PERIODONTAL DISEASE INFLUENCE IN THE THERAPY IMPLANTATION

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CURRENT DATA ON IMPORTANT TOPICS - BASIS OF AN RATIONALE RESEARCH

Implant therapy in the last 3 decades has seen an unprecedented expansion. This phenomenon has many causes related to both the development and deployment of materials and techniques for making this therapeutic tool at large. Currently, virtually all patients, especially the young, who enters a dentist, asked and this therapeutic option. The need to evaluate jaw structure before solving clinical cases with dental implants required increasingly more so to have an ethical attitude towards the patient, with the possibility of presenting its morpho-functional data dento-maxillo-facial and for the doctor to have documentation in case long-term follow-up. Validation of the biological process that leads to the achievement and maintenance of osseointegration is the condition of deep periodontal tissue, are directed towards achieving a close adaptation to confer stability. This paper was intended to be a comprehensive study of complex monitoring, a set of clinical parameters dental, periodontal, prosthetic and radiological associates implant-prosthetic treatment, in order to find the association between efficacy arguments prosthetic chosen and some clinical variables and radiological regarding biological substrate and muco-dental-periodontal bone.

CHAPTER 1
NORMAL ALVEOLAR BONE. MICROSCOPE MORPHOLOGY AND DEVELOPMENT

Alveolar bone of anatomically represents an apophysis of the maxillary and mandibular bone that serves to support and maintain teeth. Bone remodeling process begins during fetal period accelerates and continues throughout childhood life. Cortical bone remodeling rate in the first two years previous life reaches approximately 50% in some bones. Living bone is never resting metabolic remodels and he adjusts matrix and mineral content in the sense determined by functional necessities bone moment. Control is achieved by combining bone and osteolytic processes to achieve a balance between apposition and resorption.
Periodontal bone defects is a common sequela of periodontitis. Diagnosing their presence and establish their morphology before surgical access requires careful clinical examination combined with enough quality radiographs for diagnosis.

This presents a clinical challenge that should not be underestimated.

Diagnosis of the presence and morphology of periodontal bone lesions is a major clinical challenge. This is done mainly by a combination of clinical information derived from the assessment of the level of adhesion with the information derived from the intra-oral X-rays of high quality using the parallel method for formulating a diagnosis.

Implant osseointegration success is possible by optimizing dentoperiodontal periimplantar status by appropriate surgical treatment, the use of biomaterials and implant design favorably.

Dentoperiodontal post-implantation treatment prophylaxis is needed. Aesthetic and functional success of an implant depends not only on the hard tissue but also on the configuration of the surrounding soft tissue.
CHAPTER 4

RESEARCH ON THE BONE DAMAGE DEVELOPMENT IN PERIODONTAL DISEASE

4.1 INTRODUCTION

The purpose of periodontal diagnostic techniques are to provide the clinician with objective information about the type, severity and location of periodontal disease. Based on the results, the doctor is able to formulate a treatment plan and then to assess and monitor the effectiveness of treatment.

4.2 PURPOSE OF THE STUDY

Despite the known limitations of evaluation by periodontal probing and X-ray examination, the objectives of this study were: (a) assess the reliability of clinical and radiographic measurements of periodontal defects at various study groups (b) evaluating a possible association between clinical and radiological measurements selected the interproximal bone defects and or root.

4.3 MATERIAL AND METHOD

4.3.1 SETTING UP STUDY GROUPS

For this study we investigated a group consisting of 79 patients, 53 women and 26 men, aged between 18 and 72 years who presented to the Clinic of Periodontology and in my private practice in the period 2010-2012.
4.3.2 CLINICAL EVALUATION

Patients included in the study clinical examination sought to highlight the form of the disease both by evaluating inflammatory signs - bleeding gums as well as by assessing other characteristics of periodontal support.

4.3.3 RADIOGRAPHIC EVALUATION

At the alveolar bone radiographic evaluation was defined as the distance along the tooth from the cemento-enamel junction to alveolar crest level.

Distance from the cemento-enamel junction to the alveolar crest was measured using a millimetric compass (sensitivity 0.1 mm). In actual measurements, all interproximal surfaces were first measured on periapical radiographs, followed by bitewing radiographs surfaces and panoramic X-rays were measurement performed in the same center radiographically by the same person, thus aiming to eliminate the shortcomings related to adjustment differences technical parameters of the machine or radiologist assistant. Also use the same type of dental film. All radiographic evaluations were compared only with attachment. Results levels from group A and B were evaluated by bone from group C.

