

Oral Rehabilitation on Implants and Introduction of Pathogenic Mechanisms in Relation to Oral Implants - Sugar Diabetes

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Dental implants are made of medical titanium and perfectly fit into human bone tissue; the dental implant can last a lifetime. Not being living organic structures, there are no nerve endings, neither at the implant level nor at the artificial crown level. The use of quality implants by an experienced implantologist, assisted by advanced technology, transforms the treatment with dental implants into the medical-surgical act with the highest success rate among dental and even medical treatments. Through the complete replacement of the tooth, including the root, can artificially reproduce the function of the natural tooth, with a strong and stable base. The implant crown, made of aesthetic materials (porcelain, zirconium) and anchored to it by means of the prosthetic abutment, will be surrounded by a healthy and aesthetic gum. Especially if the prosthetic abutment (the connecting element between the implant itself and the artificial crown) will be made of zirconium - natural light will cross ceramic layers, similar to enamel and dentine, offering a white of envy and glitter to the smile. Around the porcelain crowns (whole ceramics or zirconia ceramics) the gingiva will conform healthily, without the slightest sign of inflammation. These elements, the white of the teeth and the pink of the gums define the concept of dental aesthetics. The main problems that diabetic patients may encounter, are gingival inflammation and periodontal disease, dental mobility and tooth loss. When a dental implant is influenced by the type of diabetes, its failure rate is higher in patients with type 1 diabetes than in patients with type 2 diabetes. The study included a number of 56 patients, who presented themselves for performing an implant. Of these, 7 patients did not perform an implant. Diabetes mellitus defines a chronic metabolic disorder, which may have multiple etiopathogenesis, characterized by changes in carbohydrate, lipid and protein metabolism. Stability of the implant in the bone, immediately after implantation is crucial for the success of the treatment; this immediate stability is called primary stability and is purely mechanical in nature.

Keywords: Dental implants, dental treatments, diabetes, failure rate.

Diabetes is a chronic metabolic disorder characterized by hyperglycemia; a large number of factors amplify efforts to determine the risk of infection and its complications. The medical and social importance of the disease is explained by the dynamics of the prevalence, the degree of impairment of the health, as well as by the burden caused by diabetes on the affected individuals [1-3]. A large number of variables including disease duration, severity of non-infectious complications, associated diseases, level of glycemic control as well as the degree of medical supervision determine a very heterogeneous group of individuals, estimating the population at high risk for infections being a difficult problem to obtain in the case of diabetics. The oral-dental changes in diabetes have as a substrate the degenerative arterial interest, against the background of early tissue aging. The fear of hypoglycemia is a factor that makes doctors reluctant to maintain normal blood sugar in anesthetized diabetic patients. Hyperglycemia leads to glucosuria to polyuria, which in turn causes dehydration of the patient through osmotic diuresis. Hyperglycemia decreases the patient's ability to resist infections [4-6].

The relationship of the infection with diabetes is bidirectional: diabetes favors the infection and the infection induces and maintains a prolonged metabolic imbalance. Infections in the diabetic patient are a frequent cause of metabolic decompensation, in our country occupying the first position on the list of factors that induce

ketoacidotic or hyperosmolar coma. In some cases, apparently minor infections (a dental granuloma, for example) can maintain a prolonged metabolic imbalance, manifested not only by hyperglycemia but also by ketonuria. Although the entire immune system is alerted to defense against microbial invasion, certain defects may be more directly associated with certain types of infections. Some of the infections in which diabetic patients appear to be particularly vulnerable may be related to some or all of the defects [7-9].

