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**Search details**

Patients who have endosseous or dental implants. Post-treatment complications and management.

**Resources searched**

NHS Evidence; TRIP Database; Cochrane Library; CINAHL; EMBASE; MEDLINE; Google Scholar

**Database search terms:** "dental implant"; exp DENTAL IMPLANTS; exp DENTAL IMPLANTATION; ((endosseous; bone) adj2 implant*); (missing adj2 (tooth; teeth)); ((missing; loss; lost) adj2 (teeth; tooth; incisor*; canine*; premolar*; molar*; wisdom*)); (post-operative*; postoperative*; post-treatment; post-treatment; aftercare; "after care"; exp POSTOPERATIVE CARE; exp AFTER CARE; review*; follow-up; "follow AND up*"; manag*; complication*; exp TREATMENT COMPLICATIONS, DELAYED; exp POSTOPERATIVE COMPLICATIONS; (manage*; complication*; ("adverse effect*"; "side effect*")); (review*; follow-up; "follow up"; ((health*; condition; shape) adj2 (teeth; tooth; molar*; incisor*; canine*; gum*));

**Evidence search string(s):** ("dental implant" OR "endosseous implant") ("missing tooth" OR "lost tooth" OR "lost teeth" OR "missing teeth") (post-treatment OR post-operative OR postoperative OR posttreatment) (management OR complications)

**Google search string(s):** ("dental implant" OR "endosseous implant") ("missing tooth" OR "lost tooth" OR "lost teeth" OR "missing teeth") (post-treatment OR post-operative OR postoperative OR posttreatment) (management OR complications)

**Summary**

There is quite a lot of research on complications or management of dental implants. I have included evidence on post-treatment complications and management, although this may include surgical complications as well.
Evidence-based reviews

Center for Evidence-Based Dentistry

Some limited evidence that patients with previous periodontal disease at higher risk of dental implant failure 2012

Limited evidence indicates that patients with periodontitis experienced increased risk of implant failure and more marginal bone loss as compared with patients who were periodontally healthy.

Cochrane Database of Systematic Reviews

Interventions for replacing missing teeth: antibiotics at dental implant placement to prevent complications 2013

Scientific evidence suggests that, in general, antibiotics are beneficial for reducing failure of dental implants placed in ordinary conditions. Specifically 2 g or 3 g of amoxicillin given orally, as a single administration, one hour preoperatively significantly reduces failure of dental implants. No significant adverse events were reported. It might be sensible to suggest the use of a single dose of 2 g prophylactic amoxicillin prior to dental implant placement. It is still unknown whether postoperative antibiotics are beneficial, and which antibiotic is the most effective.

Interventions for replacing missing teeth: treatment of peri-implantitis 2012

There is no reliable evidence suggesting which could be the most effective interventions for treating peri-implantitis. This is not to say that currently used interventions are not effective.

A single small trial at unclear risk of bias showed the use of local antibiotics in addition to manual subgingival debridement was associated with a 0.6 mm additional improvement for PAL and PPD over a 4-month period in patients affected by severe forms of peri-implantitis. Another small single trial at high risk of bias showed that after 4 years, improved PAL and PPD of about 1.4 mm were obtained when using Bio-Oss with resorbable barriers compared to a nanocrystalline hydroxyapatite in peri-implant infrabony defects. There is no evidence from four trials that the more complex and expensive therapies were more beneficial than the control therapies which basically consisted of simple subgingival mechanical debridement. Follow-up longer than 1 year suggested recurrence of peri-implantitis in up to 100% of the treated cases for some of the tested interventions. As this can be a chronic disease, re-treatment may be necessary. Larger well-designed RCTs with follow-up longer than 1 year are needed.

Database of Abstracts of Reviews of Effects

A systematic review of the survival and complication rates of implant supported fixed dental prostheses with cantilever extensions after an observation period of at least 5 years 2009

Implant-supported cantilever fixed dental prostheses were a reliable treatment for the replacement of posterior missing teeth in partially edentulous patients and the most frequent complications included veneer fractures, screw loosening, and loss of retention. No detrimental effects on bone levels were observed around the implants in the proximity of cantilever extensions.

Dental Elf

No convincing evidence of a clinically important difference with different loading times of
implants 2013

Overall there was no convincing evidence of a clinically important difference in prosthesis failure, implant failure, or bone loss associated with different loading times of implants. More well-designed RCTs are needed and should be reported according to the CONSORT guidelines.

Swedish Council on Technology Assessments
Prosthetic rehabilitation of partially dentate or edentulous patients 2010

Other Reviews
Smoking, radiotherapy, diabetes and osteoporosis as risk factors for dental implant failure: a meta-analysis

Smoking and radiotherapy were associated with an increased risk of dental implant failure. The relationship between diabetes and osteoporosis and the risk of implant failure warrant further study.

Published research – Databases

1. Interventions for replacing missing teeth: antibiotics at dental implant placement to prevent complications.

Author(s) Esposito M, Grusovin MG, Worthington HV

Citation: Cochrane Database of Systematic Reviews, 01 July 2013, vol./is. /7(0-), 1469493X

Publication Date: 01 July 2013

Abstract: Background:

Source: CINAHL

Available in fulltext from Cochrane Library, The at Wiley

2. Oral Rehabilitation Outcomes Network-ORONet.

Author(s) Bassi, Francesco, Carr, Alan B, Chang, Ting-Ling, Estafanous, Emad, Garrett, Neal R, Happonen, Risto-Pekka, Koka, Sreenivas, Laine, Juhani, Osswald, Martin, Reintsema, Harry, Rieger, Jana, Roumanas, Eleni, Estafanous, Emad, Salinas, Thomas J, Stanford, Clark M, Wolfaardt, Johan

Citation: International Journal of Prosthodontics, 01 July 2013, vol./is. 26/4(319-322), 08932174

Publication Date: 01 July 2013

Abstract: The published literature describing clinical evidence used in treatment decisionmaking for the management of tooth loss continues to be characterized by a lack of consistent outcome measures reflecting not only clinical performance but also a range of patient concerns. Recognizing this problem, an international group of clinicians, educators, and scientists with a focus on prosthodontics formed the Oral Rehabilitation Outcomes Network (ORONet) to promote strategies for improving health based on comprehensive, patient-centered evaluations of comparative effectiveness of therapies for oral rehabilitation. An initial goal of ORONet is to identify outcome measures for prosthodontic therapies that represent multiple domains with patient relevance, are amenable to utilization in both institutional and practice-based environments, and have established validity. Following a model used in rheumatology, the group assessed the prosthodontic literature, with an emphasis on implant-based therapies, for outcomes related to longevity and functional, psychologic, and economic domains. These systematic reviews highlight a need for further development of standardized outcomes that can be integrated across clinical and research environments.

Author(s) de Baat C, van Loveren C, van der Maarel-Wierink CD, Witter DJ, Creugers NH

Citation: Nederlands Tijdschrift voor Tandheelkunde, July 2013, vol./is. 120/7-8(411-20), 0028-2200:0028-2200 (2013 Jul-Aug)

Publication Date: July 2013

Abstract: An important aim of a treatment with single-unit and multi-unit fixed dental prostheses is a durable and profitable treatment outcome. That requires aftercare, too. First, the frequency of routine oral examinations should be assessed, using an individual risk profile. The objectives of the routine oral examinations are the prevention and, when necessary, the treatment of pathological conditions and complications. With regard to prevention, attention should be paid to information and instruction, oral biofilm and calculus, non-functional activities, hard tooth tissues, periodontal and peri-implant tissues, and saliva. Subsequently, it can be determined whether the intended durability and profitability have been achieved or can still be achieved, whether or not through indicated adjustments. Special attention should be paid to endodontically treated teeth. Restorative, repair or replacement treatments may be indicated in case of complications, such as loose single- or multi-unit fixed dental prosthesis, fracture of a fixed dental prosthesis unit, lost tooth pulp vitality, tooth root fracture, and implant or implant abutment problems.

Source: Medline

4. Bone regeneration associated with nontherapeutic and therapeutic surface coatings for dental implants in osteoporosis.

Author(s) Alghamdi HS, Jansen JA

Citation: Tissue Engineering Part B-Reviews, June 2013, vol./is. 19/3(233-53), 1937-3368;1937-3376 (2013 Jun)

Publication Date: June 2013

Abstract: Oral implantology is considered as the treatment of choice for replacing missing teeth in elderly people. However, implant complications may occur in patients with osteoporosis. The pathogenesis underlying osteoporosis is due to an alteration in bone cell response to hormonal, nutritional, and aging factors. For such challenging situations, improved bone regeneration has been shown around dental implants for certain surface modifications. These modifications include coatings of titanium implants with calcium phosphate (CaP) ceramics. Surface coating developments also allow for the addition of organic biomolecules, like growth factors, into the inorganic coatings that increase the bone formation process at the bone-implant interface. The application of therapeutic-based coatings is becoming a rapidly growing research field of interest. CaP-coated implants have the ability to incorporate anti-osteoporotic drugs, which then can be locally released over time from an implant surface in a controlled manner. Thus, it can be anticipated that nontherapeutic and/or therapeutic coated implants can significantly increase low bone density as well as improve impaired bone regeneration in osteoporosis. This review aims to provide a thorough understanding of the underlying mechanisms for impaired bone regeneration around dental implants in osteoporosis. Secondly, the review will focus on biological interactions and beneficial role of the surface-coated (i.e., nontherapeutics and therapeutics) bone implants in osteoporotic bone tissue.

Source: Medline

5. Implant Placement in the Atrophic Posterior Maxilla With Sinus Elevation Without Bone Grafting: A 2-Year Prospective Study.

