

IMMEDIATE ORAL REHABILITATION OF DENTAL ARCHES WITH AN EMERGENCY FEATURE

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ABSTRACT

There is a compensation and balancing mechanism even at the level of the dental morphofunctional element. The physiological abrasion, determined by the cuspid-cavity interdental contact, characterized by the wear of the cuspid slopes, will be compensated (according to Jankelson's theory) by the continuous active eruption. These mechanisms allow, in fact, to restore a cuspidian morphology appropriate to the function, without altering the vertical height. The function of the temporo - mandibular joint is highlighted by the movements that the mandible can make. **Material and method:** The method of immediate prosthesis is a combination of orthopedic, surgical and medical treatments. The examination to establish the indication must be performed systematically and complex for a comprehensive information on the health of the whole body and of the stomatognathic system. **Results and discussions:** The immediate rehabilitation of the dental arches is urgent, which has led to the use of techniques that simplify the work phases for the preparation of prostheses. Simplified techniques allow the prosthesis to be made directly in surgery or with the help of the laboratory. **Conclusions:** The justification of applying a working method or technique is unanimously accepted as being supported by the advantages it has compared to others; the advantages result from the multiple possibilities offered for the rehabilitation of the functions of the stomatognathic system and for the biology of the soft and hard tissue formations that make up this complex apparatus.

Keywords:

physiological abrasion, cuspid-cavity interdental contact, temporomandibular joint function.

INTRODUCTION

It is obvious that any orthodontic abnormality, any edentative state or occlusion changes produce disturbances of the morphofunctional equilibrium state with echo in the other structures, and these disorders will be even more serious as the individual gets older[1,2,3].

Faced with these changes, the stomatognathic system can react in two ways: the disturbance caused by the modification of one element is compensated by the adaptation of the other elements to the new situation,

managing to restore the balance of the stomatognathic system as a whole; the adaptation action fails and a chronic imbalance is reached, with consequences sometimes serious for the health of the system. Functional changes can occur in different ways, usually affecting only one of the component elements at the beginning; the dental element and its supporting structures that form the dental arches are the most frequently affected by these changes; any dental element damaged by carious processes causes dental migrations either in the horizontal direction (mesial, distal, lingual, vestibular) or in the vertical direction.

Through the disorders it causes, as well as by the need for adaptation imposed by the stomatognathic system, it can affect any of its component elements. Teeth without contact points are inclined towards the mesial or distal and at the same time they can migrate vertically. Migrated teeth suffer from overloads that will have negative influences on the periodontal tissues. Hypocoupling of teeth without antagonists determines their migration vertically[4,5,6].

As a result of the horizontal or vertical migrations of the teeth adjacent to the toothloss, very often there will be disorders at the level of the dental articulation due to the modification of the occlusion plan, these resulting in the premature contact, which will cause the intermaxillary relationship to change.

By the widespread loss of the groups of lateral antagonistic teeth, the occlusion is lowered and the frontal overlap is accentuated, and the progressive traumatization of the upper fronts will reduce the lower floor.

Gradually, with the installation of periodontal disease after multiple migrations, the upper and lower frontal teeth, overloaded by the masticatory forces, will mobilize and be extracted. In the mandibular terminal edentation, the patient is required to perform unilateral mastication, and as a result the accentuated abrasion of the cusp on the hemiarchus used in the mastication occurs.

In this situation the condyles do not come in symmetrical contact with the articular tubercles; therefore, either as a result of the abrasion or of the obstacles through the migration of the teeth, while only one of the condyles distalizes, the others make only a slight rotational movement around its axis. .

The condyles are never symmetrical, the midline of the two arches no

longer coincide, the lifting muscles are contracted unevenly and asymmetrically, the two arches no longer reach maximum occlusal contact.

In Kennedy's first-class biterminal editions, an even more unfavorable evolution is noted. In these situations, the lack of distal support points for maintaining the occlusion leads to overcoming the resistance of the groups of frontal teeth. The occlusion is lowered, either by abrasion or by releasing the periodic tooth of the frontal teeth, followed by the movement of the teeth to the vestibular, with the accentuation of the superocclusion and distalization of the mandible.

Functional and morphological disorders of the temporomandibular joint may be a starting point in producing the imbalance of the stomatognathic system.

These disorders can be manifested by limiting or increasing the amplitude of condyle movements. The muscular element affected by local or general systemic causes, can cause disturbances in the balance of the other components of the stomatognathic system. Disorders of the central nervous system can alter muscle activity, causing hypofunction or hyperfunction.