Gingival bleeding, dry mouth, fungal infections, cavities, all these are possible signs of a serious health problem: diabetes. Diabetes can have a direct impact on the gums and bones around the teeth. In the case of untreated or unknown diabetes, the level of sugar in blood (though in the oral cavity as well) is increased, providing an environment conducive to the development of bacteria that in time attacks the enamel and caries, one of the dental signs of diabetes. Uncontrolled diabetes reduces the body's first line of defense against infections - white blood cells. Given the increased levels of bacteria, the next step is to affect the gum and periodontitis [10-12]. Complications that may arise in diabetics include subgingival plaque formation and increased risk of dental infections, and gum disease and even tooth loss and the bone atrophy (resorption) of the maxillary bone may temporarily prevent implant insertion; it occurs especially when the replacement or loss of the tooth is greatly delayed by replacement or when

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the teeth are replaced by traditional means, with bridges or prostheses. Under pontics (the *false* tooth or intermediate) unstimulated bone is reabsorbed. The same is true for the mobile denture wearers, constant mobility of their causes while bone resorption dramatic. Useage of an prophylactic antibiotics, mouth rinsing with chlorhexidine implants and implants coated with bioactive material with large extend the dimentions of the life of implants in people with diabetes[13-15].

Diabetes have long been considered a relative contraindication for dental implant therapy.

The success of the dental implant is initially dependent on the success of the bone integration that follows after their intervention. Although diabetes is considered to contribute directly to the failure of osteointegration of dental implants, studies and statistics have shown that diabetic patients with good metabolic control have the opportunity to regain their smile and dental health through dental aesthetic interventions and dental implants, if they are edentulous, partially or totally. Patients suffering from diabetes are candidates for dental implant intervention if they follow treatments for controlled asked for by the diabetes doctor and maintain their glycemic index in recommended limits, just like any other patient without diabetes. Between dental pathology and diabetes there are multiple and complex connections[16-18].

The pathogenesis of diabetes changes in the unfavorable sense, the resistance of the body and its reactivity to septic aggression, to operative stress and to tissue regeneration[19-21].

Oral manifestations in diabetes are gingivitis, periodontal disease, oral candidiasis, multiple tooth decay, salivary gland dysfunction, xerostomia, loss of dental units, taste and neurosensory disorders. Complications of diabetes reduce the life expectancy and quality of life of patients suffering from diabetes, therefore their prevention and treatment are particularly important. The main obstacles patients with diabetes face are gingival inflammation and periodontal disease, dental mobility and tooth loss. In this regard, it should be kept in mind that for patients suffering from diabetes, care for the tooth is very important. It has beneficial effects on both general health and the ability to feed properly. Poor metabolic balance of diabetes will determine the progression of periodontal disease and the partial response to the therapy applied[22,23]. The determinant factor of the periodontal disease is the bacterial plaque, which, under the conditions of local and general changes determined by the diabetes mellitus, will favor the initiation and rapid progression of the periodontal disease. Edentation and diabetes - In the case of edentation, people with diabetes have to perform more tests than the other patients, in order to evaluate their general state of the body (x- ray, computerized tomography and blood tests). A diabetes control allow a successful insertion of a dental implant.

Experimental part

Material and method

The study includes a number of 56 people, who addressed the implantology service. The success of long-term treatment cannot be guaranteed without impeccable oral hygiene.

In the oral mucosa, fungal infections such as oral candidiasis, recurrent aphthous stomatitis, flat lichen, traumatic ulcers, cracked tongue are more common in the patient with diabetes.

The importance of the diabetic field in the dental practice is not only determined by the high frequency of the complications that require surgery, but also by the fact that in these patients any aggression, even limited, can cause the entry into a vicious circle in which the local lesion aggravates the diabetic condition, and this in turn worsens the local evolution of the lesions.

Results and discussions

Before the operation, professional hygiene will be performed, complete, both on and subgingival, the periodontal pouches will be cleaned and eliminated, the active dental caries will be cleaned and closed (filled), the recoverable teeth will be extracted, which will maintain infections. Together with the cochlear part, the implant fully reproduces the functions and characteristics of the natural tooth.

Complications that may occur in diabetics include setting up the bacteriene subgingival dental infections and increased risk to affected shares gums, tooth loss of the bone. Dental implants in diabetics represents a high risk simply because dental implant falls if the jawbone is not able to increase and the titan implant root does not integrate into the jaw. The condition of success in this case is a rigorous hygiene after the placement of the dental implant. Of the 56 persons, 7 cases could not perform implant. From the risks and problems faced by people suffering from diabetes, one of the most problematic and distressing situations is that of surgery.