Author(s) Rajkumar, Garudanahally Chikkalingaiah, Aher, Vinit, Ramaiya, Shashikala, Manjunath, Gavi Siddhaiah, Kumar, Devaraj Veerendra
Purpose: The purpose of this study was to evaluate changes in alveolar bone height after direct sinus elevation and simultaneous implant placement in the posterior edentulous maxilla. Materials and Methods: A prospective clinical study was conducted of patients undergoing sinus elevation for implant placement in the posterior maxilla to replace missing teeth. Residual alveolar bone height was between 4 and 7.5 mm. Lateral osteotomy of the maxillary sinus, followed by simultaneous implant placement without bone grafting, was performed under local anesthesia. Prosthetic restoration was completed 9 months later. The changes in alveolar bone height at the sinus floor were assessed radiographically after 1 week and 6, 9, 18, and 28 months after implant placement. Probing depths, implant mobility, and crestal bone loss were assessed at the same intervals.

Results: Twenty-eight patients (17 women and 11 men) participated in the study. Forty-five implants were placed and followed after prosthetic rehabilitation. At 18 months after loading of the implants, alveolar bone height in the area of sinus elevation ranged from 7.40 to 11.55 mm. Increases in alveolar bone height at the sinus floor ranged from 2.05 to 5.40 mm at a minimum of 18 months after loading, a statistically significant gain. Crestal bone loss and changes in probing depths were not significant in any patients, and all implants remained clinically stable. The implant success rate was 100% without any complications after 18 to 28 months of follow-up. Conclusion: Placement of endosseous implants in the atrophic posterior maxilla in conjunction with sinus elevation without bone grafting resulted in a significant amount of bone formation around the implants at the sinus floor, resulting in successful restorations and eliminating the need for bone grafting.

Source: CINAHL

6. Alterations in soft tissue levels and aesthetics over a 16-22 year period following single implant treatment in periodontally-healthy patients: A retrospective case series

Author(s) Dierens M., De Bruecker E., Vandeweghe S., Kisch J., De Bruyn H., Cosyn J.

Citation: Journal of Clinical Periodontology, March 2013, vol./is. 40/3(311-318), 0303-6979;1600-051X (March 2013)

Publication Date: March 2013

Abstract: Purpose Long term studies on single implants are scarce and merely focus on clinical response parameters, complications and bone remodelling. The objective of this retrospective case series was to assess alterations in soft tissue levels and aesthetics over a 16-22 year period in periodontally-healthy patients. Material and methods Patients who had received a single turned implant in the anterior maxilla/mandible at the Dental Specialist Clinic in Malmo between 1987 and 1993 were invited for a re-examination on the basis of a number of inclusion criteria. Both neighbouring teeth had to be present at re-examination and baseline clinical photographs (within the first year of function) had to be available for soft tissue evaluation. These photographs were superimposed onto final clinical photographs to assess longitudinal soft tissue alterations. Results Twenty-one patients (nine females; mean age 23, range 16-41) treated with 24 single implants met the criteria for soft tissue evaluation. Peri-implant soft tissue levels (papillae, midfacial level) remained stable over a 16-22 year observation period (p > 0.372). However, neighbouring teeth demonstrated midfacial recession and eruption pointing to a major distortion with the implant crown (> 1 mm) in 5/24 (21%) and 10/24 (42%) of the cases, respectively. Baseline aesthetics was considered poor (mean Pink Esthetic Score 7.42, mean White Esthetic Score 5.43), yet a significant time effect could not be demonstrated (p > 0.552). Implant and tooth bone loss was low (mean 0.6 mm and 0.4 mm, respectively) over a 16-22 year period. Conclusions This limited case series demonstrated stable peri-implant soft tissue levels and aesthetics in the long term following single implant treatment in periodontally-healthy patients. However, midfacial recession and eruption may be expected at neighbouring teeth. 2012 John Wiley & Sons A/S.

Source: EMBASE
7. Clinical outcome of a nonsurgical and surgical treatment protocol in different types of peri-implantitis: a case series.

Author(s) Thierbach R, Eger T

Citation: Quintessence International, February 2013, vol./is. 44/2(137-48), 0033-6572;1936-7163 (2013 Feb)

Publication Date: February 2013

Abstract: OBJECTIVE: The replacement of missing teeth with dental implants has been standard practice in dentistry for many years. The success of dental implants depends on many factors, among which the diagnosis, clinical severity, and treatment of peri-implant diseases play a key role. In this prospective case series, the influence of cumulative treatment modalities on peri-implantitis with and without pus formation on clinical outcome was assessed.METHOD AND MATERIALS: During 2010, 28 patients were referred for peri-implantitis treatment. They presented two different types of peri-implant diseases: peri-implantitis with (17 implants) or without pus formation (33 implants). After microbiologic diagnosis, all patients were treated at baseline with full-mouth scaling and root planing. Two months later, further full-mouth scaling and root planing and additional antimicrobial photodynamic therapy (aPDT) was applied. Four months after baseline, patients with pus formation additionally underwent access flap surgery. Active human matrix metalloproteinase-8 (aMMP-8) levels were measured in eluates before and after all treatment modalities and 7 months after baseline.RESULTS: Clinical parameters (probing depth, bleeding on probing) and aMMP-8 levels improved in both groups after treatment and the final examination. In periimplantitis patients without pus formation, all parameters decreased after full-mouth scaling and root planing and the additional aPDT and no surgery was necessary to improve the parameters. In patients with pus formation, the parameters decreased only after access flap surgery.CONCLUSION: The presence of pus influences the clinical outcome of the treatment of peri-implant diseases. Whereas peri-implantitis cases without pus formation can be successfully managed nonsurgically, peri-implantitis with pus formation can be effectively treated after an additional observation time of 3 months postoperatively only with additional flap surgery.

Source: Medline

8. A New Classification for the Relationship between Periodontal, Periapical, and Peri-implant Complications.

Author(s) Kadkhodazadeh M, Amid R

Citation: Iranian Endodontic Journal, 2013, vol./is. 8/3(103-8), 1735-7497;1735-7497 (2013)

Publication Date: 2013

Abstract: INTRODUCTION: There are numerous studies supporting the high success rate of dental implants used for reconstruction of missing teeth. However, complications like mucositis and peri-implantitis are increasingly reported. Placement of dental implants in partially edentulous patients is associated with the risk of peri-implant diseases, especially when an old or a new inflammatory lesion is present adjacent to the implant site. Although no consensus has been reached on the difference in prevalence of peri-implant mucositis and peri-implantitis between fully and partially edentulous patients, available data clearly show that the combination of periodontal lesion and peri-implantitis is a possible risk factor for further complications. Several classification systems have been suggested for determination of the severity of disease around dental implants. However, no classification has been proposed for combined biological complications around teeth and implants. This study reviews the possible pathologic communication routes between natural dentition and the implants installed adjacent to them. Furthermore, we introduce a new classification system for the peri-implant disease in association with natural teeth called "PIST". This system was designed based on the origin of the defects in order to clarify the different pathological situations which can be detected around dental implant. Using this classification system can help improve diagnosis, comparison and subsequent selection of the best treatment option.

Source: Medline

Author(s) Vanlioglu, Buruçin Akoglu, Äzkan, Yasar, Evren, Buket, Äzkan, Yasemin Kulak

Citation: International Journal of Oral & Maxillofacial Implants, 01 October 2012, vol./is. 27/5(1239-1242), 08822786

Publication Date: 01 October 2012

Abstract: Purpose: This prospective clinical study evaluated an experimental custom-made zirconia abutment with respect to peri-implant hard and soft tissue reaction in narrow implants. Materials and Methods: Patients were treated with prefabricated titanium implants and custom-made zirconia abutments. All-ceramic crowns were fabricated and cemented with resin cement. Clinical parameters such as Plaque Index, Sulcus Bleeding Index, peri-implant probing depth, and radiographic marginal bone loss levels were recorded, along with any biologic and mechanical complications, at baseline and up to 5 years. Results: Twelve patients with missing maxillary lateral incisors treated with a total of 23 implants were evaluated. Thirteen Straumann Narrow Neck Solid Screw implants with a diameter of 3.3 mm and 10 Astra MicroThread implants with a diameter of 3.5 mm were used. Six patients with 11 implants were treated with custom-made zirconia abutments and prefabricated metal abutments were used in the control group. Implant and abutment success at 5 years was 100%. No abutment fractures occurred. Abutment screw loosening was reported for one restoration at the 1-year recall. Mean marginal bone loss measured 0.21 mm after 5 years of functional loading. Conclusion: Custom-made zirconia abutments offered sufficient stability to support all-ceramic restorations over narrow implants in anterior regions over a 5-year period. The soft and hard tissue reactions to zirconia were favorable.