Extended or reduced edentations in the frontal region, regardless of the cause that causes them, are generally required to be rehabilitated immediately. Extensive or reduced edentations from the lateral regions are immediately or late prostheses. In the extended edentations of varied origin, in the non-treatable marginal or apical periodontopathies, in cases where there are multiple root residues and the complicated untreatable caries, immediate prosthesis is indicated. The indications of this rehabilitation → prostheses being multiple and varied, will be described according to the purpose pursued in the morphofunctional prophylaxis of the

stomatognathic system and of the nervous system: preventing the unbalanced recovery of the stomatognathic system; restoring emergently of the disturbed functions of the stomatognathic system; restoring costal balance[7,8,9].

Occlusal rehabilitation must necessarily be integrated in the context of a broad and modern conception of preventing the occurrence of functional and structural changes in all components of the stomatognathic system.

E.Costa considers that the loss of a single tooth is not always an absolute treatment medication, but it is a predisposition to produce changes in the balance of the stomatognathic system. The therapeutic attitude depends on the state of adaptability of the bone, the presence or absence of periodontal disorders of the neighboring teeth and of the antagonism and age.

There is often a talk on the 'physiological limits', 'functional adaptation limits' of periodontal structures and neuromuscular mechanisms, but we have no objective parameter to quantitatively determine their value.

This general premise appears necessarily to determine when to go to the treatment of edentations in order to prevent changes in the occlusal-articular balance.

The analysis of the evolution of the intermaxillary relationships of static and dynamic overlap, of the interdental contact points, of the dental integrity and of the periodontium represents the starting point for the application of the immediate prosthesis.

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Natural teeth and their bony support make a great contribution to maintaining the contours of the face. The oral cavity, through the lips and teeth, plays an important role in facial expression. During daily life, through the movements and positions taken, the lips and the dental arches can express certain spiritual states. The smile is said to be the reflection of character, individuality, one of the major attractions of the face.

A pleasant smile is given by the teeth in perfect harmony with their color, shape and arrangement in front of the individual.

Due to the lack of one or more teeth on the dental arches, they produce disorders of the facial appearance, from the slightest (some not observable such as the case of lateral edentation), to the ones evident during the phonation and the smile, when the individual has an open mouth. Facial features are also noticeable in the resting position of the dental arches with lips in easy contact, or in centric occlusion. This alteration of the physiognomy is more pronounced in the extended or bimaxillary frontal edentation[10,11,12].

The reproduction of the physiognomic function of the stomatognathic system in the most successful manner must comply with a first-order decision when making dental prostheses.

The prosthetic treatment must take into account the physiognomic demands of the patient and, through the shape and arrangement of the artificial teeth, replay the characteristics of his own personality.

The replacement of the teeth after extractions from the frontal region is conditioned, generally by two requirements: it is always necessary that the patient does not remain edented at any moment; it is only sometimes required that the patient's physiognomy remain unchanged.

In the pronunciation of the vowels, the

volume of the oral cavity also plays an important role; language also contributes to taking a certain form of the phonetic tube.

In producing the various consonants, the air column must pass through a narrow portion of the tube, next to the pharynx, tongue or lips and teeth. The speech, with its stamp, individually characterized, it can be recognized most often only by voice[13,14,15].

Sudden modification of the teeth in the frontal region, caused by extractions, will have important consequences producing disturbances in neuromuscular stereotypes; these will be highlighted by phonation difficulties[16,17,18].

Loss of the posterior teeth leads to a widening of the tongue. Loss of the anterior teeth and retaining tissues reduces lip support. Replacement of lost teeth favors the migration of remaining teeth and consequent changes of occlusion, so that three of the main articulators of speech (tongue, lip) are. These articulators play an essential role in producing sounds that require an obstacle in the path of airflow[19,20,21].

In the chewing process, due to the lack of teeth, the food is no longer crushed and ground.

Incomplete trituration of food in the oral cavity requires increased effort on the part of the digestive tract, which favors the appearance of diseases, such as: gastritis, colitis, ulcer, etc.

We describe three causes that can lead to digestive disorders caused by masticatory deficiencies: the larger food fragments offer a smaller surface area to the digestive enzymes than the same food after complete chewing; it is proven that better chewing implies an intensification of the taste sensation, at the same time increasing gastric

and salivary secretions; the size of the fragments contained in the stomach is a factor that determines the rate of emptying of the stomach, the larger fragments being longer.

Thus, the complex role of the masticatory function in the biology of the organism in general was highlighted and how the widened or extended edentation is accompanied by disorders of the masticatory function, which, in turn, adversely affect the economy of the whole organism.

One of the branches of medicine that must be taken into account in the stage of dental disorders, and especially in prosthetic therapy is neuropsychiatry.

Today we can talk about the functional capacity of cortical cells of the strong type and the weak type. The strong type can, in turn, be balanced and unbalanced. After the mobility of processes, the strongly balanced type is divided into lively and slow.