4.4 RESULTS AND DISCUSSION

4.4.1 RESULTS OF CLINICAL EVALUATION

4.4.2 RADIOGRAPHIC EVALUATION RESULTS

For radiographic evaluation were studied in patients with periodontal disease to analyze the quality of information made by each imaging exploration areas of interest, compared with clinical assessment. It was intended type of bone lysis, location, severity and number of injuries twinning vertical bony walls. Radiographic evaluation of bone was an indispensable diagnostic and indication of implantation, allowing assessment of interdental bone and eventually interradicular. Periodontal survey results were different from those obtained radiographic averaging $1.18 \pm 1.51$
mm. These changes were statistically significant (p <0.05). Bitewing radiograph showed the precision of the analyzes radiographic crestal bone (0.22 ± 0.87 mm - p <.05).

4.4.2.1 Evaluation by OPT

OPT is a comprehensive study, obtaining a single movie of all dentoalveolar system.

Due to its relatively mild simplicity without making the patient without vomiting reflexes associated with rapid implementation, low price and irradiating a recommended initial dental exam.

4.4.2.2 Evaluation by computed tomography

Computed tomography (CT) and then spiral computed tomography (spiral CT) and the type multislice CT (MSCT) have revolutionized exploration technique achieved by fine sections axially and coronal, 2D and 3D reconstructions by
- Reduced time for obtaining images
- The quality of bone and dental imaging, especially
- Specify the size and reports of traumatic injuries, tumor and inflammatory maxillofacial.

CT technology has allowed a thorough exploration well infraosseos.

The decision to implant the patient is recommended periodontal dental volumetric computerized tomography as the minimal dose of radiation to the patient is 5 times lower than for a conventional CT, the effective exposure of the patient is minimal, avoid positioning errors patient, geometric measurements are accurate 1:1 scale, the reports are available on CDs or photo paper. Were evaluated and compared the results of radiographic measurements, the distance between the cemento-enamel junction and the alveolar crest with the results of measurements in clinical probing all the study groups. There was only a small mean difference to panoramic radiography but this was not statistically significant, the arithmetic mean 0.20 ± 1.35 mm (p > 0.05) and periapical radiography had the lowest accuracy of the methods radiographic 0.14 ± 1.19 mm (p > 0.05). In conclusion, we can say that both bitewing and panoramic radiography are preferred to assess bone periapical images.
At the age of 50 years, about 50% of the subjects had significant bone loss greater than 4 mm in 10% or more sites, and 6 mm or more, in about 5% sites. Deep infraoosseous defects were rarely found before the age of 40 years. Approximately 20% of patients at least 50 years had 4 mm deep intra-osseous defects or less, not more than 5% by sites. Bone loss was more pronounced in the maxilla, especially to the molars. According to these results, high-quality scans (CT) provides an excellent overview of periodontal damage.

4.4.2.3 Evaluation of bone density

CT Evaluation of implantation sites avoid to assess sites and provides diagnostic information that other image or combination of imaging techniques can not provide.

CT has several advantages over conventional radiography. First, eliminate duplication CT images of structures outside the area of interest. Density structures obtained by this technique are absolute and quantitative imaging can be used to differentiate tissues in the region (eg muscle, 35-70 HU, fibrous tissue, 60-90 HU, cartilage, 80-130 HU; bone 150 -1800 HU) and characterize bone quality (D1 bone > 1250 HU; D2os, 750-1250 HU, D3 bone, 375-750 HU, D4 bone, < 375 HU) (Misch, 2008).

An implant placed in the bone of poor quality, with thin cortex traveculară low density (bone type IV) has a greater chance of failure compared to other types of bone.

Regional anatomical differences jaw and bone structure may explain some of the variations in the rate of clinical success in the treatment of maxillary implant. In addition this information may explain the increase in mandibular bone resorption. Studies have shown that maxillary implant therapy has a significantly higher rate of clinical failure than the mandible and part of the blame on regional variation in the jaw bone structure (Devlin et al., 2008).

D1 bone is often found in previous mandibles with moderate to severe resorption. The percentages of bone contact at the light microscopic implant. Interfața higher in D1 bone type and more than 80%. In addition, the bone density the greater strength than any other type. The strongest bones also benefit from the highest - implant. D2 bone contact is a combination of dense cortical bone to the ridge - porous and a dense trabeculație inside. D2 of the bone trabeculae are 40% to 60% stronger.
than the D3. This type of bone occurs most frequently in previous jaw area, followed by the posterior mandible. Occasionally seen in anterior maxilla, especially for a single missing tooth. D2 provides excellent bone healing bone-implant interface and osseointegration is very common.

