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Instalação de implantes em pacientes com histórico de doenças periodontais

Implant installation in patients with periodontal disease history

Instalación de implantes en pacientes con historia de enfermedades periodontales

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Resumo

Já está estabelecido na rotina clínica de reabilitação oral a inclusão de implantes osseointegrados. A busca por esse tipo de tratamento tornou-se popular e, com ele, os problemas de manutenção devem ser bem estudados e tratados por parte dos profissionais dessa área. É improvável que muitos desses pacientes, candidatos ao tratamento com implantes, não tenham sido vítimas de nenhum tipo de doença periodontal. No planejamento da reabilitação, em algumas situações, podem ocorrer falhas logo após a instalação dos

implantes ou mais tarde, quando o implante já está osseointegrado. Essas falhas geralmente estão relacionadas à contaminação bacteriana tanto no ato operatório, como na subsequente colonização desses patógenos na região periimplantar. Este artigo tem como objetivo realizar um levantamento da literatura médica vigente sobre a instalação de implantes em pacientes com histórico de doenças periodontais. Como metodologia, foi realizada uma varredura nos portais de indexação Scopus, Web of Science e Google Scholar com os termos implantodontia, periodontia e doenças periodontais. Foram encontrados 9.876 artigos referentes ao tema e foram selecionados 25 artigos levando em consideração a relevância ou fator de impacto das revistas onde esses artigos foram publicados. Conclui-se que existe uma relação direta entre perda de implantes dentários e doenças periodontais.

Palavras-chave: Implantologia; Periodontia; Doença Periodontal.

Abstract

It is already established in the clinical routine of oral rehabilitation the inclusion of osseointegrated implants. The search for this type of treatment has become popular and, with it, maintenance problems should be well studied and treated by professionals in this area. It is unlikely that many of these patients who are candidates for implant treatment were not victims of any periodontal disease. In rehabilitation planning, in some situations, failures may occur soon after implant placement or later, when the implant is already osseointegrated. These failures are generally related to bacterial contamination both during surgery and subsequent colonization of these pathogens in the periimplant region. This article aims to conduct a survey of the current medical literature on the installation of implants in patients with a history of periodontal disease. As a methodology, Scopus, Web of Science and Google Scholar indexing portals were scanned with the terms implantodontics, periodontics and periodontal diseases. A total of 9,876 articles were found and 25 articles were selected considering the relevance or impact factor of the journals where these articles were published. It is concluded that there is a direct relationship between dental implant loss and periodontal disease.

Keywords: Implantology; Periodontics; Periodontal disease.

Resumen

Ya está establecido en la rutina clínica de rehabilitación oral la inclusión de implantes osteointegrados. La búsqueda de este tipo de tratamiento se ha vuelto popular y, con ella, los problemas de mantenimiento deben ser bien estudiados y tratados por profesionales en esta

área. Es poco probable que muchos de estos pacientes que son candidatos para el tratamiento con implantes no hayan sido víctimas de ninguna enfermedad periodontal. En la planificación de la rehabilitación, en algunas situaciones, las fallas pueden ocurrir poco después de la colocación del implante o más tarde, cuando el implante ya está osteointegrado. Estas fallas generalmente están relacionadas con la contaminación bacteriana durante la cirugía y la posterior colonización de estos patógenos en la región periimplantaria. Este artículo tiene como objetivo realizar una encuesta de la literatura médica actual sobre la instalación de implantes en pacientes con antecedentes de enfermedad periodontal. Como metodología, se escanearon los portales de indexación de Scopus, Web of Science y Google Scholar con los términos implantodoncia, periodoncia y enfermedades periodontales. Se encontraron un total de 9,876 artículos y se seleccionaron 25 artículos considerando la relevancia o el factor de impacto de las revistas donde se publicaron estos artículos. Se concluye que existe una relación directa entre la pérdida de implantes dentales y la enfermedad periodontal.

Palabras clave: Separadas; Por; Ponto e vírgula.

