Peri-Implantitis-to-Cancer related articles and articles related to profound periodontitis and cancer.

Seong-Ho Jin et al
Diffuse large B-Cell Lymphona of the peri-Implant Musoca Mimicking Peri-Implantitis
Journal of Oral Implantology, Vol XLII/ No. 2, 2016

"In conclusion, oral lymphoma should be considered in the differential diagnosis of peri-implantitis. A biopsy and patho- logic analysis should be performed, especially in patients with hematologic disease. "

Comment: As a result of these considerations, regular control biopsy of infected peri-implant tissue around conventional 2-stage implants is necessary.

Gianfranco Favia et all
Metastatic Breast Cancer in Medication-Related Osteonecrosis Around Mandibular Implants
Am J Case Rep, 2015; 16: 621-626

Conclusion: PI-MRONJ nowadays is a well-documented, though infrequent, complication of implant procedures in patients undergoing BPs therapy. In this context, special attention should be paid to cancer patients, in view of the possible concomitant occur- rence of metastases at peri-implant sites, which may be clin- ico-radiologically overlooked.

Maximilian Moergel
Chronic periodontitis and its possible association with oral squamous cell carcinoma – a retrospective case control study. Head & Face Medicine 2013, 9:39

Conclusion: The incidence of a malignant tumor in the vicinity of dental implants is very low. Thus, it is still an open issue, whether peri-implant carcinomas represent a specific entity or are just a variant of multicentric carcinogenesis. However, the gender ratio and the low proportion of classical risk factors provide first hints that peri-implant carcinoma may be trig- gered by implant-related mechanisms and risk factors.

Martins-Chaves R. et al
KRAS mutations in implant-associated peripheral giant cell granuloma
Oral Diseases. 2019;00:1–7.

KRAS mutations and activation of the MAPK-ERK signaling pathway occur in IA-PGCG. This is the first study to demonstrate cancer-associated gene mutations in a non-neoplastic reactive condition associated with dental implants.

Vijayan Srinivaspased et al
Liaison between micro-organisms and oral cancer
Journal of Pharmacy And Bioallied Sciences | Published by Wolters Kluwer - Medknow
Online since 20th February, 2010

We have seen in detail, the various data and the existing literature that strongly suggest a definitive link between micro- organisms and oral cancer. All the three major types of bacteria, fungi and viruses provide certain species, which seem to agree with the aforementioned hypothesis. Notwithstanding the burgeoning interest in the possible association between bacteria and different stages of cancer development, our definitive knowledge in its relation to oral cancers remains inadequate although various theories have been put forth by various scientists. Similarly, the role of viruses and fungi in causing oral cancer has also been examined in painstaking detail and unanimously, it can be concluded that further study is warranted. New and improved scientific developments coupled with numerous precise methods of intra-cellular study hints at a future that is optimistic and full of possibilities. Hopefully, the next few years will provide definitive answers to the most pertinent questions examined here.

J. Willem Verhoeven, MD, DDS, PhD[a]/Marco S. Cune, DDS, PhD[b]/Robert J. J. van Es, MD, DDS, PhD[b]

An Unusual Case of Implant Failure

A 67-year-old woman was referred with a rapidly progressing swelling in the left canine region of the edentulous mandible. Nine months earlier, 2 permucosal implants had been placed in her atrophic anterior mandible. A few weeks after implant placement, an inoperable carcinoma of the lung had been diagnosed. This tumor was treated with a combination of chemotherapy and radiotherapy. After 3 months, the implants were provided with a Dolder bar supporting an overdenture. Subsequently, progressive inflammation developed around the left implant and removal of the implant was necessary. When progressive swelling of the mucosa developed at the previous implant site, the patient was referred to an oral and maxillofacial surgeon. The swelling measured 35 mm in diameter and was biopsied. It was diagnosed as a metastasis of the lung carcinoma to the mandible. The tumor of the jaw was treated with local radiotherapy. Int J Prosthodont

2007;20:51–54.

