Article

Deformação do colar de implantes com junta friccional – estudo qualitativo preliminar pela Espi

January 2012

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Abstract

The collar region of osseointegrated implants is frequently exposed to masticatory/parafunc- tional loads, representing a potential compromised area subjected to deformation, especially in narrow-diameter, internal connection dental implants. This study evaluated the effect of the collar of frictional implants (Kopp) at two different diameters (4.3 mm and 5.5 mm) under static compressive loads (axial and oblique) of two magnitudes (50 and 100 N) through the Electronic Speckle Patterns Interferometry (Espi). The Espi is a technique still little used in dentistry that consists in comparing images before and after loading, obtained from the reflection of a laser light source focused on a real object surface resulting in a rough fringe pattern. The in vitro study aimed to test the applicability of the ESPI technique and the hypothesis that the larger the diameter of the implant, the greater its resistance to deforma- tion. It was possible to obtain reproducible qualitative results about the deformation of the implant collar to loading, validating this technique. Fringes were observed horizontally in the centric loads and diagonally in eccentric loads. These results may suggest the deforma- tion suffered by the sample. The Espi technique was feasible to assess the deformation of the region observed and the hypothesis was confirmed, since the smaller implant diameter presented greater deformation.

Citations (1) References (30)

... A revista da literatura demonstrou que este ainda não é um conceito totalmente firmado (Pontes et al., 2008). A Implantodontia tem se beneficiado pela utilização de métodos de análise de tensões amplamente utilizados na Física e nas Engenharias Civil, Mecânica e Aeroespacial, como: a extensometria (Abreu et al., 2012;Cho et al. 2014), a interferometria holográfica (Amaro et al., 2006;Campos et al., 2006;Gesualdi et al., 2007), a interferometria eletrônica por padrões de speckle (Rodriguez et al., 2004;Wahl; Sizo et al., 2012) , a fotoelasticidade (Termeie et al., 2014;Zanatta et al., 2014) e o método dos elementos finitos -MEF (Mori et al., 2002;Pigozzo et al., 2014). No entanto, poucos são os estudos que comparam duas ou mais técnicas (Iplikçioğlu et al., 2003;Cehreli et al., 2004;Anami et al., 2013;Rossi et al., 2014). ...

... Qualquer excesso de resina fotoelástica foi cuidadosamente removido com lâmina de bisturi n uma plataforma para aplicação de cargas de 3 mm de altura por 15 mm de diâmetro sobre cada pilar, a qual foi confeccionado em Co-Cr por meio de um cilíndro calcinável correspondente ao pilar. A carga cêntrica foi aplicada no centro da mesa e a excêntrica com um deslocamento de 5 mm do ponto central, o que simularia uma situação mais próxima da distância da região de crista/cúspide à fossa central de um primeiro molar inferior (Sizo et al., 2012) .Os modelos fotoelásticos levados individualmente aos testes no polariscópio, e uma ponta aplicadora de carga gerava cargas de 10, 20, 30, 40 e 50 N de forma cêntrica e excêntrica em dois pontos distintos da mesa para aplicação de cargas, isto é, no centro e a 5 mm do centro, respectivamente. Uma fotografia inicial sem aplicação de carga foi realizada para indicar a ausência de tensões no modelo fotoelástico previamente aos testes com carga.Os testes foram registrados e digitalizados por uma câmera digital (Canon EOS Rebel T2i) e trabalhados no software ImageJ ® (National Institutes for Health, Bethesda, Maryland, EUA) em computador com sistema operacional OS X Machintosh. ...

Distribuição das tensões promovidas por implantes cone Morse inseridos em diferentes níveis ósseos: análise fotoelástica e método dos elementos finitos

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Apr 2015

Sérgio Rodrigues Sizo

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Abedulnaser Hatim Warwar

Dental implants are a suitable option for the replacement of some or all missing teeth. The successfulinsertion of a biocompatible material into living tissue with little to no evidence of rejection has revolutionizedmedicine and dentistry. An increase in bone response was observed with local administration of growth hormonearound dental implants. Growth hormone may act as a bone stimulant in the ... [Show full abstract]

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Article

Can Osseointegration Be Achieved Without Primary Stability?

April 2019 · Dental Clinics of North America

Mohanad Al-Sabbagh · Walied Eldomiaty · Yasser Khabbaz

The osseointegration and survival of dental implants are linked to primary stability. Good primary stability relies on the mechanical friction between implant surface and surrounding bone with absence of mobility in the osteotomy site immediately after implant placement. Several factors have been found to affect implant primary stability, including bone density, implant design, and surgical ... [Show full abstract]

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Dental implants: Basic implant surgery

October 1999 · British dental journal official journal of the British Dental Association: BDJ online

Richard M Palmer · Paul Palmer · Phil Floyd

Implant surgery protocols differ slightly with individual systems. However, basic surgical principles are required to ensure successful osseointegration of the implant in the correct location which allows good aesthetics and loading.