1. Introduction

The use of osseointegrated implants for the purpose of rehabilitating edentulous patients has been confirmed by numerous Studies evidence of the effectiveness of implants in the procedures oral rehabilitation *(Paraguassu & de Cardenas, 2019)*. The failure of implants is decreasing and when it occurs is usually related to bacterial infection *(Franch, Luengo & Bascones, 2004), (Lacerda, 2019), (Tillmanns, Hermann, Tiffee, Burgess, & Meffert, 1998).* Inflammatory lesions that occur in periimplant tissues usually are opportunistic infections that can progress intensely and lead to implant loss *(Lang, Brägger, Salvi, & Tonetti, 2005), (Figueira, 2019).*

Therefore, the long-term preservation of implants and prostheses depends solely on early and accurate diagnosis changes in soft and bone tissue, and the prevention of possible progress of these changes by monitoring and maintenance of the work performed. It is understood as maintenance, the necessary procedures to solve the perceived problems during the examinations performed in the control, for the conservation of desired state of health *(Sendyk, Sendyk & Gromatzky, 2005).*

The parameters adopted in periodontal examinations should may also be applied to peri-implant examinations such as furrow sounding, marginal height, sounding bleed, exudate, mobility, presence of biofilm, and gingival inflammation, and although very important, their

clinical significance for predicting The longevity of implants is much questioned *(Lacerda, 2019).*

This article aims to conduct an epidemiological survey of the current medical literature on implant placement in patients with a history of periodontal disease. With the clinical practice and the theoretical basis, it is very clear the relationship between implant loss and periodontal diseases, but periodontal diseases are not a major factor for the contraindication of dental implants, and the patient and professional should always be alert and careful, to prevent loss of bone insertion around the implant.

2. Methodology

This study is a review of the current medical literature on patients with periodontal disease who underwent dental implant installation. Similar studies were performed by *Figueira (2019) and Pereira et al. (2018).* Scopus, Web of Science, and Google Scholar indexing portals were scanned for the terms implantodontics, periodontics, and periodontal diseases. We found 9,876 articles referring to the topic and 25 articles were selected considering the relevance or impact factor of the journals where these articles were published.

3. Literature Review

Osseointegrated implant therapy aims at replacing teeth that could not be kept in the oral cavity through the periodontal treatment or who have been missed by failures prosthetics, endodontics, fractures, caries disease, injuries, agenesis and iatrogenesis *(Francischone, Costa, Francischone, Ribeiro & Silva, 2002).*

If increased implant use is considered increase in the prevalence and incidence of periimplant diseases can also be expected *(Paraguassu & Lacerda, 2019),* (Sumida, Ishihara, Kishi & Okuda, 2002). Although not indicated against implant treatment for individuals with a history of periodontitis, they should be warned about the higher risk of loss as there are still higher proportions in failures as well as in smok ers. *(Paraguassu & Lacerda, 2019), (Yi, Ericsson, Kim, Carlsson & Nilner, 2001).*

It was observed that there is a positive correlation between periodontal condition and the condition of the tissues around implants after one year of follow-up *(Brägger, Bürgin, Hämmerle & Lang, 1997),* evidence that confirms the understandings from other clinical studies that observed a greater frequency of Actinobacilus Actinimycetemcommitans and Porphyromanas Gingivalis in partially edentulous individuals, rehabilitated with implants

when compared to patients total edentuli. Other studies report that increased probing depth and pathogen detection at sites three to four years old when compared to sites with one to two years demonstrates the possibility of transmission of pathogens of the periodontal sites, which would act as reservoirs for bacterial colonization. (Baelum & Ellegaard, 2004), *(Campos, 2019).*

Therefore, it is concluded that microflora associated with periimplantitis It is similar to that associated with periodontal disease. *(Van Winkelhoff, Goené, Benschop & Folmer 2000), (Van Winkelhoff & Wolf, 2000)*

The periimplant mucosa is also similar to the periodontal and consists of keratinized oral epithelium, epithelium junctional epithelium and a zone of connective tissue formed by periimplant collagen fibers anchored to the bone crest marginal and arranged parallel to the implant surface. Even though similar, some differences in tissue composition, organization and insertion between the periodontal and peri-implant make probing conditions and resistance to different infections. Borehole depth measurement demonstrates that the probing resistance of the gum is superior to that of periimplant mucosa. Similarly, resistance to infection is greater in gum tissue. *(Lindhe & Karring, 2005), (Alves, 2006), (Jepsen, Rühling, Jepsen, Ohlenbusch & Albers, 1996), (Arada & Perez, 2019).*

Among the causes of the advance of periodontal disease and peri-implant, smoking appears as a collaborator for the formation of pockets, inflammation, bleeding, and implant failures, according to a fourteen-year study in patients with a history of previous periodontitis *(Baelum & Ellegaard, 2004).*

