Plasmacytoma of the mandible associated with a dental implant failure: a clinical report.

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Abstract

The case report of a patient is presented who had been suffering from a plasmacytoma of the spine several years back, and who had developed a new plasmacytoma of the mandible, 3 years subsequent to the insertion of a dental implant. This second solitary lesion occurred 15 years after the first one, and without signs of conversion to multiple myeloma. Research in animal models has shown multinucleated giant cells, belonging to the monocyte-macrophage lineage, persisting between the titanium surface and the lymphohemopoietic compartment, at least 1.5 years after implant insertion. Factors that increase the proliferative activity of precursor B cells, for example a protracted macrophage activation, are likely to increase the risk of B cell oncogenesis. A possible role of the titanium surface in an increase of precursor B cell proliferative activity, thus facilitating a new localization, was evaluated.

Osteonecrosis of the Posterior Mandible after Implant Insertion: A Clinical and Histological Case Report.

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Abstract

ABSTRACT Background: In the past few years, the occurrence of an oral lesion, called osteonecrosis of the jaw (ONJ), has been increasingly reported in patients undergoing treatment with bisphosphonates (BPs); however, few published histological studies of ONJ can be found in the literature. Purpose: The aim of the present case was to report an occurrence of ONJ after implant insertion. Materials and Methods: Multiple myeloma was diagnosed to a 65-year-old female. After 5 years of treatment with intravenous clodronate, two dental implants were inserted in the mandibular molar region. No preexisting bone lesions were present at a preoperative panoramic radiography. Before implant insertion, the patient had suspended the treatment with clodronate for 3 months. Four months after the implant insertion, a breakdown of the oral mucosa covering the implants occurred with a purulent discharge; periapical radiolucency was present around both implants. An en-block
resection on the alveolar bone including the two implants was performed. No signs of recurrence of the lesion were observed after a follow-up of 20 months. Results: At the interface of one of the implants, a gap was observed between bone and implant. This bone was nonvital, and many osteocyte lacunae were empty. Moreover, this bone appeared to be partially demineralised. No newly formed bone or osteoblasts were present. Bone trabeculae were observed, on the other hand, within the apical implant threads of the other implant. A close connection was observed between this bone and the implant surface. Discussion: The histological findings showed some areas with osseointegration in patients undergoing BP treatment for malignant disease; however, any invasive procedure can determine the onset of osteonecrosis. Conclusion: In conclusion, there is certainly a temporal association between BP use and development of ONJ, but a correlation does not necessarily mean causation. Moreover, generalizations about this complex relationship cannot be made on the basis of a single case report. In patients undergoing intravenous treatment, clinicians must be aware of the increased risk of implant failure and, probably, implant insertion should be avoided at all until more conclusive data are available.

What impact do systemically administrated bisphosphonates have on oral implant therapy? A systematic review.


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Abstract

OBJECTIVES: The aim of this systematic review is to evaluate, analysing the dental literature, whether: * Patients on intravenous (IV) or oral bisphosphonates (BPs) can receive oral implant therapy and what could be the risk of developing bisphosphonate-related osteonecrosis of the jaw (BRONJ)? * Osseointegrated implants could be affected by BP therapy.

MATERIAL AND METHODS: A Medline search was conducted and all publications fulfilling the inclusion and exclusion criteria from 1966 until December 2008 were included in the review. Moreover, the Cochrane Data Base of Systematic Reviews, and the Cochrane Central Register of Controlled Trials and EMBASE (from 1980 to December 2008) were searched for English-language articles published between 1966 and 2008. Literature search was completed by a hand research accessing the references cited in all identified publications.

RESULTS: The literature search rendered only one prospective and three retrospective studies. The prospective controlled non-randomized clinical study followed patients with and without BP medication up to 36 months after implant therapy. The patients in the experimental group had been on oral BPs before implant therapy for periods ranging between 1 and 4 years. None of the patients developed BRONJ and implant outcome was not affected by the BP medication. The three selected retrospective studies (two case-
controls and one case series) yielded very similar results. All have followed patients on oral BPs after implant therapy, with follow-up ranging between 2 and 4 years. BRONJ was never reported and implant survival rates ranged between 95% and 100%. The literature search on BRONJ including guidelines and recommendations found 59 papers, from which six were retrieved. Among the guidelines, there is a consensus on contraindicating implants in cancer patients under IV-BPs and not contraindicating dental implants in patients under oral-BPs for osteoporosis.