Diabetic patients recover much more difficult as a result of an intervention and complications such as slow healing, heavy healing or systemic wound infections can occur.

Dental implant may have low chances of success for people with diabetes due to osteointegration problems. If the jaw bone cannot grow and the implant is not properly fixed, it will be lost. If we want the implantation to be successful, a more recent method will be used: by centrifuging a small amount of the patient's blood, a plasma will be injected to the place where the dental implant was made, for faster healing of the tissues.

People who suffer from diabetes can opt for rehabilitation of the entire teeth with dental implants.

Oral rehabilitation on implants

The oral cavity requires thorough healing before implant insertion; careful descaling, caries treatment and elimination of any oral, acute or chronic infection are assumed. Occlusion (bite) should be carefully considered and balanced as part of the procedure required by the implant. Dental implant surgery, regardless of its degree of complexity, is a surgical medical act; the oral cavity is part of the body, with total interdependence; patient safety is a primary objective. The application of dental implants for reconstruction of the dental arches is a procedure with three qualities: it is accessible, it offers optimum functional comfort and it benefits from rapid technological advances. The indication or contraindication of this procedure in diabetics is reflected in the literature. If an application of an implant is an invasive surgical instrument, it can be applied to patients with diabetes. Regarding the possibility of implant implantation in a patient with diabetes depends on the coregional and general conditions; implant rehabilitation is a relative contraindication.

The knowledge of the patient's general ailments is decisive for the dentist; he may suspect the presence of diabetes in a patient with suggestive oral manifestations, who do not respond appropriately to the

therapy applied, and may refer the patient to the diabetes physician. The decision of the opportunity, of the operative moment, the specific training and the type of treatment applied depend on the presence or absence of the associated diseases, the degree of metabolic, functional compensation or the hemodynamic balance of the patient. Interdisciplinary collaboration is necessary for therapeutic success.

In the context of the correlation between diabetes and dental diseases, there are three major benchmarks to be considered each time: the patient with diabetes has an increased susceptibility to dental diseases and a specific reactivity; there are two distinct entities, different and well defined by patients with diabetes, those with the disease controlled by a correct treatment and a living regime and those with an untreated / unknown or incorrectly treated diabetes; the generic reference term for the dental therapeutic approach through invasive procedures of patients with diabetes is that of relative contraindication.

However, because of their dental implant, the bone they will preserve the integrity in time and resorption will be prevented because the implant operates as a natural tooth root.

Dental implants can be rehabilitated with fixed, mobile, fixed-movable or overdenture prostheses. A prosthesis fully supported by the implants does not depend on the soft tissues for support and, in these cases, the imprint should extend only to the areas required to identify the margin. A prosthesis is supported by implants and tissues in the soft tissue area for support. Therefore, a plaster must be pressed following the accepted principles for optimal support, retention and stability for prostheses for support. The extension of the maxillary main connector may be less than that required for fully conventional prostheses.

All restorations on implants must be passively adapted to implants. The presence of stresses in connection with several implants may be the cause of early implant failure. The choice of physiognomic material (resin or ceramic) seems to have no impact on the survival rate of the implant-prosthetic treatment.

Fixed, fixed-movable and mobile prostheses on implants have different occlusal requirements.

The occlusion should be evaluated in a manner that considers the available bone support, the number and distribution of the implants and the forces exerted by the patient; the patient must be informed about the need for regular and continuous professional maintenance and perfect care at home.

Conclusions

The dental implant is designed to last a lifetime in a clean and periodically checked mouth, and are a successful treatment option for the right candidate.

Patients with insufficient maxillary bone (resorption) at the implant site require bone addition before implant implantation. With the loss of the tooth / teeth that are placed on the jawbone begins to deteriorate because it no longer receives stimuli.

Implant stability in the bone, immediately after implantation, is crucial for the success of the treatment; this immediate stability is called primary stability and is purely mechanical in nature.

Dental implants are the most effective alternative to missing teeth.

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