Luciano Lauria Dib, Ana Laura Soares, Renata Lazzari Sandoval, Ulf Nannmark
Breast Metastasis around Dental Implants: A Case Report
Clinical Implant Dentistry and Related Research, Volume 9, Number 2, 2007

Results: Clinical examination, x-ray, and histopathology revealed that the patients suffered from a metastatic lesion, primary tumor being an adenocarcinoma of the breast diagnosed at the same time.

Conclusion: Optimal clinical examination in conjunction with radiography and histopathology is a necessity in order to discover malignant lesions in time. Routine dental check-ups must comprise more thorough soft-tissue examination.

Shu-Lin Chuang Et al

Malignant transformation to oral cancer by subtype of oral potentially malignant disorder: A prospective cohort study of Taiwanese nationwide oral cancer screening program
Oral Oncology 87 (2018) 58–63

Objectives: To elucidate the risk of malignant transformation to invasive oral cancer by subtypes of oral potentially malignant disorders (OPMD) and to examine the independent effects of risk factors, particularly alcohol drinking, by subtype based on a nationwide oral cancer screening program targeting at general population with habits of smoking and/or betel quids chewing. Materials and methods: The total of 8501 subjects diagnosed as different subtypes of OPMDs from the Taiwanese screening program between 2004 and 2009 were followed up over time to ascertain the occurrence of invasive oral cancer. The hazard ratios of malignant transformation were estimated by using Cox proportional hazards regression model.

Results: The overall malignant rate (per 1000 person-years) to oral cancer was 8.4 (407 incident cases with an average of 5.7 years of follow-up). The highest rate was noted in exophytic verrucous hyperplasia (33), followed by erythroplakia (11.8), erythroleukoplakia (10.7), oral submucous fibrosis (OSF) (8.6), and leukoplakia (5.4). After adjusting for confounders, exophytic verrucous hyperplasia still had a 5.69 (4.47–7.24) times risk com- pared with leukoplakia. The corresponding figures for erythroplakia, erythroleukoplakia, and OSF were 2.25 (1.31–3.89), 2.00 (1.13–3.53), and 1.63 (1.29–2.06), respectively. Alcohol drinking elevated the overall risk of malignant transformation by 23% (1–52% and also triggered a higher risk in OSF (aHR = 1.62 (1.06–2.47)). The higher risk attributed to betel quids chewing was noted for exophytic verrucous hyperplasia (aHR=4.23 (1.55–11.55)).

Conclusions: The risk of malignant transformation to oral cancer varied with the subtypes of OPMD and was elevated in OSF and verrucous hyperplasia attributed to alcohol drinking and betel quids, respectively.

H. Stan McGuff, et all
Maxillary osteosarcoma associated with a dental implant

Clinical Implications: The use of endosseous implants has been associated with a low risk for the development of cancer. As the use of dental implants continues to expand, dentists need to be aware of this rare but devastating complication.

JADA, Vol. 139 http://jada.ada.org August 2008 , p 1052 – 1059

Bruno Ramos Chrcanovic [1,*], Aline Fernanda Cruz [2], Ricardo Trindade [3] and Ricardo Santiago Gomez [2]

Dental Implants in Patients with Oral Lichen Planus: A Systematic Review

Medicina 2020, *56*, 53; doi:10.3390/medicina56020053 www.mdpi.com/journal/medicina

Conclusions: The dental implant failure rate in OLP patients was 2.7% after a follow-up of approximately five years. When OLP patients developed oral squamous cell carcinoma (OSCC) the implant failure rate was 90.6%, but none of these implants lost osseointegration; the implants were removed together with the tumor. There are some recommendations to take into consideration when patients presenting OLP are intended to be rehabilitated with dental implants.

The difference in the failure rate between turned/machined and moderately rough implants was statistically significant ($p < 0.001$, log-rank test), and between implants installed in the maxilla in comparison to the implants installed in the mandible ($p = 0.022$, log-rank test), but not when implants in males and females were compared ($p = 0.890$, log-rank test) (p4/10).

Pfammatter Chantal et al

Metastases and primary tumors around dental implants: A literature review and case report of peri-implant pulmonary metastasis

Conclusion: Peri-implant metastases and primary tumors are rare. Every untypical or refractory reaction to the treatment of peri-implantitis is suspicious for malignancy as long as the contrary remains unproven. *(Quintessence Int 2012;43:563–570)*

Hirshberg A, Leibovich P, Buchner A: Metastases to the oral mucosa: analysis of 157 cases. J Oral Pathol Med 1993; 22: 385-90.