CONCLUSIONS: From the analysis of the one prospective and the three retrospective series (217 patients), the placement of an implant may be considered a safe procedure in patients taking oral BPs for <5 years with regard to the occurrence of BRONJ since in these studies no BRONJ has been reported. Moreover, the intake of oral-BPs did not influence short-term (1-4 years) implant survival rates.

"Bis-phossy jaws" - high and low risk factors for bisphosphonate-induced osteonecrosis of the jaw.


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Abstract

INTRODUCTION: Bisphosphonates (BPs) have transformed our ability to treat certain malignancies, osteoporosis and hypercalcaemia. This class of drug is assumed to be well tolerated by most. There are some important caveats to this assumption, however, one of the significances being the risk of osteonecrosis of the jaw (ONJ).

MATERIAL AND METHODS: This multi-centre retrospective study examined the role of different BPs on the development of ONJ, its clinical presentation and the efficacy of various treatment modalities, comparing these findings with the available literature.

RESULTS: A total of 78 patients from 17 centres were identified with ONJ. A majority of patients identified with ONJ had used Pamidronate or Zoledronate (93.6%) intravenously. 94.9% of patients had received BP in the course of treatment for malignancies and a majority had also received prior chemotherapy or exogenous steroids. 82.1% of patients had received BP for more than 1 year. The mean time from the introduction of BP to the development of ONJ in 24 patients from our department was 31.8 months.

CONCLUSIONS: The most common intraoral manifestation was exposed necrotic jawbone. Tooth extractions and oral surgical intervention appear to place patients on BP therapy at risk of ONJ, especially after intravenous BP treatments. ONJ proved in this study to be remarkably refractory to treatment, with radical resection being the only curative approach. We recommend that all patients receive necessary dental treatment prior to commencing BP therapy.
Influence of chemotherapy on endosteal implant survival and success in oral cancer patients.

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Abstract

Little is known about the effect of chemotherapy on the osseointegration and survival of endosteal dental implants. In a retrospective study, two groups of patients were compared: one group consisting of 30 oral cancer patients received postsurgical adjuvant chemotherapy with either cis- or carboplatin and 5-fluorouracil in three cycles and were treated subsequently with 106 dental implants placed in the mandible; the other group consisting of 17 patients suffering from oral cancer was prescribed with 54 dental implants placed in the mandible after oncological surgery. No patient was treated with radiotherapy. Twenty patients in the first group were successfully provided with a prosthetic superstructure (mean time of function: 35.8 months) compared to 16 patients in the second group (mean time of function: 36.2 months). The observation time was 10 years. A life-table analysis based on defined success parameters demonstrated no significant difference between implant survival in either group. It was concluded that chemotherapy with cis- or carboplatin and 5-fluorouracil was not detrimental to the survival and success of dental implants in the mandible.

Effects of chemotherapy in patients with dental implants.

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Abstract

Endosseous implant placement is generally considered to be contra-indicated in patients undergoing chemotherapy for the treatment of cancer. A case is presented where a patient was diagnosed with cancer and began chemotherapy four weeks after endosseous implants were placed. The impact of chemotherapeutic agents on endosseous implant acceptance as well as upon oral tissue is examined.

Effects of chemotherapy on osseointegration of implants: a case report.

McDonald AR, Pogrel MA, Sharma A.

Abstract

A patient underwent mandibular resection for high-grade osteosarcoma with immediate reconstruction with a microvascular fibula free bone graft and simultaneous placement of osseointegrated implants. Following initial healing, she underwent six cycles of chemotherapy and had further revision surgery prior to implant exposure and construction of a prosthesis. The chemotherapy appears to have had no deleterious effects on implant osseointegration or survival.

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Dental endosseous implants in the medically compromised patient.

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Abstract

The literature contains numerous observations on the significance of systemic disorders as contraindications to dental endosseous implant treatment, but the justification for these statements is often apparently allegorical. Although implants are increasingly used in healthy patients, their appropriateness in medically compromised patients is less equivocal. Perhaps surprisingly, the evidence of their efficacy in these groups of patients is quite sparse. Indeed, there are few if any randomized controlled trials (RCTs) in this field. Furthermore, any health risks from the placement of implants are unclear. We review the current evidence for the risks associated with endosseous implants in a range of systemic disorders. There is clearly a need for prospective systematic trials. The degree of disease-control may be far more important that the nature of the disorder itself, and individualized assessment, including the medical condition, quality of life and life expectancy is indicated. The benefits of implants to many of these patients may outweigh any risks. However, proper informed consent is mandatory.
Consensus statements and recommended clinical procedures regarding risk factors in implant therapy.

