the efficacy of LLLT for improvement of dental implant stability. This randomized controlled clinical trial was performed on 80 dental implants placed in 19 patients. Implants were randomly divided into two groups (n = 40). Seven sessions of LLLT (940 nm diode laser) were scheduled for the test group implants during 2 weeks. Laser was irradiated to the buccal and palatal sides. The same procedure was performed for the control group implants with laser hand piece in "off" mode. Implant stability was measured by Osstell Mentor device in implant stability quotient (ISQ) value immediately after surgery and 10 days and 3, 6, and 12 weeks later. Repeated measures ANOVA was used to compare the mean ISQ values (implant stability) in the test and control groups. Statistical test revealed no significant difference in the mean values of implant stability between the test and control groups over time ($P = 0.557$). Although the mean values of implant stability changed significantly in both groups over time ($P < 0.05$). Although the trend of reduction in stability was slower in the laser group in the first weeks and increased from the 6th to 12th week, LLLT had no significant effect on dental implant stability.

Survival and Complications of Single Dental Implants in the Edentulous Mandible Following Immediate or Delayed Loading: A Randomized Controlled Clinical Trial.

Author(s): Kern, M; Att, W; Fritzer, E; Kappel, S; Luthardt, R G; Mundt, T; Reissmann, D R; Rädel, M

Source: Journal of dental research; Feb 2018; vol. 97 (no. 2); p. 163-170

Publication Type(s): Journal Article

Abstract: It was the aim of this 24-mo randomized controlled clinical trial to investigate whether the survival of a single median implant placed in the edentulous mandible to retain a complete denture is not compromised by immediate loading. Secondary outcomes were differences in prosthetic complications between the loading principles. Each of the 158 patients who received an implant was

randomly assigned to the immediate loading group (n = 81) or the delayed loading group (n = 77). Recall visits were performed 1 mo after implant placement (for only the delayed loading group) and 1, 4, 12, and 24 mo after implant loading. Nine implants failed in the immediate loading group, all within the first 3 mo of implant loading, and 1 implant failed in the delayed loading group prior to loading. Noninferiority of implant survival of the immediate loading group, as compared with the delayed loading group, could not be shown (P = 0.81). Consistent with this result, a secondary analysis with Fisher exact test revealed that the observed difference in implant survival between the treatment groups was indeed statistically significant (P = 0.019). The most frequent prosthetic complications and maintenance interventions in the mandible were retention adjustments, denture fractures, pressure sores, and matrix exchanges. There was only 1 statistically significant difference between the groups regarding the parameter "fracture of the denture base in the ball attachment area" (P = 0.007). The results indicate that immediate loading of a single implant in the edentulous mandible reveals inferior survival than that of delayed loading and therefore should be considered only in exceptional cases (German Clinical Trials Register: DRKS00003730).

Re-osseointegration of Dental Implants After Periimplantitis Treatments: A Systematic Review.

Author(s): Madi, Marwa; Htet, Moe; Zakaria, Osama; Alagl, Adel; Kasugai, Shohei

Source: Implant dentistry; Feb 2018; vol. 27 (no. 1); p. 101-110

Publication Type(s): Journal Article

Abstract:PURPOSEThis review considers possible surgical treatment modalities for induced periimplantitis to regain re-osseointegration as reported in the recent literature.MATERIALS AND METHODSElectronic searches in MEDLINE/PubMed and Google Scholar databases were performed on experimental studies considering induced periimplantitis and attempts to achieve re-osseointegration from 2003 up to December 2016. Conflicts about articles were solved by authors' discussion.RESULTSA total of 15 studies of 159 were finally included in the review.DISCUSSIONVarious implant surface decontamination techniques chemical and/or mechanical have been used either alone or simultaneously with/without guided bone regeneration. Despite the access-flap surgery, it was observed that application of single decontamination measure either chemical or mechanical was not adequate to provide a better treatment outcome. Laser application such as CO2, diode, and Er: YAG has been a new treatment approach used for periimplantitis treatment. Er: YAG laser had showed no implant surface alteration and provided favorable environment for re-osseointegration.CONCLUSIONPromising results were observed in the studies that used combination of bone substitutes together with guided bone regeneration for the regenerative therapy. Regarding implant surfaces, better re-osseointegration was observed with rough implant surfaces rather than smooth ones.