Metastases to the oral mucosa: analysis of 157 cases

A review of the English-language literature revealed 157 well-documented cases of metastatie lesions to the oral mucosa. Most (64%) were diagnosed in patients in their fifth to seventh decade. The frequency of the primary site differed between genders: for men it was the lung (35.5%) followed by the kidtiey (16%i) and skin (15%i); for women it was the breast (24%) followed by the genital organs (17%)). The most common oral site was the gingiva and alveolar mucosa (54.8%) followed by the tongue (27.4%.). and with much less frequency by the tonsil, palate, lip, buccal mucosa and floor of the mouth. Of the dentulous patients. 79%) exhibited the metastatie tumor in the attached gingiva. The clinical appearance of the metastatie oral lesion in most cases resembled hyperplastic or reactive lesions.

Ahmed, I. et al

Metastatic adenocarcinoma after intramedullary fixation of a tibial fracture

We present two cases of metastatic lung cancer which occurred at the site of a previously united tibial fracture. Both patients were treated with a locked intramedullary nail. The patients presented with metastases at the site of their initial fracture approximately 16 and 13 months after injury respectively.

We discuss this unusual presentation and review the relevant literature. We are unaware of any previous reports of a metastatic tumour occurring at the site of an orthopaedic implant used to stabilise a non-pathological fracture. These cases demonstrate the similar clinical presentation of infection and malignancy: a diagnosis which should always be considered in such patients.

Hesham Magdy Elgamely

Dentistry and Oral Health

Dentistry 2017, 7:6(Suppl) DOI: 10.4172/2161-1122-C1-018

Results: We found 13 articles published between the years 1996 and 2009, referencing 18 cases in which the osseo-integrated implants are associated with oral squamous cell carcinoma. Of those, six articles were excluded because they did not meet the inclusion criteria. Of the 18 cases reported, only seven cases did not present a previous history of oral cancer or cancer in other parts of the body.

Conclusions: Based on the review of these cases, a clear cause-effect relationship cannot be established, although it can be deduced that there is a possibility that implant treatment

may constitute an irritant and/or inflammatory cofactor, which contributes to the formation and/or development of OSCC. The aim of this retrospective study was to evaluate the survival of dental implants placed after ablative surgery, in patients affected by oral cancer treated with or without radiotherapy. We collected data for 34 subjects (22 females, 12 males; mean age: 51±19) with malignant oral tumors who had been treated with ablative surgery and received dental implant rehabilitation between 2007 and 2012. Postoperative radiation therapy (less than 50 Gy) was delivered before implant placement in 12 patients. A total of 144 titanium implants were placed, at a minimum interval of 12 months, in irradiated and non- irradiated residual bone. Implant loss was dependent on the position and location of the implants (P=0.05–0.1). Moreover, implant survival was dependent on whether the patient had received radiotherapy. This result was highly statistically significant (P<0.01). Whether the implant was loaded is another highly significant (P<0.01) factor determining survival. We observed significantly better outcomes when the implant was not loaded until at least 6 months after placement.

(no literature came with this article)

J.E. Scipio Oral Oncology 37 (2001) 393±396

Case report: Metastasis of breast carcinoma to mandibular gingiva

(not associated to implants)

Beatriz Carreira Nestares et al

Carcinoma epidermoide oral alrededor de implantes osteointegrados: a propósito de un caso y revisión bibliográfica

Rev Chil Cir. 2017. http://dx.doi.org/10.1016/j.rchic.2017.01.002

Abstract: Squamous cell carcinoma surrounding osseointegrated dental implants: Clinical case and references review

Abstract Currently, dental implants oral rhab is considered as the best choice for edentulism partial or complete treatment. However, this treatment has some associated medical complications such as surrounding gum squamous cell carcinoma. Even though there are not

that many cases described in medical literature, it could be appropriated to determine whether there is any relation between this neoplasic disease and the dental implants.

Presenting a 85-year-old women with PMH of lichen planus, ex-smoker and osseointegrated dental implant in areas 34, 45 and 46, with surrounding implant gum area Squamous cell carcinoma.