Source: CINAHL

10. Interventions for replacing missing teeth: management of soft tissues for dental implants.

Author(s) Esposito M, Grusovin MG, Maghaireh H, Coulthard P, Worthington HV

Citation: Cochrane Database of Systematic Reviews, 01 February 2012, vol./is. /2(0-), 1469493X

Publication Date: 01 February 2012

Abstract: Background:

Source: CINAHL

Available in fulltext from Cochrane Library, The at Wiley


Author(s) Esposito M, Grusovin MG, Worthington HV

Citation: Cochrane Database of Systematic Reviews, 01 January 2012, vol./is. /1(0-), 1469493X

Publication Date: 01 January 2012

Abstract: BACKGROUND: One of the key factors for the long-term success of oral implants is the maintenance of healthy tissues around them. Bacterial plaque accumulation induces inflammatory changes in the soft tissues surrounding oral implants and it may lead to their progressive destruction (peri-implantitis) and ultimately to implant failure. Different treatment strategies for peri-implantitis have been suggested, however it is unclear which are the most effective. OBJECTIVES: To identify the most effective interventions for treating peri-implantitis around osseointegrated dental implants. SEARCH METHODS: We searched the Cochrane Oral Health Group's Trials Register, CENTRAL, MEDLINE and EMBASE. Handsearching included several dental journals. We checked the bibliographies of the identified randomised controlled trials (RCTs) and relevant review articles for studies outside the handsearched journals. We wrote to authors of all identified RCTs, to more than
55 dental implant manufacturers and an Internet discussion group to find unpublished or ongoing RCTs. No language restrictions were applied. The last electronic search was conducted on 9 June 2011. SELECTION CRITERIA: All RCTs comparing agents or interventions for treating peri-implantitis around dental implants. DATA COLLECTION AND ANALYSIS: Screening of eligible studies, assessment of the methodological quality of the trials and data extraction were conducted in duplicate and independently by two review authors. We contacted the authors for missing information. Results were expressed as random-effects models using mean differences for continuous outcomes and risk ratios for dichotomous outcomes with 95% confidence intervals (CI). Heterogeneity was to be investigated including both clinical and methodological factors. MAIN RESULTS: Fifteen eligible trials were identified, but six were excluded. The following interventions were compared in the nine included studies: different non-surgical interventions (five trials); adjunctive treatments to non-surgical interventions (one trial); different surgical interventions (two trials); adjunctive treatments to surgical interventions (one trial). Follow-up ranged from 3 months to 4 years. No study was judged to be at low risk of bias. Statistically significant differences were observed in two small single trials judged to be at unclear or high risk of bias. After 4 months, adjunctive local antibiotics to manual debridement in patients who lost at least 50% of the bone around implants showed improved mean probing attachment levels (PAL) of 0.61 mm (95% confidence interval (CI) 0.40 to 0.82) and reduced probing pockets depths (PPD) of 0.59 mm (95% CI 0.39 to 0.79). After 4 years, patients with peri-implant infrabony defects > 3 mm treated with Bio-Oss and resorbable barriers gained 1.4 mm more PAL (95% CI 0.24 to 2.56) and 1.4 mm PPD (95% CI 0.81 to 1.99) than patients treated with a nanocrystalline hydroxyapatite. AUTHORS’ CONCLUSIONS: There is no reliable evidence suggesting which could be the most effective interventions for treating peri-implantitis. This is not to say that currently used interventions are not effective. A single small trial at unclear risk of bias showed the use of local antibiotics in addition to manual subgingival debridement was associated with a 0.6 mm additional improvement for PAL and PPD over a 4-month period in patients affected by severe forms of peri-implantitis. Another small single trial at high risk of bias showed that after 4 years, improved PAL and PPD of about 1.4 mm were obtained when using Bio-Oss with resorbable barriers compared to a nanocrystalline hydroxyapatite in peri-implant infrabony defects. There is no evidence from four trials that the more complex and expensive therapies were more beneficial than the control therapies which basically consisted of simple subgingival mechanical debridement. Follow-up longer than 1 year suggested recurrence of peri-implantitis in up to 100% of the treated cases for some of the tested interventions. As this can be a chronic disease, re-treatment may be necessary. Larger well-designed RCTs with follow-up longer than 1 year are needed.

Source: CINAHL

Available in fulltext from Cochrane Library, The at Wiley

12. Soft tissue management for dental implants: what are the most effective techniques? A Cochrane systematic review.

Author(s) Esposito M, Maghaireh H, Grusovin MG, Ziounas I, Worthington HV

Citation: European Journal of Oral Implantology, 2012, vol./is. 5/3(221-38), 1756-2406;1756-2406 (2012)

Publication Date: 2012

Abstract: This review is based on a Cochrane systematic review entitled 'Interventions for replacing missing teeth: management of soft tissues for dental implants' published in The Cochrane Library (see http:// www.cochrane.org/ for information). Cochrane systematic reviews are regularly updated to include new research, and in response to comments and criticisms from readers. If you wish to comment on this review, please send your comments to the Cochrane website or to Marco Esposito. The Cochrane Library should be consulted for the most recent version of the review. The results of a Cochrane review can be interpreted differently, depending on people’s perspectives and circumstances. Please consider the conclusions presented carefully. They are the opinions of the review authors, and are not necessarily shared by the Cochrane Collaboration. Purpose: To evaluate whether flapless procedures are beneficial for patients and which is the ideal flap design, whether soft tissue correction/augmentation techniques are beneficial for patients and which are the best techniques, whether techniques to increase the peri-implant keratinised...
mucosa are beneficial for patients and which are the best techniques, and which are the best suturing techniques/materials. Materials and methods: The Cochrane Oral Health Group’s Trials Register, CENTRAL, MEDLINE and EMBASE were searched up to the 9th of June 2011 for randomised controlled trials (RCTs) of rootform osseointegrated dental implants, with a follow-up of at least 6 months after function, comparing various techniques to handle soft tissues in relation to dental implants. Primary outcome measures were prosthetic failures, implant failures and biological complications. Screening of eligible studies, assessment of the methodological quality of the trials and data extraction were conducted at least in duplicate and independently by two or more review authors. The statistical unit was the patient and not the prosthesis, the procedure or the implant. Results were expressed using risk ratios for dichotomous outcomes and mean differences for continuous outcomes with 95% confidence intervals (CI). Results: Seventeen potentially eligible RCTs were identified but only six trials with 138 patients in total could be included. The following techniques were compared in the six included studies: flapless placement of dental implants versus conventional flap elevation (2 trials, 56 patients), crestal versus vestibular incisions (1 trial, 10 patients), Erbium:YAG laser versus flap elevation at the second-stage surgery for implant exposure (1 trial, 20 patients), whether a connective tissue graft at implant placement could be effective in augmenting peri-implant tissues (1 split-mouth trial, 10 patients), and autograft versus an animal-derived collagen matrix to increase the height of the keratinised mucosa (1 trial, 40 patients). On a patient rather than per implant basis, implants placed with a flapless technique and implant exposures performed with laser lead to statistically significantly less postoperative pain than flap elevation. Sites augmented with soft tissue connective grafts had better aesthetics and thicker tissues. Both palatal autografts or the use of a porcine-derived collagen matrix are effective in increasing the height of keratinised mucosa at the cost of a 0.5 mm recession of peri-implant soft tissues. There were no other statistically significant differences for any of the remaining analyses. Conclusions: There is limited weak evidence suggesting that flapless implant placement is feasible and has been shown to reduce patient postoperative discomfort in adequately selected patients, that augmentation at implant sites with soft tissue grafts is effective in increasing soft tissue thickness and improving aesthetics, and that one technique to increase the height of keratinised mucosa using autografts or an animal-derived collagen matrix was able to achieve its goal but at the cost of a worsened aesthetic outcome (0.5 mm of recession). There is insufficient reliable evidence to provide recommendations on which is the ideal flap design, the best soft tissue augmentation technique, whether techniques to increase the width of keratinised/attached mucosa are beneficial to patients or not, and which are the best incision/suture techniques/materials. Properly designed and conducted RCTs, with at least 6 months of follow-up, are needed to provide reliable answers to these questions.

Source: Medline

13. Implant-supported restoration of congenitally missing teeth using cancellous bone block-allografts.

Author(s) Nissan J, Mardinger O, Strauss M, Peleg M, Sacco R, Chaushu G

Citation: Oral Surgery Oral Medicine Oral Pathology Oral Radiology & Endodontics, March 2011, vol./is. 111/3(286-91), 1079-2104;1528-395X (2011 Mar)

Publication Date: March 2011

Abstract: BACKGROUND AND OBJECTIVE: Patients with congenitally missing teeth may present with undeveloped alveolar bone morphology, making implant reconstruction a challenge. The aim of the present study was to evaluate the outcome of dental implants after ridge augmentation with cancellous freeze-dried block bone allografts in patients with congenitally missing teeth. STUDY DESIGN: Twelve patients with a mean age of 21 ± 4 years, were included. Congenitally missing teeth included maxillary lateral incisors, a maxillary canine, and mandibular central and lateral incisors. A bony deficiency of >3 mm horizontally and <3 mm vertically according to computerized tomography served as inclusion criteria. Twenty-one implants were inserted after a healing period of 6 months. Five out of 21 implants were immediately restored. Bone measurements were taken before bone augmentation, during implant placement, and at second-stage surgery. RESULTS: Nineteen cancellous allogeneic bone-blocks were used. The mean follow-up time was 30 ± 16 months. Bone block and implant survival rates were 100% and 95.2%, respectively. Mean bone gain was statistically significant (P < .001): 5 ± 0.5 mm horizontally and 2 ± 0.5
All of the patients received a fixed implant-supported prosthesis. Soft tissue complications occurred in 4 patients (30%). Complications after cementation of the crowns were seen in 1 implant (4.8%). All implants remained clinically osseointegrated at the end of the follow-up examination. There was no crestal bone loss around the implants beyond the first implant thread.

**CONCLUSION:** Cancellous bone block-allografts can be used successfully for implant-supported restorations in patients with congenitally missing teeth.

**Source:** Medline

**14. Multidisciplinary management of congenitally missing teeth with osseointegrated dental implants: a long-term report.**

**Author(s)** Hu XL, Li JH, Luo J, Qiu LX, Lin Y

**Citation:** Chinese Journal of Dental Research, 2011, vol./is. 14/1(29-36), 1462-6446;1462-6446 (2011)

**Publication Date:** 2011

**Abstract:** OBJECTIVE: To describe a multidisciplinary approach to ensure optimal treatment and timing of treatment for these patients. METHODS: Ten patients with congenital missing teeth were treated with dental implants with a multidisciplinary approach, including orthodontics, prosthodontics, and/or orthognathic surgery, from 1997 to 2006 in the Department of Implant Dentistry, Peking University, Hospital of Stomatology. All patients were followed up over five years. Clinical and radiographic examinations were conducted for all the patients. A thorough diagnostic workup was used and the outline of the treatment planning was given from the prosthodontic point of view. RESULTS: A total of 31 implants were placed and restored for the 10 patients involved. Followup averaged 108.4 months (61-155 months) after implant prosthetic functioning. With the multidisciplinary approach, a satisfactory treatment for these patients was acquired, with follow-up for more than 5 years. The peri-implant marginal bone level was stable with bone resorption averaged 1.97 mm. Peri-implantitis was found in one patient with two implants and effectively treated with local anti-infection. Ceramic chips were observed in two cases and the crowns were re-fabricated. CONCLUSION: Implant restoration with an interdisciplinary approach provides an alternative way with predictable clinical results for patients with congenitally missing teeth.