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Dental implant complications - Extra-oral cutaneous fistula

July 2013 · British dental journal official journal of the British Dental Association: BDJ online

Ruaa Mahmood · Francy J Puthussery · T. Flood · K Shekhar

Dental implants have shown great success in recent years. However, in certain circumstances they can suffer from complications. It usually results from a combination of infection and host inflammatory responses or a lack thereof. This report documents an extra-oral cutaneous fistula associated with an osseointegrated dentoalveolar implant.

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Article

Dental Implants and the Use of rhBMP-2

October 2011 · Dental Clinics of North America

Daniel Spagnoli · Robert E Marx

Tissue engineering is an emerging field of medicine and dentistry that combines the body's natural biologic response to tissue injury with engineering principles. The goal is to replicate or reconstruct the natural form and function of missing tissues and organs. Tissue-engineered bone with native qualities will be necessary for implantation or migration of engineered teeth in the future, and is ... [Show full abstract]

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Surface Roughness of Implants: A Review

May 2011 · Trends in Biomaterials and Artificial Organs

Rama Krishna Alla · Kishore Ginjupalli · Nagaraj Upadhya · [...] · Rama Krishna Ravi

For centuries, clinicians have been attempting to replace missing teeth with suitable synthetic materials. Dental implants are fixtures that serve as replacements for the root of the missing natural tooth and becoming popular in the current day dental practice. Success or failure of the dental implant treatment is mainly based on the principles of creating and maintaining an interface between the ... [Show full abstract]

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The Effects of Simulated Bone Loss on the Implant-Abutment Assembly and Likelihood of Fracture: An I...

May 2013 · The International journal of oral & maxillofacial implants

Behzad Manzoor · Mahmood Suleiman · Richard M Palmer

Purpose: The crestal bone level around a dental implant may influence its strength characteristics by offering protection against mechanical failures. Therefore, the present study investigated the effect of simulated bone loss on modes, loads, and cycles to failure in an in vitro model. Materials and methods: Different amounts of bone loss were simulated: 0, 1.5, 3.0, and 4.5 mm from the ... [Show full abstract]

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Corrosion behavior of commercially pure titanium shot blasted with different materials and size of s...

February 2003 · Biomaterials

Conrado Aparicio · F.J. Gil · Carlos Fonseca · [...] · Josep A. Planell

Conrado Aparício · [...] · Josep A. Planell

It is well known that the osseointegration of the commercially pure titanium (c.p. Ti) dental implant is improved when the metal is shot blasted in order to increase its surface roughness. This roughness is colonised by bone, which improves implant fixation. However, shot blasting also changes the chemical composition of the implant surface because some shot particles remain adhered on the metal. ... [Show full abstract]

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Improving the efficiency of dental implantation through the application of platelet-rich autoplasma....

January 2016 · Research Journal of Pharmaceutical, Biological and Chemical Sciences

Sergey Sirak · E.N. Iarygina · D.V. Mikhalchenko · [...] · I.V. Koshel

Reducing the number of complications related with dental implantation and accelerating the recovery periods of patients is one of the most discussed problems in the current dentistry. Understanding the patho-physiology of the processes around the dental implant after it is installed, as well as the body's reaction to the implant, makes scientists and implant manufacturers search for means and ... [Show full abstract]

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Patient Selection and Treatment Planning for Implant Restorations

January 2014 · Dental Clinics of North America

Matthew Bryington · Ingeborg J De Kok · Ghadeer Thalji · Lyndon F Cooper

Dental implants are an indispensible tool for the restoration of missing teeth. Their use has elevated the practice of dentistry by improving both our technical ability to rehabilitate patients and general quality of life. To routinely achieve the associated high expectations, diligent attention to details must be observed and addressed from the outset. Of central concern is the attainment of ... [Show full abstract]

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VARIOUS METHODS USED FOR DENTAL IMPLANT STABILITY-A REVIEW

October 2016 · WORLD JOURNAL OF PHARMACY AND PHARMACEUTICAL SCIENCES

Shivam Agarwal · Vaibhav Mukund · Nisheeth Sharma · [...] · Siddharth Tevatia

ABSRACT Achieving primary stability of greatest importance, at the time of dental implant placement. A rigid fixation of implant within the host bone, in absence of micromotion is the most critical factor for successful osseointegration. Various methods are reported by the authors over the years, in literature to monitor implant stability, which include, tapping the abutment with a metallic ... [Show full abstract]

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