In another study, with partial edentulous patients previously treated patients with generalized periodontitis and aggressive generalized periodontitis, the success rate in the treatment with osseointegrated implants in both the maxilla and jaw was analyzed. It was concluded that treatment with implants is a successful treatment in oral rehabilitation of patients with partial dentition loss treated for both types of periodontitis *(Paraguassu & Lacerda, 2019).* Thus, as in another prospective clinical study of Forty-three patients who lost teeth due to periodontal disease and were rehabilitated with fixed implant prostheses, it was concluded that this type of treatment is acceptable and predictable and valid for rehabilitation, both in total losses as partial although it is emphasized that the degree of aggressiveness of periodontal disease may influence the rates of success *(Yi et al., 2001).* Patients with previous diagnosis of aggressive periodontitis may have success rates 10% lower than those presented by patients diagnosed with periodontitis chronic *(Wong, 1996), (Paraguassu, da Silva, Lacerda, Guimarães, Gomes & 2019), (Manunges, & Dirta, 2019).*

According to the author, the presence of bacteria periodontal disease is a risk factor for peri-implantitis, and in his study examined the transmission of these bacteria from the alveoli periodontal tissues to the peri-implant tissue, reaching the conclusion of that the elimination of these pathogens from the patient's oral cavity prior to implant placement, it may inhibit colonization by the reducing the risk of periimplantitis *(Sumida et al., 2002)*

The detection of DNA of the bacterial species studied in áreas apparently healthy in peri-implant sites may indicate risk of peri-implantitis, leading to the establishment of a more rigorous prevention control in patients is mandatory, the in order to ensure the success of the treatment *(Almeida e al., 2006), (Paraguassu, & de Cardenas, 2019).*

Implantology, since its inception, has been an area that has acquired considerable relevance in dentistry. This is due to the implant's ability to more satisfactorily replace a lost dental element or even several teeth. Within this context, there is the possibility of implants replacing teeth diagnosed with periodontitis are condemned by other skilled professionals who advocate the use of space and bone tissue when it is still possible. However, implants placed at these sites present similar problems to the removed teeth such as peri-implant mucositis and peri-implantitis.

4. Conclusion

Bacteria play an important role in the etiology periimplant mucositis and periimplantitis. Remaining Teeth with periodontal disease may function as a reservoir of opportunistic periodontal pathogens for implant colonization. Smoking contributes considerably to the development of periodontal and perimplant diseases. Periodontal health should be a concern before implant therapy because treatment of peri-implant infection will aim to suppress common bactéria periodontal and peri-implant sites and the establishment of a local environment and microflora compatible with peri-implant health. Infection prevention is still an important weapon for reduction of failures of rehabilitative treatments. In order to boost new knowledge and maintain the ever evolving dynamics of implantology and periodontics, this article is another grounding tool for theoretical studies on the subject.

References

Almeida, R. F., Pinho, M. M., Lima, C., Faria, I., Santos, P., & Bordalo, C. (2006). Associação entre doença periodontal e patologias sistêmicas. *Revista Portuguesa de Medicina Geral e Familiar*, *22*(3), 379-90.

Alves, M. F. R. (2006). Detecção de actinobacillus actinomycetemcomitans em sítio periimplatares (Doctoral dissertation, Dissertação de Mestrado]. Taubaté: Universidade de Taubaté).

Arada, J. M. G., & Perez, Z. C. (2019) Phytotherapy in dentistry: survey of products of plant origin for health oral. *Brazilian Journal of Implantology and Health Sciences*, 1(3), 35-40. Crosrref

Baelum, V., & Ellegaard, B. (2004). Implant survival in periodontally compromised patients. *Journal of periodontology*, 75(10), 1404-1412.

Brägger, U., Bürgin, W. B., Hämmerle, C. H., & Lang, N. P. (1997). Associations between clinical parameters assessed around implants and teeth. *Clinical Oral Implants Research*, *8*(5), 412-421.

Campos, J. M. C. (2019). The use of medical and phytotherapic plants in brazilian public health. *Periódicos Brasil – Medicina e Ciências da Saúde*. 1(1), 01-10.

Franch, F., Luengo, F., & Bascones, A. (2004). Evidencia microbiana de la periimplantitis, factores de riesgo coadyuvantes, diagnóstico y tratamiento según los protocolos científicos. Avances en Periodoncia e Implantología Oral, 16(3), 143-156.