**Source:** Medline

**15. Evaluation of 316 narrow diameter implants followed for 5-10 years: a clinical and radiographic retrospective study.**

**Author(s)** Arisan V, Bolukbasi N, Ersanli S, Ozdemir T

**Citation:** Clinical Oral Implants Research, March 2010, vol./is. 21/3(296-307), 0905-7161;1600-0501 (2010 Mar)

**Publication Date:** March 2010

**Abstract:** OBJECTIVES: Narrow diameter implants (NDIs; diameter >3.75 mm) are useful in replacement of missing incisor teeth and when the bucco-lingual width of the edentulous crest is insufficient. The present study evaluated the success and survival rates, peri-implant parameters, mechanical and prosthetic post-loading complications of NDIs followed over a 10-year period. MATERIAL AND METHODS: Three hundred and sixteen NDIs were inserted into 139 patients and restored with 120 prostheses. Clinical and radiographic assessment data were collected during recall visits. Implant success (SC), cumulative survival rate (CSR), marginal bone loss (MBL), peri-implant conditions and prosthetic complications were assessed. Cox proportional hazards regression analysis, Kaplan-Meier survival curves with the log-rank test and life table analysis were used to evaluate the outcome of NDIs within comparable subgroups. MBL and peri-implant parameters measured annually were further analyzed. RESULTS: The mean follow-up time was 9.1 years (range: 60-124 months). Twelve implants were lost in the healing phase and two during function. The mean MBL in the maxilla and the mandible was 1.32 +/- 0.13 and 1.28 +/- 0.3 mm, respectively, after 10 years. SC and CSR were 91.4% and 92.3%, respectively, after 124 months. Smoking and posterior localization were associated with an increased...
risk of failure. Cement loosening (16.8%) was the most common prosthetic complication. No implants were fractured.

CONCLUSIONS: NDIs can be used with confidence where a regular diameter implant is not suitable. MBL around NDIs occurred predominantly within 2 years of loading and was minimal thereafter. Further studies are required to clarify the possible risks associated with smoking and posterior placement.

Source: Medline


Author(s) Carcuac O, Jansson L

Citation: Swedish Dental Journal, 2010, vol./is. 34/2(53-61), 0347-9994;0347-9994 (2010)

Publication Date: 2010

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

Source: Medline


Author(s) Esposito M, Grusovin MG, Loli V, Coulthard P, Worthington HV

Citation: European Journal of Oral Implantology, 2010, vol./is. 3/2(101-10), 1756-2406;1756-2406 (2010)

Publication Date: 2010

Abstract: UNLABELLED: CONFLICT-OF-INTEREST STATEMENT: Marco Esposito is the first author of two of the included studies; however, he was not involved in the quality assessment of these trials. This review is based on a Cochrane systematic review entitled 'Interventions for replacing missing teeth: antibiotics at dental implant placement to prevent complications' published in The Cochrane Library (see http://www.cochrane.org for more information). Cochrane systematic reviews are regularly updated to include new research, and in response to comments and criticisms from readers. If you wish to comment on this review, please send your comments to the Cochrane website or to Marco Esposito. The Cochrane Library should be consulted for the most recent version of the review. The results of a Cochrane Review can be interpreted differently, depending on people's perspectives and circumstances. Please consider the conclusions presented carefully. They are the
opinions of the review authors, and are not necessarily shared by the Cochrane Collaboration.

PURPOSE: To assess the beneficial or harmful effects of systemic prophylactic antibiotics at dental implant placement versus no antibiotic/placebo administration and, if antibiotics are of benefit, to find which type, dosage and duration is the most effective.

MATERIALS AND METHODS: The Cochrane Oral Health Group's Trials Register, the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE and EMBASE were searched up to 2 June 2010 for randomised controlled clinical trials (RCTs) with a follow-up of at least 3 months comparing the administration of various prophylactic antibiotic regimens versus no antibiotics to patients undergoing dental implant placement. Outcome measures were prosthesis failures, implant failures, postoperative infections and adverse events (gastrointestinal, hypersensitivity, etc.). Screening of eligible studies, assessment of the methodological quality of the trials and data extraction were conducted in duplicate and independently by two review authors. Meta-analyses were conducted.

RESULTS: Four RCTs were identified: three comparing 2 g of preoperative amoxicillin versus placebo (927 patients) and the other comparing 1 g of preoperative amoxicillin plus 500 mg four times a day for 2 days versus no antibiotics (80 patients). The meta-analyses of the four trials showed a statistically significantly higher number of patients experiencing implant failures in the group not receiving antibiotics: risk ratio=0.40 (95% confidence interval (CI) 0.19 to 0.84). The number needed to treat (NNT) to prevent one patient having an implant failure is 33 (95% CI 17-100), based on a patient implant failure rate of 5% in patients not receiving antibiotics. The other outcomes were not statistically significant, and only two minor adverse events were recorded, one in the placebo group.

CONCLUSIONS: There is some evidence suggesting that 2 g of amoxicillin given orally 1 h preoperatively significantly reduce failures of dental implants placed in ordinary conditions. No significant adverse events were reported. It might be sensible to suggest the use of a single dose of 2 g prophylactic amoxicillin prior to dental implant placement. It is still unknown whether post-operative antibiotics are beneficial, and which is the most effective antibiotic.

Source: Medline

18. Periodontal and periimplant maintenance: a critical factor in long-term treatment success

Author(s) Shumaker N.D., Metcalf B.T., Toscano N.T., Holtzclaw D.J.

Citation: Compendium of continuing education in dentistry (Jamesburg, N.J. : 1995), September 2009, vol./is. 30/7(388-390, 392, 394 passim; quiz 407, 418), 1548-8578 (Sep 2009)

Publication Date: September 2009

Abstract: Periodontal maintenance (PM) is a critical factor in the long-term success of both periodontal and dental implant therapy. Studies have shown both modern periodontal and dental implant therapies are effective in maintaining natural teeth and replacing lost teeth, respectively. However, without a regular program of clinical reevaluation, plaque control, oral hygiene instruction, and reassessment of biomechanical factors, the benefits of treatment often are lost and inflammatory disease in the form of recurrent periodontitis or periimplantitis may result. This article reviews the goals, types, and appropriate frequency of PM in periodontal and dental implant therapy, as well as the incidence and etiology of periimplant disease and strategies for management when recurrent disease develops during the maintenance phase of treatment.

Source: EMBASE

19. A review of dental implants and infection.

Author(s) Pye AD, Lockhart DE, Dawson MP, Murray CA, Smith AJ

Citation: Journal of Hospital Infection, 01 June 2009, vol./is. 72/2(104-110), 01956701

Publication Date: 01 June 2009

Abstract: Dental implants have become increasingly common for the management of tooth loss. Despite their placement in a contaminated surgical field, success rates are relatively high. This article reviews dental implants and highlights factors leading to infection and
potential implant failure. A literature search identified studies analysing the microbial composition of peri-implant infections. The microflora of dental peri-implantitis resembles that found in chronic periodontitis, featuring predominantly anaerobic Gram-negative bacilli, in particular Porphyromonas gingivalis and Prevotella intermedia, anaerobic Gram-negative cocci such as Veillonella spp. and spirochaetes including Treponema denticola. The role of Staphylococcus aureus and coagulase-negative staphylococci that are typically encountered in orthopaedic infections is debatable, although they undoubtedly play a role when isolated from clinically infected sites. Likewise, the aetiological involvement of coliforms and Candida spp. requires further longitudinal studies. Currently, there are neither standardised antibiotic prophylactic regimens for dental implant placement nor universally accepted treatment for peri-implantitis. The treatment of infected implants is difficult and usually requires removal. In the UK there is no systematic post-surgical implant surveillance programme. Therefore, the development of such a project would be advisable and provide valuable epidemiological data. Copyright © 2009 The Hospital Infection Society

Source: CINAHL
Available in print at Lincoln County Hospital Professional Library
Available in fulltext from Journal of Hospital Infection at the ULHT Library and Knowledge Services' eJournal collection

20. Prosthodontic rehabilitation of hypophosphatasia using dental implants: a review of the literature and two case reports.

Author(s) Lynch CD, Ziada HM, Buckley LA, O'Sullivan VR, Aherne T, Aherne S
Citation: Journal of Oral Rehabilitation, 01 June 2009, vol./is. 36/6(462-468), 0305182X
Publication Date: 01 June 2009
Abstract: There are reports in the literature of the various dental features of hypophosphatasia, especially where it affects the deciduous dentition. The descriptions include both the manifestations of the disorder and the subsequent patterns of tooth loss. There are fewer descriptions of the effects of hypophosphatasia on the permanent dentition and little information on the subsequent prosthodontic management of these patients, particularly in relation to the use of dental implants. The aim of this paper was to review the literature on the dental effects of hypophosphatasia, present two cases and describe how one of those patients, a young adult, was successfully rehabilitated using dental implants. That latter patient's pattern of tooth loss as well as some histological and scanning electron microscopic findings of root cementum from the other case is also described.
Source: CINAHL


Author(s) Al Quran F.A., Rashan B.A., Al-Dwairi Z.N.
Citation: The Journal of oral implantology, 2009, vol./is. 35/4(210-214), 0160-6972 (2009)
Publication Date: 2009
Abstract: The widespread use of endosseous osseointegrated implants to replace missing natural teeth increases the chances of implant complications and failures, despite the high initial success rate reported in the literature. Implant fracture is one possible complication that results in ultimate failure of the dental implant. Such a complication poses a management crisis even for the most experienced clinician. This article reports on a case of implant fracture, its possible causes, and how the case was managed.
Source: EMBBASE
Available in fulltext at Journal of Oral Implantology, The; Collection notes: On first login to a ProQuest journal you will need to select 'Athens (OpenAthens Federation)' from Select Region, and then 'NHS England' from Choose your Library.
22. Soft tissue management at implant sites.