Ilana Kaplan et al

Clinicopathologic evaluation of malignancy adjacent to dental implants

Objective. The aim of this study was to describe a new case series of peri-implant malignancy, review the literature, and discuss the implications of malignancies resembling peri-implantitis. Study Design. This study was a retrospective analysis of cases from 2000 to 2016. Results. Seven patients (two males and five females), aged 44 to 89 years, were included, representing 1.5% of oral malignancy cases. Five cases were squamous carcinoma, one of basal cell carcinoma, and one of carcinoma of metastatic origin. Six cases presented with nonulcerated overgrowth, with bone loss in three and massive osteolysis in one. Misinterpretation as peri-implantitis delayed diagnosis in six cases. Risk factors included previous oral malignancy (2), potentially malignant conditions (2), and smoking (1). Of the 47 cases in the English language literature, 85% were squamous cell carcinoma and 8.5% had distant metastasis. Most cases had one or more risk factors.

Conclusions. Peri-implant malignancy may represent up to 1.5% of oral malignancy cases. Clinical features imitating peri- implantitis may delay diagnosis. Lesions failing to respond to treatment, especially in patients with pre-existing risk factors, should significantly increase suspicion. Histopathology is crucial for diagnosis. (Oral Surg Oral Med Oral Pathol Oral Radiol 2017;123:103-112)

Kwok, J. Eyeson, I. Thompson and M. McGurk

Dental implants and squamous cell carcinoma in the at risk patient – report of three cases J.

Osseointegrated dental implants are increasingly used in the rehabilitation of the dental patient. They have a particular role in dental rehabilitation following treatment for oral cancer. Data is presented that suggests that, in the at risk patient, squamous cell carcinoma may develop in association with dental implants.

“The presence of an implant may have been an incidental factor. But two patients developed SCC *de novo* directly within the cuff of peri- implant tissue, raising the possibility of a relationship between peri-implantitis and tumour. “

Favia Gianfranco et al.

Metastatic Breast Cancer in Medication-Related Osteonecrosis Around Mandibular Implants are co-existance of disease or pathology

Abstract

Many authors have considered dental implants to be unrelated to increased risk of medication-related osteo- necrosis of the jaw (MRONJ). Nevertheless, more recently, more cases of peri-implant MRONJ (PI-MRONJ) have been described, thus becoming a challenging health problem. Also, metastatic cancer deposits are not infre- quently found at peri-implant sites and this may represent an additional complication for such treatments. We present the case of a breast cancer patient with PI-MRONJ, presenting a clinically and radiologically unde- tected metastasis within the necrotic bone, and highlight the necessity of an accurate histopathological analysis. A 66-year-old female patient, who had received intravenous bisphosphonates for bone breast cancer metas- tases, came to our attention for a non-implant surgery-triggered PI-MRONJ. After surgical resection of the ne- crotic bone, conventional and immunohistochemical examinations were performed, which showed breast can- cer deposits within the necrotic bone.

Cancer patients with metastatic disease, who are undergoing bisphosphonate treatment, may develop unusu- al complications, including MRONJ, which is a site at risk for hosting additional metastatic deposits that may be clinically and radiologically overlooked. Such risk is increased by previous or concomitant implant proce- dures. Consequently, clinicians should be prudent when performing implant surgery in cancer patients with advanced-stage disease and consider the possible occurrence of peri-implant metastases while planning adequate treatments in such patients.

http://www.amjcaserep.com/abstract/index/idArt/894162

Irit Allon, Aya Pessing , Ilana Kaplan et al.