Francischone, C. E., Costa, C. G., Francischone, A. C., Ribeiro, H. T., & Silva, R. J. (2002). Controlled orthodontic extrusion to create gingival papilla: A case report. *Quintessence international*, *33*(8).

Figueira, K. S. (2019). Revisão da literatura médica vigente sobre as dificuldades frente a implantoplastia. *Brazilian Journal of Implantology and Health Sciences*, 1(1), 2-17. Crosrref

Jepsen, S., Rühling, A., Jepsen, K., Ohlenbusch, B., & Albers, H. K. (1996). Progressive peri-implantitis. Incidence and prediction of peri-implant attachment loss. *Clinical oral implants research*, 7(2), 133-142.

Lacerda, J. P. (2019). Photoelastic analysis of the stress distribution produced in the mandible by the simulation of masticatory effort in mucous-supported overdenture and total denture. *Periódicos Brasil – Odontologia*, 1(3), 32-41.

Lang, N. P., Brägger, U., Salvi, G., & Tonetti, M. S. (2005). Terapia periodontal de suporte (TPS). *Lindhe J, Karring T, Lang NP. Tratado de periodontia clínica e implantologia oral. 4ª ed., Rio de Janeiro: Guanabara Koogan*, 759-83.

Lindhe, J., & Karring, T. (2005). E LANG, NP Tratado de Periodontia Clínica e Implantologia Oral. *Rio de Janeiro/RJ: Editora Guanabara Koogan S*.

Manunges, C., Z., & Dirta, C. M. (2019). Edentulismo e sua relação com a autoavaliação da saúde: análise secundária do Estudo SABE Ecuador 2009. *Periódicos Brasil – Pesquisa Científica*. 1(3) 20-30

Paraguassu, É. C., & de Cardenas, A. M. C. (2019). Sociodemographic characterization of users of total tissue-supported and implant-supported prostheses in the municipality of macapá, Brazil. *International Journal of Development Research*, *9*(02), 26081-26084.

Paraguassu, É. C., & Lacerda, J. P. (2019). Oral health of the elderly in Brazil: Systematic review. *Brazilian Journal of Implantology and Health Sciences*, 1(2), 25-33. Crosrref

Paraguassu, É. C., da Silva F. K., Lacerda, J. P., Guimarães, U. G., & Gomes, C. E. (2019). Qualidade de vida e satisfação em usuários de prótese total no estado do Amapá, Brasil. *Revista Eletrônica Acervo Saúde*, (27), e876-e876.

Pereira, A.S. et al. (2018). *Metodologia da pesquisa científica*. [*e-book*]. Santa Maria. Ed. UAB/NTE/UFSM

Sumida, S., Ishihara, K., Kishi, M., & Okuda, K. (2002). Transmission of periodontal disease-associated bacteria from teeth to osseointegrated implant regions. *International Journal of Oral & Maxillofacial Implants*, 17(5).

Tillmanns, H. W., Hermann, J. S., Tiffee, J. C., Burgess, A. V., & Meffert, R. M. (1998). Evaluation of three different dental implants in ligature-induced peri-implantitis in the beagle dog. Part II. Histology and microbiology. *International Journal of Oral and Maxillofacial Implants*, 13(1), 59-68.

Sendyk, C. L., Sendyk, W. R., & Gromatzky, A. (2005). Periodontia e Implantodontia: a atuação clínica baseada em evidências científicas. Implantodontia.

Van Winkelhoff, A. J., Goené, R. J., Benschop, C., & Folmer, T. (2000). Early colonization of dental implants by putative periodontal pathogens in partially edentulous patients. *Clinical oral implants research*, 11(6), 511-520.

Van Winkelhoff, A. J., & Wolf, J. W. A. (2000). Actinobacillus actinomycetemcomitans-associated peri-implantitis in an edentulous patient: A case report. *Journal of clinical periodontology*, 27(7), 531-535.

Wong, K. (1996). Immediate implantation of endosseous dental implants in the posterior maxilla and anatomic advantages for this region: a case report. *International Journal of Oral & Maxillofacial Implants*, *11*(4).

Yi, S. W., Ericsson, I., Kim, C. K., Carlsson, G. E., & Nilner, K. (2001). Implant-supported fixed prostheses for the rehabilitation of periodontally compromised dentitions: a 3-year prospective clinical study. *Clinical implant dentistry and related research*, *3*(3), 125-134.

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