Comparison of the use of titanium-zirconium alloy and titanium alloy in dental implants: A systematic review and meta-analysis.

Author(s): Cruz, Ronaldo; Lemos, Cleidiel Aparecido Araujo; Oliveira, Hiskell Francine Fernandes

Source: The Journal of oral implantology; Feb 2018

Publication Type(s): Journal Article

Abstract: The aim of this study was to compare the values of bone-implant contact (BIC) and removal torque (RTQ) reported in different animal studies for titanium-zirconium and titanium dental implants. This review has been registered at PROSPERO under number CRD42016047745. An electronic search for data published up until November 2017 was undertaken using the PubMed/Medline, Embase and The Cochrane Library databases. Eligibility criteria included in vivo studies, comparisons between Ti and TiZr implants in the same study and studies published in English, which evaluated to BIC and RT. After inclusion criteria eight studies were assessed for

eligibility. Of eight studies, seven analyzed BIC outcome and three analyzed RTQ outcome. Among such studies, 6 studies were considered for meta-analysis of quantitative for BIC and 2 studies for RTQ. There was no significant difference for BIC analysis (P = 0.89; RR: -0.21; 95%, CI: -3.14 to 2.72). The heterogeneity of the primary outcome studies was considered low (7.19; P = 0.21; I2: 30%). However, the RTQ analysis showed different results favoring the TiZr dental implants (P = 0.001; RR: 23.62; 95%, CI: 9.15 to 38.10). Low heterogeneity was observed for RTQ (Chi2: 1.25; P = 0.26; I2: 20%). Within the limitations of this study, there was no difference between TiZr and Ti alloys implants in terms of BIC. However, TiZr implants had higher RTQ than Ti alloys.

Short dental implants as compared to maxillary sinus augmentation procedure for the rehabilitation of edentulous posterior maxilla: Three-year results of a randomized clinical study.

Author(s): Taschieri, Silvio; Lolato, Alessandra; Testori, Tiziano; Francetti, Luca; Del Fabbro, Massimo

Source: Clinical implant dentistry and related research; Feb 2018; vol. 20 (no. 1); p. 9-20

Publication Type(s): Journal Article

Abstract:BACKGROUNDSeveral treatment options exist for the implant-supported rehabilitation of edentulous posterior maxilla.PURPOSETo compare maxillary sinus floor augmentation associated to standard length implants, with direct placement of implants of reduced length in the available residual bone.MATERIALS AND METHODSPatients with edentulous posterior maxilla and a residual height of 4-7 mm were randomly allocated to the test (short implants [SIs], 6.5 to 8.5mm long) or the control (sinus augmentation [SA] and implants ≥10mm long) group. Anorganic bovine bone was the grafting material for the control group. In both groups pure platelet-rich plasma was used to bioactivate implant surface prior to insertion. Implant and prosthesis survival, clinical variables, radiographic bone level change, quality of life, and patient satisfaction were assessed.RESULTSTwenty-five patients were treated in the control group (58 standard length implants) and 27 in the test group (42 SIs). After 3 years of follow-up no implant failure and biological or mechanical complications were recorded. Marginal bone loss, soft tissue, and oral hygiene parameters were similar in the 2 groups at both 1 and 3 years' follow-up. Postoperative pain, swelling and other symptoms and daily activities were better in the SIs group than in the SA group, while patients' satisfaction after 1 year was similar.CONCLUSIONSIn spite of comparable medium-term clinical and radiographic outcomes, when the residual ridge height is sufficient for a safe placement, SIs may be preferred due to simplified protocol, less invasiveness, shorter treatment time, and reduced postoperative discomfort as compared to SA.

Comparing Short Dental Implants to Standard Dental Implants: Protocol for a Systematic Review.