**Author(s)** Cairo F, Pagliaro U, Nieri M

**Citation:** Journal of Clinical Periodontology, 02 August 2008, vol./is. 35/(163-167), 03036979

**Publication Date:** 02 August 2008

**Abstract:** BACKGROUND: Dental implants are widely used to replace lost teeth. It was suggested that surgical manipulation/augmentation of peri-implant soft tissue may be beneficial to increase the width/thickness of keratinized tissue (KT) and to enhance aesthetic outcomes of implant therapy. The aim of this paper was to provide a narrative review of the literature concerning soft tissue management at implant sites. MATERIAL AND METHODS: Clinical studies were identified with both medline and hand searches. Three topics were considered in this review: (i) the significance of KT at implant sites, (ii) the surgical techniques to increase KT and (iii) soft tissue stability around implants. RESULTS: Several papers concerning soft tissue management at implant sites were identified, mainly expert opinions, case reports and case series. In addition, a systematic review was selected. Generally, the level of evidence was weak. So far, literature analysis showed that (i) the width of KT did not influence the survival rate of dental implants; (ii) there is no evidence to recommend a specific technique to preserve/augment KT; and (iii) factors including bone level, KT and implant features have not been shown to be associated with future mucosal recession around dental implants. CONCLUSION: Although scientific evidence in most part is lacking, soft tissue augmentation at implant sites may need to be considered in some clinical situations.

**Source:** CINAHL

23. Tooth loss and implant outcomes in patients refractory to treatment in a periodontal practice

**Author(s)** Fardal O., Linden G.J.

**Citation:** Journal of Clinical Periodontology, August 2008, vol./is. 35/8(733-738), 0303-6979;1600-051X (August 2008)

**Publication Date:** August 2008

**Abstract:** Aim: The aim of this study was to investigate the factors associated with continued significant tooth loss due to periodontal reasons during maintenance following periodontal therapy in a specialist periodontal practice in Norway. Material and Methods: A case-control design was used. Refractory cases were patients who lost multiple teeth during a maintenance period of 13.4 (range 8-19) years following definitive periodontal treatment in a specialist practice. Controls were age- and gender-matched maintenance patients from the same practice. Characteristics and treatment outcomes were assessed, and all teeth classified as being lost due to periodontal disease during follow-up were identified. The use of implants in refractory cases and any complications relating to such a treatment were recorded. Results: Only 27 (2.2%) patients who received periodontal treatment between 1986 and 1998 in a specialist practice met the criteria for inclusion in the refractory to treatment group. Each refractory subject lost 10.4 (range 4-16) teeth, which represented 50% of the teeth present at baseline. The rate of tooth loss in the refractory group was 0.78 teeth per year, which was 35 times greater than that in the control group. Multivariate analysis indicated that being in the refractory group was predicted by heavy smoking (p=0.026), being stressed (p=0.016) or having a family history of periodontitis (p=0.002). Implants were placed in 14 of the refractory patients and nine (64%) of these lost at least one implant. In total, 17 (25%) of the implants placed in the refractory group were lost during the study period. Conclusions: A small number of periodontal maintenance patients are refractive to treatment and go on to experience significant tooth loss. These subjects also have a high level of implant complications and failure. Heavy smoking, stress and a family history of periodontal disease were identified as factors associated with a refractory outcome. 2008 The Authors.

**Source:** EMBASE

24. Survival and complication rates of combined tooth-implant-supported fixed and
removable partial dentures

Author(s) Nickenig H.-J., Spiekermann H., Wichmann M., Andreas S.K., Eitner S.
Citation: International Journal of Prosthodontics, March 2008, vol./is. 21/2(131-137), 0893-2174 (March/April 2008)
Publication Date: March 2008
Abstract: Purpose: The aim of this study was to assess and compare clinical outcome results of tooth-implant-supported fixed and removable partial dentures in a selected population group of partially edentulous patients. Biological and technical complications were recorded and reviewed. Materials and Methods: A retrospective analysis of the dental charts of 224 patients (174 men, 50 women) with a mean age of 51.3 years was carried out. The evaluation included details regarding the survival and technical complications of the prescribed prostheses, as well as the biological and technical complications associated with both types of abutments used, ie, teeth and implants. Results: A total of 229 prostheses were supported by 459 implants and 449 teeth. They were monitored for a period of 2 to 10 years (median follow-up time: 6.7 years). At the end of the different observation periods, 14% of the tooth-implant-supported prostheses had undergone technical modifications, with no statistical difference in the occurrence of technical complications between the 2 types of prosthesis. Three of the functionally loaded implants were removed, while 23 abutment teeth were lost (15 had undergone endodontic treatment). Abutment teeth with a reduced attachment level after prosthesis insertion were significantly affected by biological complications (P = .04). Conclusions: The survival data for both types of prosthesis were comparable to prostheses supported solely by implants. There was no difference in the complication rate between primary splinting (fixed) and secondary splinting with telescopic systems (removable). A greater risk of biological complications was recorded for endodontically treated abutments or teeth with a reduced attachment level.
Source: EMBASE

25. Longevity of teeth and implants -- a systematic review.

Author(s) Tomasi C, Wennström JL, Berglundh T
Citation: Journal of Oral Rehabilitation, 02 January 2008, vol./is. 35/(23-32), 0305182X
Publication Date: 02 January 2008
Abstract: The objective of this systematic review was to describe the incidence of tooth and implant loss reported in long-term studies. Prospective longitudinal studies reporting on teeth or implants survival with a follow-up period of at least 10 years were considered. Papers were excluded if the drop out rate exceeded 30% or if <70% of the initial subject sample was examined at 10 years of follow-up. Seventy publications on teeth were identified as potentially relevant for the focused question. The analysis of the abstracts yielded 37 studies eligible for full-text analysis. The inclusion criteria were met in 11 of the publications that included in all 3015 subjects. The initial search on implant studies generated 52 publications that possibly could be included. Following the evaluation of the abstracts and full-text analysis nine publications were found to fulfill the inclusion criteria. The nine studies included 476 subjects. The incidence of tooth loss among subjects with a follow-up period of 10-30 years varied from 1.3% to 5% in the majority of studies, while in two epidemiological studies on rural Chinese populations the incidences of tooth loss were 14% and 20%. The percentage of implants reported as lost during the follow-up period varied between 1% and 18%. In clinically well-maintained patients, the loss rate at teeth was lower than that at implant. Bone level changes appeared to be small at teeth as well as at implants in well-maintained patients. Comparisons of the longevity at teeth and dental implants are difficult due to heterogeneity among the studies.
Source: CINAHL

26. Effects of smoking on the outcome of implant treatment: A literature review

Author(s) Baig M.R., Rajan M.
Citation: Indian Journal of Dental Research, October 2007, vol./is. 18/4(190-195), 0970-
**Abstract:** Statement of Problem: The use of osseointegrated implants as a foundation for the prosthetic replacement of missing teeth has become widespread in the last decade. Owing to the remarkable success of dental implants, there has been growing interest in identifying the factors associated with implant failure. Given the well-documented deleterious effect of smoking on wound healing after tooth extraction and its association with poor quality bone and periodontal disease, a negative effect of tobacco use on implant success is to be expected. Purpose: To establish the relationship between smoking and implant-related surgical procedures (i.e., sinus lift procedures, bone grafts and dental implants), including the incidence of complications related to these procedures and the long-term survival and success rates of dental implants among smokers and nonsmokers based on relevant literature. Materials and Methods: Relevant clinical studies published in English between 1990 and 2006 were reviewed. The articles were located through Medline and, manually, through the references of peer-reviewed literature. This was supplemented with a hand search of selected dental journals and text books. Results: The majority of the past and current literature implicates smoking as one of the prominent risk factors affecting the success rate of dental implants with only a handful of studies failing to establish a connection. Most of the studies report the failure rate of implants in smokers as being more than twice that in nonsmokers. These findings are difficult to ignore. There is a statistically significant difference between smokers and nonsmokers in the failure rates of dental implants. Smoking also has a strong influence on the complication rates of implants: it causes significantly more marginal bone loss after implant placement, it increases the incidence of peri-implantitis and affects the success rates of bone grafts. The failure rate of implants placed in grafted maxillary sinuses of smokers is again more than twice that seen in nonsmokers. Conclusion: Smokers have higher failure rates and complications following dental implantation and implant-related surgical procedures. The failure rate of implants placed in grafted maxillary sinuses of smokers is more than twice that seen in nonsmokers.

**Source:** EMBASE

**27. A review of the aetiology and management of fractured dental implants and a case report.**

**Author(s)** Virdee P, Bishop K

**Citation:** British Dental Journal, October 2007, vol./is. 203/8(461-6), 0007-0610;1476-5373 (2007 Oct 27)

**Publication Date:** October 2007

**Abstract:** Osseo-integrated dental implants offer a predictable treatment for the replacement of missing teeth. Despite the high success, complications can occur such as loss of integration, peri-implantitis and mucositis as well as mechanical problems. The latter includes screw loosening and more significantly fracture of the implant itself. As implant use is increasing, practitioners are more likely to face, and have to deal with, such complications. This report describes the management of a patient with a fractured Branemark fixture in the maxilla. The likely causes are discussed and the treatment options highlighted together with the decision making process which lead to the final management.