The experimental researches showed that the pathological deviations of the superior nervous activity, under the influence of pathogens, were easily obtained in the strongly impetuous type and in the weak type, taking the appearance of neuroses; the possibility of occurrence and the need to prevent unbalance were caused by dentistry.

The contraindications for the immediate replacement of the natural dentition are quite numerous.

From their antibiotic protection, the possibility of infection is countered satisfactory in maxilla in such cases.

Patients with haemophilia often have severe periodontal retractions or diseases of their natural teeth, because the extractions have been delayed longer than recommended, because of the danger of multiple extractions in such cases.

Today, it is possible that in the hospital conditions the extraction intervention will be completed in such patients, because

the treatment is done very carefully, by the collaboration of the dentist with the hematologist. The immediate prosthetics in such cases act as a brace for hemostasis.

Immediate prostheses should not be performed in patients with oral or dental infections, for them it is impossible to be able to complete the home care necessary to prevent inflammatory complications.

In such cases, the acute inflammation should be removed before extraction, the prostheses will be made after healing.

Also, immediate prostheses are not indicated in cases where surgery is required in the frontal region for removal of a cyst or for removal of a deep tooth included.

In such cases it will be impossible to predict the bone defect that will result; also, postoperative edema may prevent the wearing of an immediate prosthesis. In patients who have undergone radiotherapy, tooth extraction will be the subject of special attention. In general, it will be postponed as late as possible, because of the high risk of osteoradionecrosis, which can develop even after many years of radiotherapy.

Some patients are afraid of applying an immediate restorative prosthesis because they suspect that placing the prosthesis over the recent wound will cause great discomfort.

Patients whose co-operation is more difficult to achieve, or those with poor understanding of the situation, remove their prosthesis immediately within a few hours after insertion and are glad to abandon it until healing. In such cases, either a thorough patient training is done or the prosthesis is immediately abandoned[22].

Old age, with obvious manifestations of arteriosclerosis or with cardiovascular disorders, are serious arguments that require caution in choosing this method of treatment.

MATERIAL AND METHOD

Beautiful teeth and a natural smile are among the factors that help to form a general opinion about a person. The immediate rehabilitation of the dental arches has a sense of emergency, which led to resort to techniques that simplifies the operation steps for making dentures. The simplified techniques allow the prosthesis to be made directly in the dental surgery or with the help of the laboratory.

It is necessary that the immediate prosthesis be included in the treatment plan, to make an individualization according to the situation of the prosthetic field and the treatment phases to be performed. The shape of the alveolar arch changes in function of the moment, the timeline or etiology of tooth extraction, but also because the process of atrophy and resorption of bone, which is installed in different degrees in function of the location. This parameter is important for the individual installation of artificial teeth.

The peaks of cellular waste have the sectional triangular aspect with a base facing the top, a top oriented down, which represents the edge of the ridge and two slopes (buccal and oral) and ergoes a process of atrophy and uneven resorption(more accentuated vestibular and concentric to the basis of the maxillary bone)[23].

RESULTS AND DISCUSSIONS

One of the important advantages of immediate prosthesis is the possibility to faithfully reproduce the existing mandibulo-cranial relations.

It is not always necessarily to accept as normal the existing mandibulo-

cranial relations, which is evidenced by the contact ratio of the natural teeth present on the arches. In rehabilitation process it is very

important prevalence of Kennedy class.(Fig.1).