Author(s): Rokn, Amir Reza; Keshtkar, Abbasali; Monzavi, Abbas; Hashemi, Kazem; Bitaraf, Tahereh

Source: JMIR research protocols; Jan 2018; vol. 7 (no. 1); p. e16

Publication Type(s): Journal Article

Available at JMIR research protocols - from Europe PubMed Central - Open Access

Abstract:BACKGROUNDShort dental implants have been proposed as a simpler, cheaper, and faster alternative for the rehabilitation of atrophic edentulous areas to avoid the disadvantages of surgical techniques for increasing bone volume.OBJECTIVEThis review will compare short implants (4 to 8 mm) to standard implants (larger than 8 mm) in edentulous jaws, evaluating on the basis of marginal bone loss (MBL), survival rate, complications, and prosthesis failure.METHODSWe will electronically search for randomized controlled trials comparing short dental implants to standard dental implants in the following databases: PubMed, Web of Science, EMBASE, Scopus, the Cochrane Central Register of Controlled Trials, and ClinicalTrials.gov with English language restrictions. We will manually search the reference lists of relevant reviews and the included articles in this review. The

following journals will also be searched: European Journal of Oral Implantology, Clinical Oral Implants Research, and Clinical Implant Dentistry and Related Research. Two reviewers will independently perform the study selection, data extraction and quality assessment (using the Cochrane Collaboration tool) of included studies. All meta-analysis procedures including appropriate effect size combination, sub-group analysis, meta-regression, assessing publication or reporting bias will be performed using Stata (Statacorp, TEXAS) version 12.1.RESULTSShort implant effectiveness will be assessed using the mean difference of MBL in terms of weighted mean difference (WMD) and standardized mean difference (SMD) using Cohen's method. The combined effect size measures in addition to the related 95% confidence intervals will be estimated by a fixed effect model. The heterogeneity of the related effect size will be assessed using a Q Cochrane test and I2 measure. The MBL will be presented by a standardized mean difference with a 95% confidence interval. The survival rate of implants, prostheses failures, and complications will be reported using a risk ratio at 95% confidence interval (P<.05).CONCLUSIONSThe present protocol illustrates an appropriate method to perform the systematic review and ensures transparency for the completed review. The results will be published in a peer-reviewed journal and social networks. In addition, an ethics approval is not considered necessary.TRIAL REGISTRATIONPROSPERO registration number: CRD42016048363; https://www.crd.york.ac.uk/PROSPERO/display_record.asp?ID=CRD42016048363 (Archived by WebCite at http://www.webcitation.org/6wZ7Fntry).

Clinical and patient-reported outcomes of zirconia-based implant fixed dental prostheses: Results of a prospective case series 5 years after implant placement.

Author(s): Spies, Benedikt Christopher; Witkowski, Siegbert; Vach, Kirstin; Kohal, Ralf-Joachim

Source: Clinical oral implants research; Jan 2018; vol. 29 (no. 1); p. 91-99

Publication Type(s): Journal Article

Abstract:OBJECTIVETo evaluate the clinical and patient-reported outcome of all-ceramic zirconia implant supported fixed dental prostheses (FDPs) 5 years after implant installation.MATERIALS AND METHODSThirteen patients were treated with two terminally placed one-piece zirconia implants for a three-unit FDP each. The FDPs consisted of a CAD/CAM-fabricated zirconia framework over-pressed with a fluor-apatite veneering ceramic and were adhesively cemented. Survival and success were assessed by applying modified US Public Health Service (USPHS) criteria and preparation of Kaplan-Meier (KM) plots. Alpha and Bravo ratings were accepted for success (among others including small area veneer chippings and occlusal roughness), whereas Charlie ratings allowing for intra-oral correction (e.g., polishing) were accepted for survival. Furthermore, patient-reported outcome measures (PROMs) were analyzed with the help of visual analogue scales (VAS). Wilcoxon matched-pairs signed-rank test (USPHS criteria) and linear mixed models (PROMs) were used to evaluate time effects on response variables.RESULTSAll patients were available 61.8 ± 1.1 months after implant installation (53.6 ± 3.1 months after final prosthesis insertion). FDP survival was 100%. Significant incidence of veneer chipping (p = .0096) and occlusal roughness (p = .0019) was observed. Charlie rated extent of both phenomena resulted in a KM success estimate of 38.5% (95% CI: 14.1%-62.8%; seven FDPs with obvious roughness, three of them with extended veneer chipping). Compared with the pre-treatment assessments (30%-81% of satisfaction), all surveys at prosthetic delivery showed significantly improved VAS scores (66%-93%; p ≤ .038), except for speech (p = .341). Concerning function, esthetics and self-esteem, no decrease in satisfaction could be observed until the end of follow-up (90%-96%; p ≥ .057), whereas perception of sense (92%) and speech (95%) increased over time (p ≤ .030). Occurrence of technical complications did not correlate with patient satisfaction.CONCLUSIONSBi-layered FDPs made from zirconia/fluor-apatite highly satisfied patients but showed significant incidence of technical complications.