D3 is composed of thin porous cortical bone on the ridge crest and fine trabecular bone. Trabeculae are about 50% weaker than D2. D3 is found most often in the posterior maxilla and previous areas of each arc. D3 the anterior maxilla usually has a smaller width than its counterpart mandibular D3. D3 bone is not only 50% less than D2, but the bone-implant contact surface is also less favorable. These additional factors may increase the risk of implant failure.

D4 bone has a very low density and little or no crestal cortical bone. It's the opposite spectrum of D1 (dense cortical bone). The most common locations for this type of bone are in the posterior region of the jaw. It is rarely seen in mandible. Density bone may be up to 10 times lower than the cortical bone of D1 bone-implant contact.

**4.4.2.4 Evaluation by Cone Beam CT (CBCT)**

In order to indicate the correct application techniques as surgical periodontal therapy in the therapeutic algorithm in maxillary molars CBCT technique was used to assess initial therapy after applying the impairment of furcației and depth of periodontal pocket depth.

Were evaluated 14 molars and 11 maxillary molars.

All patients undergoing surgical periodontal therapy were further evaluated using CBCT.

Before therapy, all patients were performed periapical complete sets of eight, to determine the type of bone loss (vertical / horizontal).

Surgical decision was made by evaluating at different intervals, the following benchmarks, demonstrating reduction or increase bone defect: PCBCT was performed using a Scanner-camera imaging system for high-resolution 3D Accuitomo 60 XYZ Slice (J. Morita, Kyoto, Japan). CBCT was performed 3-6 months before surgery and 3 months after. It was used an i-Dixel-3DX (J. Morita) with a linear measuring instrument and a digital zoom lens. This facilitates a continuous movement with the cursor in the 3D view in three planes on the computer screen.
LIR was calculated in the horizontal plane by measuring the distance between the outer surface and inter-radicular bone of a millimeter in milimetru. Gradul of impaired furcației LIR was classified based on the claims of Hamp et al. S (1975). Root treatment was performed before surgery.

CBCT data generated were available before surgical periodontal therapy. Surgical approach was chosen teeth presenting PPD > 6mm. During surgery was assessed degree of impairment of furcației site LIR three sites (buccal, mesio-palatal and distopalatal) of maxillary molars with a probe NABERS (PQ2N, HU-Friedy, Chicago, IL). LIR degree obtained by periodontal probing was compared with the estimated degree CBCT imaging evaluation.

The clinical diagnosis was confirmed or not in accordance with the data obtained by CBCT. Treatment plane based on clinical evaluation and panoramic and periapical radiographs was decisively established only after comparing the CBCT data.

**Comparison of LIR intra-surgical evaluation to CBCT evaluation**

Overall, only 27% of clinical assessments were confirmed with CBCT, while 29% of the values were overestimated (value CBCT < clinical value) and 44% showed an underestimation (CBCT value > clinical value, p = 0.076).

If the degree of involvement furcației I REG, 25% of the values were underestimated to the CBCT recorded, and the grades II and III, underestimation was 75%.

Therefore, almost two-thirds (62%) of the LIR clinical grade II site and the majority of sites with clinical grade II-III (84%) were assessed by the CBCT values recorded as grade III.

While the analysis of clinical data and periapical and panoramic radiographs indicate more than one treatment option, additional analyzes CBCT facilitated by a clear decision for complex periodontal treatment.

It was found that most of the maxillary molars, periapical and clinical data lead to two or more treatment options while using CBCT imaging provides data with a much better basis for selecting a distinct and effective treatment plan.
4.5 DISCUSSIONS

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4.6 CONCLUSIONS

- Clinical parameters may be used in the diagnosis to create a treatment plan for estimating disease risk, documenting increased tissue stability, remodeling or damage and for detecting periodontal risk factors.
- Conventional radiography is reliable with low-dose procedure, which, however, are not yet fully adapted to dental practice.
- A digital image is superior to radiography film based on detailed image of periodontal structures.
- Image processing is now a pure research tool to identify subtle changes in tissue density.
- It is necessary to develop a diagnostic system to be combined and overlapped with radiological image data from sounding or biological information, therefore providing a comprehensive periodontal image.
## 5.1 INTRODUCTION - HIGHLIGHTS CONCEPTUAL RESEARCH

Along with remarkable successes documented in oral implantology, some issues require a further study. Obtaining and maintaining osseointegration of implants, and "preservation" level mastoid bone of the alveolar ridge periimplantare have a major importance in implant treatment. Early bone loss is the major factor that causes bankruptcy of implant.