Metastatic Tumors to the Gingiva and the Presence of Teeth as a Contributing Factor: A Literature Analysis

Conclusions: The gingiva is the most common site for me- tastases to oral soft tissues, with strong association with the presence of teeth. This finding may be related to the role of inflammation in the attraction of metastatic cells to chroni- cally inflamed gingiva. J Periodontol 2014;85:132-139.

doi: 10.1902/jop.2013.130118

Metastatic tumours to the oral cavity – Pathogenesis and analysis of 673 cases

Abraham Hirshberg, Anna Shnaiderman-Shapiro, Ilana Kaplan , Rannan Berger

Oral Oncology doi:10.1016/j.oraloncology.2007.09.012

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Sudhir Bhandari (et al) MDS,[a] Vidya Rattan, MDS,[b] Naresh Panda, MS,[c] Kim Vaiphei, MD,[d] and Bhagwant Rai Mittal, MD[e]

Oral cancer or periimplantitis: A clinical dilemma

The Journal of Prosthetic Dentistry , June 2016, 158 – 161------

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R. Shaw, D. Sutton , J. Brown, J. Caawood,

Int. J. Oral Maxillofac Surg 2004: 33: 353-355

Further malignancy in field change adjacent to osseointegrated implants .

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*Alberto Rodriguez-Archilla** *and Maria Luna-Berral*

Oral Cancers Adjacent to Dental Implants: A Descriptive Study

Background: Trauma and chronic inflammation are controversial factors because of their potential role as an initiator or as an aggravating factor in the oral carcinogenesis process. Dental implants are related to chronic inflammatory processes and could act as a potential risk factor for oral cancer. **Objective:** To analyze the oral cancer cases adjacent to dental implants.

Methodology: A PubMed database search on studies of oral cancers adjacent to dental implants was conducted. **Statistical analysis:** The descriptive statistic included means, standard deviations, ranges and percentages. For the comparison of continuous variables, the Student's t-test was used and, for the comparison of categorical variables the Pearson Chi-square test was applied.

Results: Thirty studies describing 62 cases of oral cancer adjacent to dental implants were included in this review. These cancers were observed more frequently in patients with an average age of almost 67 years, female gender and mandibular location. The most prevalent harmful habit was the combined consumption of tobacco and alcohol and the most common oral risk lesion was leukoplakia. Almost all were oral squamous cell carcinomas and half were moderately differentiated.

Conclusion: Oral cancers adjacent to dental implants seem to have similar characteristics than tumors not related to dental implants.

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http://dx.doi.org/10.31487/j.DOBCR.2019.03.04

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The Importance of Histopathological Diagnosis in the Management of Lesions Presenting as Peri-Implantitis

ABSTRACT

Purpose: This study is a histopathological analysis of lesions clinically diagnosed as peri-implantitis (PI). *Materials and Methods:* This retrospective study included microscopic findings in 117 peri-implant biopsies from lesions

presenting clinical and radiographic features of peri-implantitis.

Results: The study group included 117 biopsies, mean age 55.2 years; 60.9% of biopsies were from failing implants during explantation, the remaining from surviving implants. All cases showed microscopic evidence for inflammation; however, although 41% exhibited only nonspecific inflammation, 29.9% exhibited actinomyces-related inflammation, 18.8% pyo- genic granuloma (PG), and 10.3% giant cell granuloma (GCG). Differences in implant failure rates between pathological diagnostic groups were not statistically significant. Lesions with simple inflammation could not be distinguished clinically or radiographically from the potentially destructive lesions.

Conclusions: There were no clinical features which could distinguish PI with simple inflammation from potentially destructive lesions mimicking PI, such as GCG, PG, and actinomycosis. However, to control GCG and PG surgical procedures would be recommended, actinomycosis would indicate specific antibiotics, whereas in nonspecific inflamma- tion, these measures may not be indicated. The results of the present study provide evidence for the importance of early microscopic examination of lesions presenting clinically as peri-implantitis, a step toward more accurate diagnosis and improved treatment of PI and lesions mimicking PI.

KEY WORDS: actinomyces, giant-cell-granuloma, inflammation, peri-implantitis

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*Clinical Implant Dentistry and Related Research, Volume *, Number *, 2013*

F. Khoja; J. Eriguel, T. Wiedemann, H. Talib

Oral Malignancy Mimicking Peri-Implantitis: A Clinical Dilemma

AAOMS Postersession 2019; New York University

According to Kaplan et al. 2017, 1.5% of the oral malignancies mimic the appearance of peri-implantitis.

Philip J. Brabyn*, Luis Naval, Ian Zylberberg, Mario Fernando Muñoz-Guerra

Oral squamous cell carcinoma after dental implant treatment

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