**Source:** Medline

Available in fulltext at British Dental Journal; Collection notes: On first login to a ProQuest journal you will need to select 'Athens (OpenAthens Federation)' from Select Region, and then 'NHS England' from Choose your Library.

**28. Dental implant design and oral and systemic health.**

**Author(s)** Callan DP

**Citation:** Compendium of Continuing Education in Dentistry, September 2007, vol./is. 28/9(482-4, 486-90, 492), 1548-8578;1548-8578 (2007 Sep)

**Publication Date:** September 2007
Abstract: Dental implants are now a common treatment for replacing missing teeth, and their success has long been measured by appearance, function, and longevity of placement. Most dental implants provide a natural-looking appearance. However, both patients and dentists should be aware that infectious complications of dental implants may not only affect function and longevity, but also the systemic health of patients. In addition to traditional measures of success, numerous published studies support, as a key outcome, prevention of implants from harboring periodontal pathogens. Known negative outcomes of infection include failure of the implant to integrate with the bone, causing implant loss and possible bone loss. Given the established associations between periodontitis and systemic health, it is possible that infection in and around the implant components may impart risks to systemic health. This article reviews causes for peri-implant infection and implant loss, and evaluates an implant design that decreases the possibility of infection and possible health complications, by preventing bacterial infiltration.

Source: Medline

29. Long time follow up of implant therapy and treatment of peri-implantitis.

Author(s) Roos-Jansaker AM

Citation: Swedish Dental Journal - Supplement, 2007, vol./is. /188(7-66), 0348-6672;0348-6672 (2007)

Publication Date: 2007

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

Source: Medline
30. Multiple single-tooth implant restorations in the posterior jaws: maintenance of marginal bone levels with reference to the implant-abutment microgap.

**Author(s)** Norton MR

**Citation:** International Journal of Oral & Maxillofacial Implants, September 2006, vol./is. 21/5(777-84), 0882-2786;0882-2786 (2006 Sep-Oct)

**Publication Date:** September 2006

**Abstract:** PURPOSE: The purpose of this study was to measure marginal bone loss from the implant-abutment microgap to the bone crest between multiple freestanding implants functionally loaded for up to 7.5 years in the posterior jaws. MATERIALS AND METHODS: Patients consecutively treated for the replacement of missing posterior teeth were included in the study. Using the implant-abutment interface, which was placed level with the crestal bone as a reference point, standardized follow-up radiographs were obtained to evaluate marginal bone loss. Results were subject to statistical analysis using the Wilcoxon rank sum test and the Wilcoxon signed rank test at the 95% confidence level. Additionally, soft tissue and prosthetic complications were recorded. RESULTS: One hundred seventy-three implants in 54 patients were evaluated. Implants were in function for a mean of 37 months (range, 21 to 91 months). One implant failed, for a survival rate of 99.4%. Overall mean marginal bone loss was 0.65 mm (range, 0.0 to 4.8 mm). For the 80 maxillary and 93 mandibular implants, mean marginal bone loss was 0.56 mm and 0.70 mm, respectively. The frequency of bone loss > or = 1.0 mm was 25.0% in the maxilla and 36.0% in the mandible; 23.1% of maxillary implants and 16.7% of mandibular implants demonstrated no bone loss. No significant differences were observed between men and women or between smokers and nonsmokers. The difference between mesial and distal bone levels was statistically significant (P < .001), with respective means of 0.53 mm and 0.76 mm. Recorded prosthetic complications included cementation failure (17.7%), porcelain fracture (7.2%), and abutment screw loosening (2.2%). CONCLUSIONS: Multiple single-tooth implants placed in the posterior jaws perform extremely well. Furthermore, it is possible to retain bone close to the implant-abutment microgap with certain implant designs.

**Source:** Medline

31. Outcome of oral implant treatment in partially edentulous jaws followed 20 years in clinical function.

**Author(s)** Lekholm U, Grondahl K, Jemt T

**Citation:** Clinical Implant Dentistry & Related Research, 2006, vol./is. 8/4(178-86), 1523-0899;1523-0899 (2006)

**Publication Date:** 2006

**Abstract:** BACKGROUND: Most long-term follow-up studies of implants in partially edentulous jaws present their outcomes as mean values of implant survival and follow-up time, and few address the fate of the remaining teeth. PURPOSE: The aim of this study was to investigate the results of oral implant treatment in partially edentulous jaws after 20 years, and simultaneously to assess what happens to teeth present at the time of implant placement. MATERIALS AND METHODS: Seventeen partially edentulous patients, of 27 originally treated individuals, were retrospectively reviewed after receiving implants from 1983 to 1985. The parameters studied were implant survival, prosthesis stability, marginal bone loss at teeth and implants, treatment complications, need for dental treatment, and patient's satisfaction with the outcome. RESULTS: The cumulative survival rate was 91%, when all 27 patients were assessed, that is, including the 10 dropouts. Of the 69 inserted and followed implants (Branemark system; Nobel Biocare AB, Goteborg, Sweden), six failed (8.7%) during the 20-year period, four during the first decade, and the remaining two during the second. A majority (n=4) of the losses were due to implant fractures, two after 8 years, and two after 17 years. In all, 10 of the original fixed bridges being followed (n=24) remained in function during the entire investigation period, whereas 12 were exchanged for new constructions after an average of 7 years. The mean marginal bone loss at teeth was 0.7 mm, and at implants it was 1.0 mm. The major complication observed during the second decade was veneer material fractures, which occurred 14 times in six patients. Component loosening and abutment- and bridge-locking screw fractures were the second
most common problems seen, indicating material/component fatigue. Most patients were satisfied with their treatment and many mentioned that they did not think of the constructions as anything but a part of their own body. CONCLUSION: Over the decades, treatment of partially edentulous jaws with turned titanium implants seems to function well and to provide patients with good support for fixed short-span bridge constructions.

Source: Medline

32. [Risk factors for dental implant inflammation--a literature review].

Author(s) Oved E, Ardikian L, Peled M

Citation: Refuat Hapeh Vehashinayim, April 2004, vol./is. 21/2(55-62, 98), 0792-9935;0792-9935 (2004 Apr)

Publication Date: April 2004

Abstract: Replacing missing teeth with osseointegrated dental implants is a predictable technique as evidenced by overall 5-years survival rate that range between 93% to 97%. Few studies, however have addressed the history and frequency of inflammatory complication associated with dental implant. Inflammatory complications are the main cause of failure of dental implants. In this review we classified the inflammatory complications to acute and chronic and to those limited to the hard tissue, to the soft tissue or both. The incidence of the complications is discussed with an emphasis on their risk factors.

Source: Medline

33. Interventions for replacing missing teeth: maintaining health around dental implants.

Author(s) Esposito M, Worthington HV, Thomsen P, Coulthard P

Citation: Cochrane Database of Systematic Reviews, 2004, vol./is. /3(CD003069), 1361-6137;1469-493X (2004)

Publication Date: 2004

Abstract: BACKGROUND: To maintain healthy tissues around dental implants it is important to institute an effective preventive regimen (supportive therapy). Different maintenance regimens have been suggested, however it is unclear which are the most effective.OBJECTIVES: To test the null hypothesis of no difference between different interventions for maintaining healthy tissues around dental implants.SEARCH STRATEGY: We searched the Cochrane Oral Health Group's Trials Register, the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE and EMBASE. Handsearching included several dental journals. We checked the bibliographies of the identified randomised controlled trials (RCTs) and relevant review articles for studies outside the handsearched journals. We wrote to authors of all identified RCTs, to more than 55 oral implant manufacturers and an internet discussion group to find unpublished or ongoing RCTs. No language restrictions were applied. The last electronic search was conducted on 2 February 2004.SELECTION CRITERIA: All randomised controlled trials of oral implants comparing agents or interventions for maintaining or recovering healthy tissues around dental implants.DATA COLLECTION AND ANALYSIS: We carried out a quality assessment of the included RCTs in duplicate and contacted the authors for missing information. We independently extracted the data in duplicate. We followed the Cochrane Oral Health Group's statistical guidelines.MAIN RESULTS: Fourteen RCTs were identified. Five of these trials, which reported results from a total of 127 patients, were suitable for inclusion in the review. Two trials evaluated the efficacy of powered and sonic toothbrushes, respectively, when compared to manual toothbrushing and showed no statistically significant differences. One RCT compared Listerine versus placebo mouthwashes showing a reduction of 54% in plaque and 34% in marginal bleeding compared with the placebo. One trial compared self administered subgingival chlorhexidine irrigation versus chlorhexidine mouthwash. The group using chlorhexidine irrigation resulted in statistically significantly lower mean plaque scores and a marginal bleeding index than the group using chlorhexidine mouthwash, however the mouthwash was given at a suboptimal dosage. One study compared etching gel with mechanical debridement
showing no statistical differences. Follow ups ranged between 6 weeks and 5 months. It was not possible to make any meta-analysis as each trial assessed different interventions.

REVIEWERS' CONCLUSIONS: There is only little reliable evidence for which are the most effective interventions for maintaining health around peri-implant tissues. There was no evidence that the use of powered or sonic toothbrushes was superior to manual toothbrushing. There is weak evidence that Listerine mouthwash, used twice a day for 30 seconds, as adjunct to routine oral hygiene is effective in reducing plaque formation and marginal bleeding around implants. There was no evidence that phosphoric etching gel offered any clinical advantage over mechanical debridement. These findings are based on RCTs having short follow-up periods and few subjects. There is not any reliable evidence for the most effective regimens for long term maintenance. More RCTs should be conducted in this area. In particular, there is a definite need for trials powered to find possible differences, using primary outcome measures and with much longer follow up. Such trials should be reported according the CONSORT guidelines (http://www.consort-statement.org/).