## 5.2 GOALS AND OBJECTIVES

The purpose of the paper: optimizing rehabilitation of patients with periodontal bone support minimally affected by developing procedures for implementing endosseous dental implants.

## 5.3 MATERIAL AND METHODS OF RESEARCH

General characteristics of patients and dental implants

The study included 112 people - 48 men and 64 women aged between 22 and 71 years.

The patients were divided into 2 groups .

- The first group (reference) consisted of 54 people , which implants (88 - Alpha -BIO 24 - Adina 32 - MIS) have been installed by standard methods , ie flap surgery .
PERIODONTAL DISEASE INFLUENCE IN THE THERAPY IMPLANTATION

ABSTRACT

The second group (the study) consisted of 58 patients, the fixed gums have a width greater than 5 mm. Patients in this group have been inserted implants (154 - Alpha -BIO, 27 - Adina 24 - MIS) without creating flaps.

Considering that these three implant systems do not differ in principle further in this section we will not specify.

Radiographic CT, allowed me to exploration thorough infraosseus defects: their depth breadth and number of bony walls vertical extent and spatial configuration, alveolizelor interradicular morphology, bone density, we have established guidelines and prosthetic rehabilitation opportunities patients, the use of endosseous dental implants. Depending on the type of edentulous and other parameters, the number of implants inserted into a patient ranged from 1 to 12. The reference group average of 3.0 patient implants were installed in the study group - 3.8.

RESULTS, DISCUSSION, ANALYSIS AND INTERPRETATION

Evaluation of cortical bone periimplantar

The major objective of the study was to assess cortical bone during osseointegration periimplantar endosseous dental implants installed two-stage surgical method without flaps off mucoperiostale (^ apless surgery ).

In the second stage, the OPG2 radiographic and macroscopic implants after discovering it was found that cortical bone periimplantar around some changes and is not supported in the immediate postinsertional around the others it is obvious signs of resorption, and in some cases - partially or completely cover them. Covered platform implant bone were recorded only in patients in the study group, in 18 (35.2 %) cases in the maxilla and in 11 (18.9%) - the lower jaw. The bone was removed by milling or scraping the scoop until the discovery of the implant platform.

In the mandible, the OPG measurements showed that cortical bone resorption periimplantar reference group is often recorded and significant and varies between 0.00 and -2.82 mm. In the front, on average it is - 0.75 ± 0.09, in the back - of - 0.59 ± 0.09.
In the study group, the cortical bone level change periimplantar also varied - from 0.81 (apposition) and -1.39. In the front, the degree of resorption is the average of -0.22 ± 0.08 mm in the rear - 0.14 ± 0.07 mm.

The comparative study showed that the degree of resorption of the mandibular cortical bone periimplantar if implants after installation of new proposed method is lower trustworthy.

OPG jaw measurement showed that during bone resorption phenomenon osseointegration periimplantar reference group is often attested is higher and varies between 0.00 and -4.42 mm. In the front, the average is - 0.72 ± 0.18 in the rear - of - 0.83 ± 0.17 mm.

In the control group, the cortical bone level changes periimplantar, were also varied - from -1.80 (apposition) and -1.55 mm. In the front, the average resorption is -0.10 ± 0.08 mm in the rear - of -0.14 ± 0.10 mm. The comparative study showed that the degree of resorption of the cortical bone in the maxilla periimplantar if implants after installation of new proposed method is lower trustworthy.

The analysis results showed that both the mandible and the maxilla as the reference group degree of resorption of cortical bone periimplantar, compared with the certificate in the study group, with certainty (P < 0.001) is more pronounced. The phenomenon of cortical bone resorption during the healing periimplantar been studied by several authors.

Secondary stability implantelorAnaliza comparison showed that the values of the secondary stability of implants installed in two sessions without flaps off mucoperiostale (our proposed method) both on the mandible and maxilla as of and insignificant (p> 0.05) exceeds that those obtained by implants installed according to standard methods.

5.5 DISCUSSION

Evaluation of the bone around the implants can be considered a parameter that describes the long-term stability and success versus complete loss of implantuluui. Because bone loss should be measured on radiographs, they should be taken at different points of reference for duplicate measurements. The availability of different implant systems put more emphasis on this.
5.6 CONCLUSIONS

1. The degree of resorption of periimplantar cortical bone at the installation of the implant according to the method developed, it is low (p <0.001) versus implants installed in a standard manner. Two-stage surgical implants installed without flap in 35.2% of cases, the maxilla and 18.9% of cases, the mandible, unlike flap installed implants were fully or partially covered with newly formed bone.