Cochran DL, Schou S, Heitz-Mayfield LJ, Bornstein MM, Salvi GE, Martin WC.


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Systemic conditions and treatments as risks for implant therapy.

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Abstract

PURPOSE: To evaluate whether systemic diseases with/without systemic medication increase the risk of implant failure and therefore diminish success and survival rates of dental implants.

MATERIALS AND METHODS: A MEDLINE search was undertaken to find human studies reporting implant survival in subjects treated with osseointegrated dental implants who were diagnosed with at least one of 12 systemic diseases.

RESULTS: For most conditions, no studies comparing patients with and without the condition in a controlled setting were found. For most systemic diseases there are only case reports or case series demonstrating that implant placement, integration, and function are possible in affected patients. For diabetes, heterogeneity of the material and the method of reporting data precluded a formal meta-analysis. No unequivocal tendency for subjects with diabetes to have higher failure rates emerged. The data from papers reporting on osteoporotic patients were also heterogeneous. The evidence for an association between osteoporosis and implant failure was low. Nevertheless, some reports now tend to focus on the medication used in osteoporotic patients, with oral bisphosphonates considered a potential risk factor for osteonecrosis of the jaws, rather than osteoporosis as a risk factor for implant success and survival on its own.
CONCLUSIONS: The level of evidence indicative of absolute and relative contraindications for implant therapy due to systemic diseases is low. Studies comparing patients with and without the condition in a controlled setting are sparse. Especially for patients with manifest osteoporosis under an oral regime of bisphosphonates, prospective controlled studies are urgently needed.

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**Medical contraindications to implant therapy: Part II: Relative contraindications.**

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**Abstract**

Systemic conditions and habits influence dental implant survival to varying degrees. Illnesses that impair the normal healing cascade worsen surgical success. The mere presence of a disease, however, does not necessarily preclude implant therapy or affect significantly long-term outcomes. Certain disorders, when controlled, or other situations allow implant survival rates that match those in health. This paper reviews these relative contraindications, which include adolescence, aging, osteoporosis, smoking, diabetes, positive interleukin-1 genotype, human immunodeficiency virus positivity, cardiovascular disease, and hypothyroidism.

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**Medical contraindications to implant therapy: part I: absolute contraindications.**

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**Abstract**

In order to ensure implant success, it is essential to select patients who do not possess local or systemic contraindications to therapy. Hence, it is the purpose of this paper to review the medical diseases that reportedly preclude conventional dental implant treatment. Absolute
contraindications to implant rehabilitation include recent myocardial infarction and cerebrovascular accident, valvular prosthesis surgery, immunosuppression, bleeding issues, active treatment of malignancy, drug abuse, psychiatric illness, as well as intravenous bisphosphonate use. Any of these conditions bar elective oral surgery, and require judicious monitoring by the physician as well as the dental provider. Noncompliance to the suggested protocol may, in the worst possible case, result in patient mortality.

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[Surgical dilemmas. Medical restrictions and risk factors]

[Article in Dutch]

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Abstract

In principle, only patients with an ASA (American Society of Anaesthesiologists)-score I or II qualify for an elective surgical procedure, such as an implantation treatment. Surgical risks are weighed against the potential benefits offered by oral implants. Counterindications to implant rehabilitation include recent myocardial infarction and cerebrovascular accident, immunosuppression, active treatment of malignancy, drug abuse, as well as long-standing intravenous bisphosphonate use. In the case of patients with an endocarditis risk, and also in the case of patients with an orthopedic prosthesis, implants should be placed with some reluctance. If the decision is made for treatment, then consultation with the treating specialist is recommended. Beside absolute counterindications, there are also conditions which compromise the success of an implant treatment, such as radiation of the jaw or long-term smoking. Concerning the effect which medical conditions have on the life-expectancy of the implant, little is known. There appear to be few existing factors which actually have a negative influence on the chance that an implant will survive.

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Is implanto-prosthodontic treatment available for haemodialysis patients?

Dijakiewicz M, Wojtowicz A, Dijakiewicz J, Szyck V, Rutkowski P, Rutkowski B.


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