Source: Medline
Available in fulltext from Cochrane Library, The at Wiley

34. [The surgical complications of dental implants].
Author(s) Ardikian L., Oved E., Peled M.
Citation: Refuat Hapeh Vehashinayim, July 2003, vol./is. 20/3(20-6, 99), 0792-9935;0792-9935 (2003 Jul)
Publication Date: July 2003
Abstract: Replacing missing teeth with osseointegrated dental implants is a predictable technique as evidenced by the overall five-year implant survival rates ranging 93% to 97%. Few studies, however, address systematically the frequency or natural history of complications related to the use of dental implants. Reported complication rates range so widely, i.e. 1%-40%, as to be rendered clinically meaningless. Differences in reported rates may be attributable to differing definitions of complications. Even less has been written about risk factors for developing surgical complications related to the use of dental implants. Knowledge regarding the type and frequency of complications that can occur with implants is an important aspect of treatment planning, surgeon-patient communication, informed consent and post-treatment care. The purposes of this chapter are to: 1) summarize the reported types and frequencies of implant-associated complications, 2) identify risk factors for developing complications associated with the use of dental implants, and 3) to suggest strategies to avoid complications.
Source: Medline

35. The surgical complications of dental implants
Author(s) Ardikian L., Oved E., Peled M.
Citation: Refuat ha-peh eha-shinayim (1993), July 2003, vol./is. 20/3(20-26, 99), 0792-9935 (Jul 2003)
Publication Date: July 2003
Abstract: Replacing missing teeth with osseointegrated dental implants is a predictable technique as evidenced by the overall five-year implant survival rates ranging 93% to 97%. Few studies, however, address systematically the frequency or natural history of complications related to the use of dental implants. Reported complication rates range so widely, i.e. 1%-40%, as to be rendered clinically meaningless. Differences in reported rates may be attributable to differing definitions of complications. Even less has been written about risk factors for developing surgical complications related to the use of dental implants. Knowledge regarding the type and frequency of complications that can occur with implants is an important aspect of treatment planning, surgeon-patient communication, informed consent and post-treatment care. The purposes of this chapter are to: 1) summarize the reported types and frequencies of implant-associated complications, 2) identify risk factors for developing complications associated with the use of dental implants,
and 3) to suggest strategies to avoid complications.

**Source:** EMBASE


**Author(s):** Karoussis I.K., Salvi G.E., Heitz-Mayfield L.J., Bragger U., Hammerle C.H., Lang N.P.

**Citation:** Clinical oral implants research, June 2003, vol./is. 14/3(329-339), 0905-7161 (Jun 2003)

**Publication Date:** June 2003

**Abstract:** AIM: The aim of this 10-year study was to compare the failure, success and complication rates between patients having lost their teeth due to periodontitis or other reasons. MATERIAL AND METHODS: Fifty-three patients who received 112 hollow screw implants (HS) of the ITI Dental Implant System were divided into two groups: group A - eight patients with 21 implants having lost their teeth due to chronic periodontitis; group B - forty five patients with 91 implants without a history of periodontitis. One and 10 years after surgical placement, clinical and radiographic parameters were assessed. The incidences of peri-implantitis were noticed over the 10 years of regular supportive periodontal therapy. RESULTS: Success criteria at 10 years were set at: pocket probing depth (PPD) ≤5 mm, bleeding on probing (BoP-), bone loss <0.2 mm annually. The survival rate for the group with a past history of chronic periodontitis (group A) was 90.5%, while for the group with no past history of periodontitis (group B) it was 96.5%. Group A had a significantly higher incidence of peri-implantitis than group B (28.6% vs. 5.8%). With the success criteria set, 52.4% in group A and 79.1% of the implants in group B were successful. With a threshold set at PPD <or=6 mm, BoP- and bone loss <0.2 mm annually, the success rates were elevated to 62% and 81.3% for groups A and B, respectively. Relying purely on clinical parameters of PPD <or=5 mm and BoP-, the success rates were at 71.4% and 94.5%, and with a threshold set at PPD <or=6 mm and BoP-, these proportions were elevated to 81% and 96.7% for groups A and B, respectively. CONCLUSIONS: Patients with implants replacing teeth lost due to chronic periodontitis demonstrated lower survival rates and more biological complications than patients with implants replacing teeth lost due to reasons other than periodontitis during a 10-year maintenance period. Furthermore, setting of thresholds for success criteria is crucial to the reporting of success rates.

**Source:** EMBASE

### 37. Tooth- and implant-supported prostheses: a retrospective clinical follow-up up to 8 years.

**Author(s)** Kindberg H, Gunne J, Kronström M

**Citation:** International Journal of Prosthodontics, 01 November 2001, vol./is. 14/6(575-581), 08932174

**Publication Date:** 01 November 2001

**Abstract:** Purpose: The purpose of this study was to evaluate clinical treatment outcome of fixed prostheses in different sizes and with combinations of different numbers of teeth and implants as abutments. Materials and Methods: A total of 115 implants were placed in 36 patients, 75 (65%) in the maxilla and 40 (35%) in the mandible. The implants were connected to 85 abutment teeth, 50 in the maxilla and 35 in the mandible. Of the prosthetic restorations, 19 were gold ceramic, 17 were gold acrylic, three were titanium acrylic, one was titanium ceramic, and one was titanium composite. The observation period ranged from 14 months to 8.9 years. The treatments comprised both fixed partial dentures supported by one tooth and one implant as well as complete-arch fixed prostheses supported by a number of teeth and implants. Results: A total of nine implants were lost, three during healing and six after loading. The postloading cumulative implant survival rate was 89.81% after 5 years. Five abutment teeth were lost, and of the 41 prostheses included in the study, only two (5%) were lost during the observation period. Marginal bone loss was registered around 46 implants at the 1-year follow-up examination. During the following observation period, only slight changes in the marginal bone level adjacent to the
implants and teeth were registered. The magnitude of technical complications was low. Conclusion: This investigation confirms the findings in similar studies that treatments with periodontally healthy teeth and implants splinted together in rigid one-piece superstructures show excellent long-term follow-up results.

Source: CINAHL

38. Biological and technical complications and failures with fixed partial dentures (FPD) on implants and teeth after four to five years of function

Author(s) Bragger U., Aeschlimann S., Burgin W., Hammerle C.H., Lang N.P.

Citation: Clinical oral implants research, February 2001, vol./is. 12/1(26-34), 0905-7161 (Feb 2001)

Publication Date: February 2001

Abstract: The aim of this study was to compare the frequency of biological and technical complications with fixed partial dentures (FPDs) on implants, teeth and as mixed tooth-implant supported FPDs over 4 to 5 years of function. All implants belonged to the ITI Dental Implant System. Group I-I (implant FPD) included 33 patients with 40 FPDs, group T-T (tooth FPDs) 40 patients with 58 FPDs, group I-T (mixed tooth-implant FPDs) 15 with 18 FPD. Of the bridge abutments 144 were teeth and 105 were implants. The median number of units replaced by the FPDs was 3 (range 2-14). The mean age of the patients was 55.7 years (range 23-83). Complete failures resulted in the loss of one FPD in each group. Two implants were lost due to fracture secondarily to development of a bone defect. One tooth had a vertical fracture and 1 tooth was lost due to periodontitis. Biological complications (peri-implantitis, PPD > or = 5 mm and BOP+) occurred at 9.6% (10) of the implants. This number was, however, reduced to 5% if the threshold for definition of peri-implantitis was set at PPD > or = 6 mm and BOP+. Biological complications occurred in 11.8% (17) of the abutment teeth (NS compared to implants); 2.8% (4) had secondary caries, 4.9% (7) endodontic problems and 4.1% (6) had periodontitis (PPD > or = 5 mm, BOP+). Ten out of 32 patients with a general health problem indicated a biological complication, whereas 9 out of 53 patients with no general health problem had a biological complication (chi 2: NS). Statistically significantly more technical complications were found in FPDs on implants (chi 2, P < or = 0.05). The technical complications were associated with bruxism. Out of 10 bruxers 6 had a technical complication whereas 13 out of 75 non-bruxers had such a complication (chi 2 < or = 0.01). Extensions were associated with more technical complications (13 out of 35 with extensions versus 9 out of 81 without). In conclusion, favourable clinical conditions were found at tooth and implant abutments after 4-5 years of function. Loss of FPD over 4-5 years occurred at a similar rate with mixed, implant or tooth supported reconstructions. Significantly more porcelain fractures were found in FPDs on implants. Impaired general health status was not significantly associated with more biological failures but bruxism as well as extensions were associated with more technical failures.

Source: EMBASE

39. Variables affecting survival of single-tooth hydroxyapatite-coated implants in anterior maxillae at 3 years

Author(s) Orenstein I.H., Petrazzuolo V., Morris H.F., Ochi S.

Citation: Annals of periodontology / the American Academy of Periodontology, December 2000, vol./is. 5/1(68-78), 1553-0841 (Dec 2000)

Publication Date: December 2000

Abstract: BACKGROUND: The development and expanded use of endosseous dental implants over the last two decades have been remarkably rapid. It is, therefore, imperative that the dental profession closely monitor the performance of root-form implants used in a variety of applications. The Dental Implant Clinical Research Group (DICRG) was established in 1990 by the Department of Veterans Affairs as a forum for conducting prospective, multidisciplinary, multicentered studies in the field of implant dentistry. The DICRG comprised 30 VA medical centers and 2 dental schools at the time of this study. This paper reports on the survival of hydroxyapatite (HA)-coated grooved implants used to
replace single missing teeth in anterior maxillae at 3 years post-implant placement.