2. Using the device, developed for determining the parameters of alveolar processus is decisive select area optimal diameter implants in evaluating the possibility of installing them without creating mucoperiostale flaps.

CHAPTER 6

CLINICAL, BIOLOGICAL AND RADIOLOGICAL EVALUATION OF EFFICACY OF PROSTHETIC THERAPY IMPLANTS TO PATIENTS WITH AND WITHOUT PERIODONTAL DISEASE

6.1 CLINICAL AND BIOLOGICAL EVALUATION OF IMPLANT-PROSTHETIC THERAPY TO PATIENTS WITH AND WITHOUT PERIODONTAL DISEASE

6.1.1 INTRODUCTION

Since the total edentulous incidence is decreasing in the industrialized world and partially edentulous prevails partially included in the application implant dentures reached a valuable place in the therapeutic arsenal. Indeed, the psychological benefits and tooth structure maintenance are among the benefits of implant supported prosthesis use.
6.1.2 PURPOSE OF THE STUDY

The purpose of this study is to investigate the long-term predictability of clinical implant prosthetic restorations included in the therapy used by partially edentulous periodontal parameters and to compare aceeeasi parameters when using single crowns fixed partial dentures.

6.1.3 MATERIAL AND METHODS

6.1.3.1 Select the group of patients

All partially edentulous patients received between December 2009 and June 2011 implant-prosthetic treatment with implants Miss. Study includes 60 patients with periodontal disease (38 men) aged between 15 and 83 years (mean 50.5) and 22 women. In total, 286 implants (96 to support single crowns and fixed to serve 190 fixed partial dentures) were placed in the maxilla and mandible in anterior and posterior site.

A total of 21 implants had a bone dehiscence at the time of their installation. The 17 site implantation sites were applied to close the membrane dehiscence and / or autologous bone graft or xenon (Bio-Oss ®, Geistlich, Switzerland) to fill the gaps between implants and extraction sockets, or to provide bone volume enough to wear implants.

6.1.3.2 Therapeutic-stage algorithm

Surgical Procedures

The surgery was carried out in two stages in accordance with a standard protocol. After a healing period the average of five and 6.8 months in the maxilla and mandible , respectively , have been connected to the abutments .

Prosthetic procedures

Prosthetic restorations were fabricated in accordance with conventional protocol . There were a total of 110 inserted fixed prostheses (35 single crowns and 75 fixed partial dentures ). To obtain optimal healing of soft tissues were used 21 temporary restorations, with an average duration of 4.2 months. Subsequently, final abutments were connected and final prostheses were placed (73 and 37 acrylic - polished ceramic ). The fixed partial dentures, 36 were supported by implants and teeth ( including 68 implants ), called implant - tooth connected , while only 74 were
supported by implants (102 implants), called by themselves. Contact equally and simultaneously implant restorations and teeth was conducted with maximum intercuspaţiu. During the tours, the interference was avoided only implant supported restorations. Where this is not possible, were distributed evenly contact the teeth and implants.

6.1.3.3 Clinical assessment posttherapeutic

After installing restorations, patients were called (bi) annually. Continuous stiffness bone - implant abutment connection and installing the prosthesis was recorded in 2010 by systematically tracking device using Periotest®. When osteolysis was detected or ought to be present, fixed partial denture was removed to check the stability of the implant.

6.1.4 RESULTS

6.1.4.1 Results of integration and survival of implants

There is no significant difference in risk rates of implants designed to support single crowns and those intended to be anchored by means of a fixed partial denture (P = .82). Estimated hazard rate for implants that provide fixed partial denture stability is equal to 1.09 times the hazard rate for implants that provide stability unice.Nu crown is no significant difference in the hazard rate between the mandible (estimated cumulative survival rate from 9, 0 years ie 93.3%) and maxillary (estimated cumulative survival rate of 10.0 years mean: 89.9%) (P = 0.065). Estimated hazard rate mandible equals 0.66 times the hazard ratio in the jaw, with [0.42, 1.03] that the 95% confidence interval. For both maxillary cumulative survival rate is estimated at 10.0 years 91.4% to 16.6 years, which is the time the broadest risk controlat.Rata estimated posterior implants website is equal to 0.96 times the rate of risk for implants on the previous site (P = 0.85), with [0.6, 1.52] ie 95% confidence interval.