Surface characteristics of dental implants: A review.

Author(s): Rupp, F; Liang, L; Geis-Gerstorfer, J; Scheideler, L; Hüttig, F

Source: Dental materials : official publication of the Academy of Dental Materials; Jan 2018; vol. 34 (no. 1); p. 40-57

Publication Type(s): Journal Article Review

Abstract:OBJECTIVESDuring the last decades, several changes of paradigm have modified our view on how biomaterials' surface characteristics influence the bioresponse. After becoming aware of the role of a certain microroughness for improved cellular contact and osseointegration of dental titanium implants, the likewise important role of surface energy and wettability was increasingly strengthened. Very recently, synergistic effects of nanoscaled topographical features and hydrophilicity at the implant/bone interface have been reported.METHODSQuestions arise about which surface roughness and wetting data are capable to predict the bioresponse and, ultimately, the clinical performance. Current methods and approaches applied for topographical, wetting and surface energetic analyses are highlighted. Current knowledge of possible mechanisms explaining the influence of roughness and hydrophilicity at the biological interface is presented.RESULTSMost marketed and experimental surfaces are based on commonly available additive or subtractive surface modifying methods such as blasting, etching or anodizing. Different height, spatial, hybrid and functional roughness parameters have been identified as possible candidates able to predict the outcome at hard and soft tissue interfaces. Likewise, hydrophilic implants have been proven to improve the initial blood contact, to support the wound healing and thereby accelerating the osseointegration.SIGNIFICANCEThere is clear relevance for the influence of topographical and wetting characteristics on a macromolecular and cellular level at endosseous implant/biosystem interfaces. However, we are still far away from designing sophisticated implant surfaces with the best possible, selective functionality for each specific tissue or cavity interface. Firstly, because our knowledge of the respective surface related reactions is at best fragmentary. Secondly, because manufacturing of multi-scaled complex surfaces including distinct nanotopographies, wetting properties, and stable cleanliness is still a technical challenge and far away from being reproducibly transferred to implant surfaces.

Osteomyelitis Arising Around Osseointegrated Dental Implants: A Systematic Review.

Author(s): Kellesarian, Sergio V; Javed, Fawad; Romanos, Georgios E

Source: Implant dentistry; Jan 2018

Publication Type(s): Journal Article

Abstract:OBJECTIVEThe past few years have seen a progressive increment in the number of osteomyelitis cases associated with dental implants, raising the interest of a possible role of implant therapy in the development of osteomyelitis. The aim of the present study was to systematically review the association between dental implant therapy and occurrence of osteomyelitis.DATA SOURCESThe focused question addressed was "What is the risk to develop osteomyelitis among patients receiving dental implants?" Indexed databases were searched without language restrictions up to January 2017 using various key words including: "osteomyelitis"; "dental implants"; "osseointegration"; and "risk factors."RESULTSFourteen studies reporting cases of 39 patients who developed osteomyelitis after dental implant placement were identified. Among the 39 patients, 66.6% were women and 28.2% were men. The overall mean age was 60.26 years. Thirty-six patients had osteomyelitis of the mandible; 2 cases were reported in the maxilla, whereas, 1 case reported vertebral osteomyelitis associated with implant therapy.CONCLUSIONThe knowledge of the real impact of osteomyelitis on the outcome of implant therapy and the identification of risk factors associated with this infectious and life-threatening condition are essential for the development of prevention protocols and treatment strategies.

The ability of topical and systemic statins to increase osteogenesis around dental implants: a systematic review of histomorphometric outcomes in animal studies.