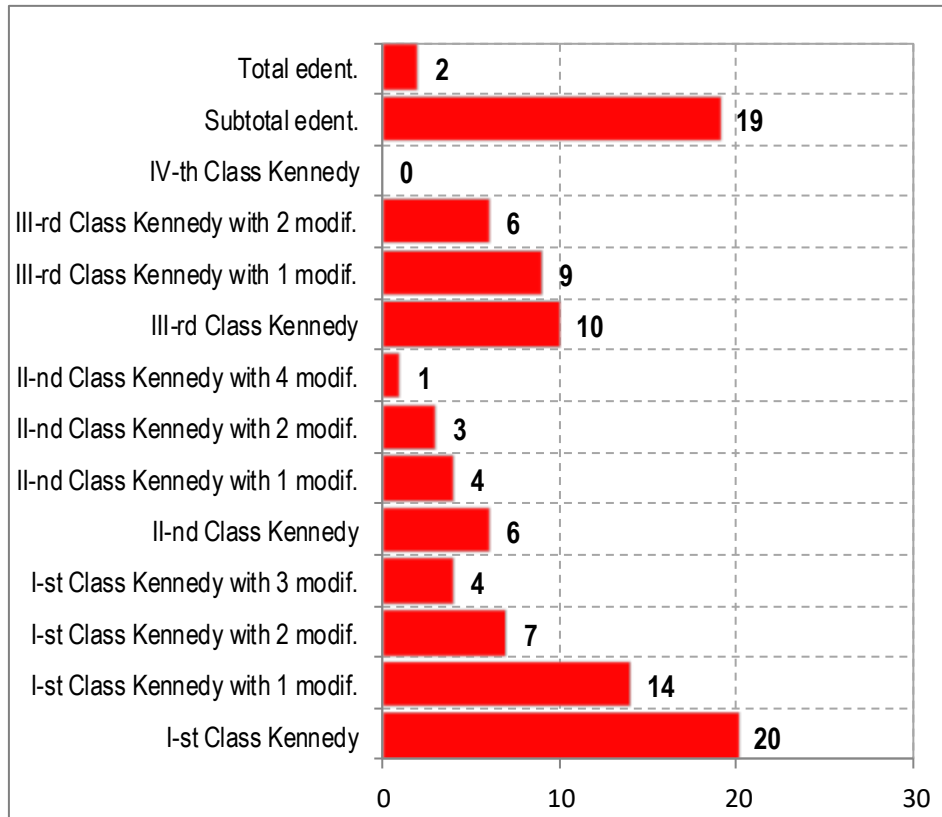


Fig.1. Sample's structure according to the edentulism class

There is the possibility that, over the years, the mandibulo-maxillary relations, both horizontally and vertically, change, as they existed at permanent dentition, with balanced arches.

These changes may be due to tooth abrasion, tooth loss, tooth migration and the presence of incorrect work. For these reasons it is always necessary to carry out a very careful examination of the occlusion of the patient to whom immediate prostheses will be made. Maximum interception is the result of a reflex act that can be modified. These changes can be short-term or long-term. If the occlusal disharmony was of short duration, the removal of the cause will shortly return to the previous automatic movement. The study of the models will be used to discuss the

treatment plan with the patient and to illustrate any intervention that will be discussed in the physiognomic aspect through changes in the position, shape and possibly color of the teeth.

Functional advantages, which refer to the possibility of immediate rehabilitation of the physiognomy, mastication and phonation.

Physiognomic advantages: most patients see a sign of regression in strength and their prestige. The current way of life with complexity is relationships between people, determines the patient to preserve the integrity of the dental arches especially in the frontal area, which is why prosthetic rehabilitation becomes imperative necessities. From an immediate rehabilitation of the dental arches in the frontal area the following advantages are obtained from the

physiognomic point of view: the transfer on the prosthesis of the individual characteristics of the natural tooth acquired.

Advantages of masticatory: the edentative states produce disturbances of the chewing process. The intensity of the disorders is directly proportional to the number of missing teeth. Naturally, the reduced edentulous braces, from 1-2 teeth, do not enter the discussion. The repair of the integrity of the dental arches by fixed or mobile prostheses has a certain value in order to improve the chewing process, when it is disturbed.

Phonetic advantages: the possibility of recovering the dental arches immediately after extractions, with a morphology that is often almost identical, offers the languages the same conditions for articulating sounds. Without immediate prosthesis, the period of phonetic disorders produced by edentation, as well as the period of phonetic adaptation, is avoided, usually, after late prosthesis.

Psychological advantages: the frontal edentations, through the changes that can make in the physiognomy, are those that generate true psychic traumas. Avoiding the emergence and installation of an edentative state by immediate prosthesis, from the psychic point of view has several advantages, which have been stated as follows: the emotional shock, which is installed in the vast majority with the extraction of the frontal teeth, does not appear; extractions in one session reduces the number of shocking emotional states for the patient's psyche; it is understood that these extractions are followed by immediate prosthesis; the post-extraction

related to the shape, the size and the position

or postoperative period coincides with the period of adaptation to the prosthesis, which is well accepted by patients, because this period overlaps with the period of adaptation to the prosthesis, which is not devoid of translated annoyances through painful sensations, doctor visits, etc.

The biofunctional advantages are many and important, some of them being known by intuition, and others will be synthesized as follows: preserving the morphological integrity and maintaining the functional balance of the temporomandibular joint; preserving the tone and trophic muscle of the tooth-maxillary apparatus: favorable conformation of the alveolar process of reduced atrophy.

CONCLUSIONS

Several extractions performed in a single session exempt the patient from being scheduled several times.

The prosthesis applied immediately after the extractions can be considered as a wound dressing, which protects it from possible traumas. By these two mechanisms, post-extraction hemorrhage is avoided.

The favorable action of the prosthesis on the wound is manifested by reducing the intensity of the pain. The healing process of the alveolar wound is especially favored by the formation and persistence of the clot, which the immediate prosthesis defends.

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