6.1.4.2 Results of integration and survival of dentures

There is no significant difference in risk between the rate of single dentures, denture independent and tooth-implant connected prosthesis (P > 0.99). Mandible estimated hazard ratio is equal to 0.77 times the hazard rate in the maxilla, to [0.36, 1.63] ie 95% confidence interval and no significant difference between the two jaws.
(P = .49). Influence of site's jaw prosthesis is not significantly different unique independent and tooth-implant connected prosthesis (P = .38). There is a significant difference between the rate risk on the basis of the prosthesis material (P <0.0001). Estimated hazard rate dentures polished acrylic or composite rate is 4.84 times the risk for hearing-polished ceramic with [2.37, 9.90] ie 95% confidence interval.

6.1.4.3 Results of integration and survival of subsequent restorations with implants vs unidentare. independent fixed partial dentures

Non-inferiority analysis showed that the estimated hazard ratio of 2.17 for the single implants or implants rate risk on its own, with [0.67, 7.10] ie 95% confidence interval, but no significant difference between rates risk (P = .20).

6.1.5 DISCUSSIONS

Implant failures were mainly of biological origin because 115 implants have gained or lost osseointegration, whereas only 17 were fractured. Further research is needed to investigate the performance of single implant restoration to treat missing teeth.

6.1.6 CONCLUSIONS

1. The aim of this study was to predict the outcome of implant restorations in partially edentulous treatment, taking into account the interdependence of implant and the effect of several confounding variables.
2. Estimated cumulative survival rates were 91.4% and 95.8% of all implants for all restorations in a period of 16 years.
6.2

RADIOGRAPHIC ASSESSMENT OF IMPLANT-PROSTHETIC THERAPY IN PATIENTS WITH AND WITHOUT PERIODONTAL DISEASE

6.2.1

INTRODUCTION. PURPOSE OF THE STUDY

The aim of this study was to evaluate the marginal bone level changes while around implants installed to treat partially edentulous and to investigate the possible effects of several variables involved. This study was based on a longitudinal radiographic evaluation of a group of patients in clinic activities in Buzau.

6.2.2

MATERIAL AND METHOD

6.2.2.1 Stages algorithm achieving radiographic evaluation

Consecutive intraoral radiographs were taken using the parallel technique.

In all the 110 patients treated partially edentulous department (41 males, 15-83 years of age) with 245 implants which have been successfully integrated marginal connections have been loaded with fixed partial dentures. Implants were divided into three groups: 39 implants supported crowns for single tooth implant-supported tooth 64 and 38 online free fixed partial dentures. Implants were placed in the maxilla and mandible, both before and posterior. Pierderea estimated marginal bone for the first 6 months was 0.31 mm/year and then 0.015 mm/year higher than the mandible jaw. Greater bone loss was expected for the first 6 months when there were dehiscențele when a membrane or bone graft was used, or when the prosthesis metal/ceramic material was applied.

6.2.2.2 Radiographic evaluation

Radiographic examination peri-implant bone level was performed by parallel long cone technique.
The first scan was made at the connection point and was used as a support base. Consecutive scans were performed during the visits. Changing the marginal bone level was determined mesial and distal to the implant. The reference point was set at the junction implant-abutment.

### 6.2.2.3 Statistical evaluation

A multiple regression framework was used to take into account the possible influence of complex variables. The estimate for a particular chewing variable is based on an average value implants (depending on the set of data), for all other variables. Due to the nature of the exploratory study, no corrections are made for multiple testing. The alpha level was set at 5%.

In order to assess as accurately as 30 scans were recorded on different subjects, two, within 10 days.

### 6.2.3 RESULTS

In the present study ICC was 0.988. 95% confidence interval for the intraclass correlation coefficient equaled [0.979, 0.997].

The loss of marginal bone estimated for all implants is equal to 1.23mm/an (SE = 0.11) at six months after the first connection point of support, followed by an annual loss of 0.025mm (SE = 0.005). (P < 0.001). Evolution marginal bone level during the 6 months after the first connection point support is significantly different implants in the maxilla and mandible (P = 0.005), and is estimated to be 0.31mm/an (SE = 0.11) higher in the maxilla than in the mandible.

Thereafter, annual loss estimate remains high (0.015mm, SE = 0.01) in the jaw than in the mandible, although its significance disappears (P = 0.09). Changing marginal bone levels around implants in previous vs. implanturi posterior site has 6 months was significantly different after connecting to melting support (P = 0.64) or after (P = 0.62). really between maxilla and mandible, anterior and posterior locations did not differ significantly after 6 months of support connecting point (P = 0.98) or after (P = .11). Estimated marginal bone loss six months after being connected to the fulcrum is significant (P = 0.03) higher (0.38mm/an, SE = 0.17) at sites without and/or membrane.