Author(s): Moraschini, V; Almeida, D C F; Calasans-Maia, J A; Diuana Calasans-Maia, M

Source: International journal of oral and maxillofacial surgery; Jan 2018

Publication Type(s): Journal Article Review

Abstract: The purpose of this systematic review was to evaluate the quantitative histomorphometric outcomes of animal studies investigating statins as a pro-osteogenic agent to enhance the osseointegration of dental implants. Some animal studies have suggested a beneficial action of statins on bone tissue. Electronic and manual literature searches, without date or language restriction, were performed by two independent review authors up to February 2017. Eligibility criteria included animal trials quantitatively analysing the pro-osteogenic effect of statins on dental implants. The quality of the included studies was assessed using the ARRIVE guidelines. The search and selection process yielded 12 studies, published between 2004 and 2015. The experimental animals models used were rats and dogs. The statins used in the studies were simvastatin and fluvastatin, which were administered locally or systemically, or applied to the implant surface. All of the selected studies showed a statistically significant positive effect of statins on bone formation around implants. The mean quality assessment score (ARRIVE) of the studies was 11.5±2.27 out of a possible total of 25 points. The histomorphometric data from available preclinical studies suggest a positive effect of statins on increasing osteogenesis around dental implants.

Soft tissue volume gain around dental implants using autogenous subepithelial connective tissue grafts harvested from the lateral palate or tuberosity area. A randomized controlled clinical study.

Author(s): Rojo, Ernest; Stroppa, Giorgio; Sanz-Martin, Ignacio; Gonzalez-Martín, Oscar;

Source: Journal of clinical periodontology; Jan 2018

Publication Type(s): Journal Article

Abstract:AIMTo compare the soft tissue volume gain (VG) around single tooth implants with subepithelial connective tissue graft (SCTG) from either the lateral palate (LP) or from the tuberosity area (TA).METHODS32 patients with 36 implants with buccal volume deficiencies were randomly assigned to receive SCTG from LP (control group/CG) or TA (test group/TG). Clinical parameters were recorded and volume gain was evaluated by STL image superimposition of 2 intraoral scans (baseline/BL and 3 months after surgery/FU-3). Descriptive analysis was performed for both groups and for comparisons U Mann Whitney test was used.RESULTSIn terms of VG values, no statistically significant differences were observed except for values at 6 and 7mm apically to the healing abutment which favoured the TG. Mean values were 0.69±0.23mm for CG while TG obtained 0.79±0.10mm (p=0.64). Regarding Keratinized tissue (KT) width statistical significant differences were found favouring TG, which obtained a gain of 0.83±0.61mm compared with 0.22±0.48mm for CG (p=0,009). Pink esthetic scores resulted in mean values of 10.07±2.19 for the CG, while TG obtained 9.15±2.34.CONCLUSIONSBoth procedures were effective in increasing soft tissue volume with no statistically significant differences. A longer follow-up is needed to confirm or refute these results.

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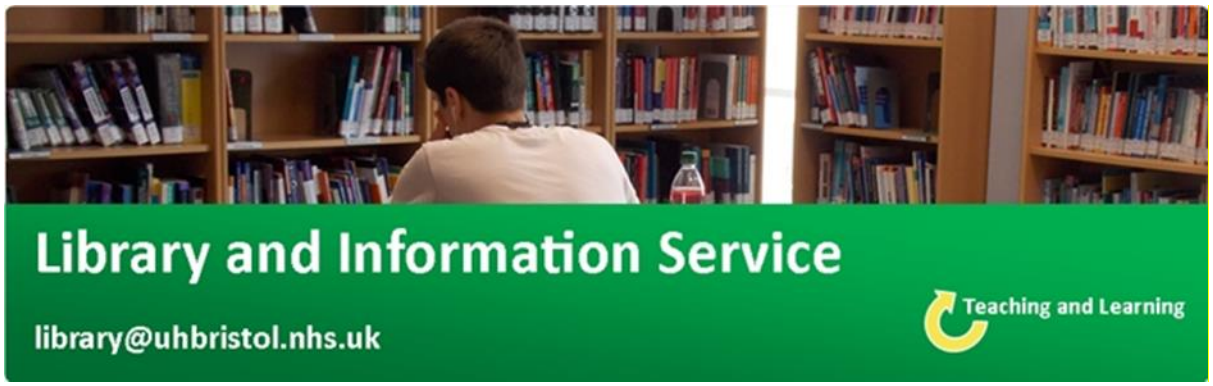
Journal of Clinical Periodontology

February 2018, Volume 45, Issue 2



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