METHODS: During a 4-year accrual period, a total of 247 single-tooth implant restorations were placed in anterior maxillae. This paper focuses on the survival of 222 implants (149 patients) for which 3-year data were recorded for the period from placement. Survival was examined with respect to patient demographics and health status, implant location, surgical variables, and 2-week post-placement use of chlorhexidine digluconate (0.12%) rinses. Implant stability was recorded using a hand-held probe. Periodontal-type measures were recorded and evaluated, and all complications related to osseointegration were noted. Failure was defined as removal of the implant for any reason. RESULTS: Establishment and maintenance of osseointegration at 3 years post-placement was 97.3%. During this 3 year period, 6 implants were removed due to either failure to osseointegrate or loss of osseointegration. Implant length correlated positively with 3-year survival (P = 0.003, exact test). The use of preoperative antibiotics was nearly significant to implant survival (P = 0.051. Pearson chi-square). Mean stability values (PTVs) increased incrementally from -4.5 at uncovering to +1.1 at 36 months, indicating a decrease in stability of the bone-implant-prosthesis complex. The most common complication was related to inadequate available bone to fully house implants. CONCLUSIONS: Three-year post-placement survival data suggest that the use of HA-coated, grooved, endosseous implants to support maxillary anterior single-tooth replacements is a predictable and reliable procedure that can offer significant benefits. Longer implants demonstrated higher survival than shorter implants. The use of preoperative antibiotics was nearly significant to implant survival, and there was an increase in mean PTVs observed over the duration of the study. Further research is needed to assess stability of the hydroxyapatite-bone interface over time.

Source: EMBASE

40. The challenge of endosseous implants placed in the posterior partially edentulous maxilla: a clinical report

Author(s) Schwartz-Arad D., Dolev E.

Citation: The International journal of oral & maxillofacial implants, March 2000, vol./is. 15/2(261-264), 0882-2786 (2000 Mar-Apr)

Publication Date: March 2000

Abstract: The survival rate of implants placed in the maxillary molar area in a 2-stage procedure was evaluated. Between 1990 and 1997, 60 consecutive patients (32 females and 28 males, mean age 51 years) received 87 implants to replace missing maxillary molar teeth. Radiographs were evaluated preoperatively for bone quantity (mesiodistal width, potential implant length not compromising the integrity of adjacent vital structures). Second-stage surgery was performed in a mean of 7.9 months postimplantation. The 5-year cumulative implant survival rate and the influence of implant characteristics (type, length, diameter, and coating) on implant failure and complication rates (between the 2 stages of surgery) were evaluated. The total 5-year cumulative survival rate was 95.4% (4 implants were lost). There were a total of 17 "complications" (premature spontaneous implant exposure) in non-failing implants, 11 with high and 6 with flat cover screws, respectively. Implantation in the edentulous maxillary molar area is a predictable procedure with a considerably high survival rate. The type of implant cover screw used can affect the complication rate.

Source: EMBASE

41. Implant complications and failures: the single-tooth restoration.

Author(s) Watson CJ, Tinsley D, Sharma S

Citation: Dental Update, January 2000, vol./is. 27/1(35-8, 40, 42), 0305-5000;0305-5000 (2000 Jan-Feb)

Publication Date: January 2000

Abstract: The single-tooth implant restoration appears to be an ideal method of replacing missing natural teeth in a healthy dentition. Most follow-up studies report a high success rate. The restoration is seen by many clinicians as a relatively straightforward technique easily adapted to general dental practice and popular with patients, although it is not...
without complications. The purpose of this paper is to look at common problems following the placement of root-formed endosseous dental implants. A number of implant systems are reviewed and the results of the authors' clinical experiences reported.

**Source:** Medline

### 42. Single tooth replacement of missing molars: a retrospective study of 78 implants.

**Author(s)** Schwartz-Arad D, Samet N, Samet N

**Citation:** Journal of Periodontology, April 1999, vol./is. 70/4(449-54), 0022-3492;0022-3492 (1999 Apr)

**Publication Date:** April 1999

**Abstract:** As experience with osseointegrated implants has grown, greater use has been made of placement in the posterior jaw. The aim of this study is to present the survival rate of 78 osseointegrated single implants, inserted in the molar area and to evaluate the prosthetic rehabilitation on these teeth. This retrospective study presents findings of 55 consecutive patients with 78 restored single osseointegrated implants in the molar area. The patients went through a clinical and radiological evaluation. The same maxillofacial surgeon inserted all implants. Three of the implants were inserted into the maxilla and 75 into the mandible; 4 of the 78 implants were immediate implants. The cumulative survival rate after one year was 93.6%. Follow-up was up to 80 months, with an average of 27 months. Out of all the implants, 6 failed (7.7%): 5 failed in the surgical stage, and 1 after prosthetic loading. The main implant failures were among the titanium screw implants. Prosthetic complications occurred in 11 cases (14%), which included loosening of the abutment and/or the crown (9 cases), fracture of the abutment (1 case), and porcelain fracture (1 case). No incident of implant fracture occurred. Within the limits of this study, replacement of a single molar by a single implant is a valid and successful surgical treatment modality, with a high survival rate.

**Source:** Medline

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**From 1st fifty results:**

Interdisciplinary management of dental implant patient: a case report

CM Chen, I Huang, CF Yang, YS Shen... - The Kaohsiung Journal …, 2004 - Elsevier

... Key Words: posterior subapical osteotomy, dental implant (Kaohsiung J Med Sci 2004;20:415–8) Received: February 2 ... or several Posterior subapical osteotomy 417 Kaohsiung J Med Sci August 2004 • Vol 20 • No 8 missing teeth. ... (B) Post treatment panoramic roentgenograph ...

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Effectiveness of prophylactic antibiotics at placement of dental implants: a pragmatic multicentre placebo-controlled randomised clinical trial

M Esposito, G Cannizarro, P Bozzoli... - Eur. J. Oral. ...; 2010 - implantologiamonza.com

... Purpose: To evaluate the efficacy of prophylactic antibiotics for dental implant placement. ... Outcome measures were prosthesis and implant failures, adverse events and post-operative complications. Patients were seen 1 week, 2 weeks and 4 months post-operatively. ...

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AE Karaky, FA Sawair, OA Al-Karadsheh... - Eur J Oral ...; 2011 - straumann.de

... Interventions for replacing missing teeth: antibiotics at dental implant placement to prevent ... the minimum effective regimen of Amoxicillin antibiotic prophylaxis for dental
Implant surgery. ... The data relating to post-operative complications encountered at the Division of Oral Surgery...

Inconclusive evidence to recommend prophylactic antibiotics to prevent complications following dental implant treatment

SG Reed - Journal of Evidence Based Dental Practice, 2004 - Elsevier
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B Balevi - Evidence-Based Dentistry, 2008 - nature.com
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Endosseous dental implant vis-a-vis conservative management: Is it a dilemma?

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A 5-Year Retrospective Study on Postsurgical Periimplant Infection During Initial Bone Healing Period: Clinical Characteristics, Management, and Prognosis

W Ma, Y Duan, B Sun, Y Liu, C Xie, D Li - Implant dentistry, 2013 - journals.lww.com
... are developed, the use of dental implants to replace missing teeth has been ... the implant placement and the use of preoperative and/or postoperative prophylactic antibiotics. ... included in this study involved bone originated infection surrounding dental implant, accompanied by ... Related articles All 5 versions Cite Save

Dental Implant Complications: Etiology, Prevention, and Treatment

SJ Froum - 2010 - journals.lww.com
... 22, they will be greeted with the title, “A Potpourri of Surgical Complications Associated with Dental Implant Placement: 35 Case ... And, as if that were not enough, the book closes with chapter 25 with the title, “Management of Implant ... The chapter ends with the postoperative visit. ... Cited by 4 Related articles All 4 versions Cite Save

Traumatic injuries during the postoperative period after orthognathic surgery in patient with complete bilateral cleft lip and palate

LM Menezes, SMD Rizzatto, S Allgayer... - Revista Odonto ..., 2011 - SciELO Brasil
... of the maxillary left lateral incisor was used until placement of the endosseous implant. ... displace adjacent teeth toward the missing tooth, or replace the missing tooth with an ... The literature reportism, a high proportion of serious cases of postoperative complications with independent ... Related articles All 5 versions Cite Save
The influence of prophylactic antibiotic administration on post-operative morbidity in dental implant surgery. A prospective double blind randomized controlled clinical trial.

R Nolan, M Kemmoona, I Polyzois... - Clinical oral implants ..., 2013 - Wiley Online Library

Additionally, high levels of post-operative pain and interference with daily activities following implant surgery may be an issue... Worthington, HV, Loli, V., Coulthard, P. & Grusovin, MG (2010b) Interventions for replacing missing teeth: antibiotics at dental implant placement to...

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Amoxicillin Administrations and Its Influence on Bone Repair Around Osseointegrated Implants

G Giro, J In, L Witek, R Granato, C Marin... - Journal of Oral and ... 2014 - Elsevier

For decades, dental implants have been widely used, with high success rates, to replace missing teeth. 1 ... al. The influence of prophylactic antibiotic administration on post-operative morbidity in dental implant surgery. A ...

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</tr>
<tr>
<td>57</td>
<td>MEDLINE</td>
<td>(&quot;adverse effect*&quot; OR &quot;side effect*&quot;).ti,ab [Limit to: Publication Year 1990-2014]</td>
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<td>53 OR 56 OR 57 [Limit to: Publication Year 1990-2014]</td>
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<td>(review* OR follow-up OR &quot;follow up&quot;).ti,ab [Limit to: Publication Year 1990-2014]</td>
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<td>(healthy adj2 (teeth OR tooth OR molar* OR incisor* OR canine* OR gum*)).ti,ab</td>
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