Annual estimation of marginal bone loss at 6 months before is 0.01mm (SE = 0.016) higher for implants with a membrane and/or a graft, although this difference is not statistically significant (P = 0.6).


6.2.4 DISCUSSIONS

Marginal bone loss for all implants is estimated 1.23mm/an (SE = 0.11) six months after the first connection point support and 0.025mm per year (SE = 0.01) after 16 years. Noting marginal bone loss at all implants was 0.98mm. This revealed a stable condition. It plays favorably insert implants used in total edentulous.

Bone gain was detected around 14.57% of the implants, which could be interpreted as an increase in mineralization, leading to a higher radio-opacity bone bone previously unnoticed. Bone loss was less than 1, 2, and 3 mm for 64%, 92.43% and 98.75% respectively of the implant. These results are consistent with other recent studies on the same configurations of the implant in partially edentulous 10 years of observations. They reported a mean marginal bone loss of 0.7 mm and 0.6 mm. Surprisingly, a significant difference (P = 0.03) are the marginal bone loss for 6 months after the first connection point between implants with a membrane support and/or a bone graft and implants without membrane. Implants with a membrane and/or have a bone graft performances are better. Significantly (P < 0.01) bone resorption was observed more to support implants metal/ceramic prostheses compared with implants restorative resin - Chief during the 6 months after first connection point support. The fact that porcelain is more resistant could be the reason. Indeed little premature and/or contacts of interference inherent in new restorations placed, they need more time before they can be used to position the patient's jaw acrylic resins vs ceramic restorations. Since single implants are certainly lower and did not differ significantly from those butt independent fixed partial dentures, the method can be extended further investigated.

6.2.5 CONCLUSIONS

1. Based on the evolution of marginal bone level at oral implants in both jaws, the anterior and posterior crowns supported either single or fixed partial dentures have an excellent long-term prognosis.

2. However, marginal bone loss in the jaw is provided where it is present in bone dehiscence or used as material for prosthetic metal/ceramic (no later than 6 months after punctulului connection support).
3. There was no significant difference in marginal bone loss between implants in the maxilla and mandible for the first 6 months (0.31mm/an, SE = .11).
4. No significant difference was not found for posterior implants to previous implants in this study.

CHAPTER 7

COMPARISON OF BACTERIAL PATTERNS OF DENTAL AND IMPLANT SITES TO PATIENTS WITH PERIODONTAL DISEASE

7.1 INTRODUCTION. PURPOSE OF THE STUDY

Microbial colonization of dental implants could lead to infection of peri-implant tissues, resulting in bone loss and eventual failure of the implant (Salcette et al., 1997). Consequently, neglected or improperly treated periodontal disease may increase the risk for dangerous infection implantară (Berglundh et al., 1992; Mombelli et al., 1995; Karousşis et al., 2003).

The aims of this study were as follows: (i) comparing the oral microflora and dental implant sites in patients participating in a program to control periodontal (II) to test whether the microflora and dental implant sites differ in terms of bleeding on probing or periodontal pocket depth and (iii) to test whether there is an impact of smoking and sex on the microflora in dental and implantară sites.

7.2 MATERIAL AND METHOD

Patients in this study group consists of 56 patients with implants identified with prior history of periodontal disease. The data were analyzed by gender, smoking status / non-smoking, clinical measurements of depth and bleeding gum pockets on probing, and microorganisms were identified by DNA hybridization method.

All patients were recruited from the personnel office between December 2009 and June 2011. For detection of microorganisms in subgingival plaque and saliva was used molecular methods: multiplex polymerase chain reaction (PCR) followed by DNA-DNA hybridization. Periodontal microorganisms were identified by micro-
identical kit (Hain Lifescience GmbH, Germany) multiplex PCR followed by reverse hybridization method.

### 7.3 RESULTS

The study group comprised 56 patients who applied 127 dental implants. One implant was applied to 21 patients, the second in 19 patients and four or more implants have been applied in 16 patients. In the study group, 57.9% were women and 42.1% men. Between implantation sites (n = 128) and dental (n = 1060), regardless of the depth of periodontal pockets, statistical analysis failed to demonstrate differences in total bacterial DNA as was calculated against known benchmarks each bacterium of the 40 species studied (independent t test, P < 0.52, equal variance unresolved). Excluding sites with periodontal pocket depth < 4 mm, the sum total bacterial load of the studied species was 3.1 times higher in samples from sites of bacterial decay (mean difference: 66%, 95% probability interval: 40.7 - 9, P < 0.001). Statistically significant higher bacterial amounts were found in sites dental implantation sites compared to the purple complex (V. parvula, A. odontolyticus I) (1.3-fold) (P < 0.05) and complex blue (A. israelii, A. geenresceriae, A. naeslundii types I and II) (2.9-fold) (P < 0.05), while no difference was found in the amount of bacterial charge for the complex red, orange, green and yellow. In some cases, DNA hybridization method failed to identify individual bacteria in both tooth and implant sites.

### 7.4 DISCUSSIONS

The present study demonstrated that implantation sites showed more signs of inflammation with higher degrees of bleeding on probing depths and sites with pockets ≥ 4 mm of tooth sites. On the other hand, displacement of the sacks tooth depth > 4 mm, had three times as many bacteria of the species studied than comparable implantation sites. Higher levels of bleeding on probing in implantation
sites were observed. Several explanations may be relevant. One explanation is that the observation reflects infection with other bacteria implantation sites than those included in the analysis routine dental sites.

7.5 CONCLUSIONS

In conclusion, bleeding on probing and smoking have no impact on bacteria in implantation sites, but have influenced the bacterial load of dental sites. Similarly, sites more bacteria than Arbor dental implant sites with similar periodontal pocket depths. Periodontal pocket depth in implantation sites with a limit of 4 mm has influenced the distribution and quantities of bacterial load. Subject is explanatory factor for dental bacterial load in both sites and in the implantation.

ORIGINALITY STUDY

Elements of originality of this work stems from the fact that research has insisted on clinical and laboratory aspects that impact the therapeutic approach, offering a clear view of existing problems and providing solutions to solve it. The studies are proposed solutions oriented prophylactic and biological prosthetic implant treatment periodontal field. The introduction of this concept in complex prosthetic therapy is of a significant impact, mainly due to population segment that it has in view. In addition, efficiency of care is a priority, and the application of the therapy in the context of a lesion pattern multiforme is one of the means capable of facilitating obtaining an efficient outcome. The study is characterized by an original approach, following the introduction of studies specifically designed to deepen that modern prosthetic implant and now includes new guidelines of therapy involves a new dimension that can not materialize without the use of all methods and opportunities deems necessary in achieving a positive outcome in treatment. The thesis deals with a modern topic of great current scientific, with important theoretical and practical implications, operate and interact on the correlations between implants and prosthetics.
It emphasizes that aseemne treatment plan and phasing should be made after careful consideration and after a proper diagnosis. Treatment varies from one patient to another, depending on the stage of the disease and severity of lesions. It is difficult to give standard solutions for implant-prosthetic treatment may be established only guidelines, in general, after a certain logic.

GENERALES CONCLUSIONS

1. Clinical parameters may be used in the diagnosis to create a treatment plan for estimating disease risk, documenting increased tissue stability, remodeling or damage and for detecting periodontal risk factors.
2. Conventional radiographs are reliable procedure with low dose, which, however, are not yet fully adapted dental practice.
3. Digital image is superior to radiography film based on detailed image of periodontal structures.
4. The magnitude of the error of each method radiological methodology limits the real change in disease status that can be detected with a certain level of confidence.
5. Image processing is now a pure research tool to identify subtle changes in tissue density.
6. Radiological parameters can be used for periodontal diagnosis to create a treatment plan for estimating disease risk, to document the stability of tissue remodeling and impairment and probably to detect periodontal risk factors for cardiovascular phenomena.
7. It is necessary to develop a diagnostic system to be combined and overlapped with radiological image data from sounding or biological information, therefore providing a comprehensive periodontal.
8. Strict standardization of projection geometry serial radiographs combined with image processing can lead to a more sensitive detection and quantification of tissue changes can reduce variability usoare. Procesarea image inter- and intra- observer.
9. Digital subtraction radiography and computer assisted densitometric analysis are indispensable tools for research but probably will not win applications in daily practice until it is available at a reasonable price equipment.
10. Establishment of implant treatment followed by prosthetic therapy preceded by clinical and laboratory evaluations conducted rigorously, in full agreement with each clinical case given.

11. Application of preimplantation surgical preparatory treatment for bone augmentation supply requires knowledge of the indications of this type of intervention, in order to assess the outcome.

12. Treatment of prosthetic implant - worn means is a therapeutic option that allows restoring balance stomatognathic system in good condition but has a high cost price, so it is less accessible.

13. Treatment success is largely conditioned by anatomical conditions in the field implant and therefore often require further intervention to improve its

14. Making a comparison between the implant and prosthesis unidentare classical means edentulous unidentare illustrates the fact that although I might be tempted to point to any conditions that prescription implant method must take into account a number of factors which makes a direct manner therapeutic success.

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