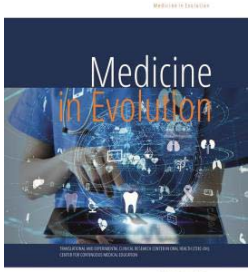
The esthetics of maxilary frontal group in dental prosthetics



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Abstract

The scientific objectives to be solved within this research are: standardization of an updated work protocol regarding aestethic restaurations, based on differentiated methods of treatment in relation with the etiology of the dysfunction, the sex and age of the patient, the original environement of the patient, his personal desires and his financial possibilities. The material taking into account consisted of a series of 70 patients of different sexes, from different backgrounds, aged between 19-57 years, and presenting carious lessions, chromatic disharmony or frontal edentation. From this study were excluded patients with lesions located only in the posterior teeth. The study was made up of 40 patients from western Romania, who came to our clinic. The actual experiment will include: the elevation of masticatory, phonetic and aesthetic dysfunctions and it was carried out for each patient with the help of clinical and paraclinical examination. These included a series of surveys and investigations. The aim of this study is to highlight the rehabilitation of the maxillary frontal group. What must be remembered is that rehabilitation of the frontal group can be donde through several techniques and with various materials. The techniques used for the grinding of the front group are: threshold grinding, tangential grinding, and vestiprep grinding. The materials used for aesthetic rehabilitation of the frontal group are: zirconium and pressed ceramic, and of course we can mention metal-ceramic but the aesthetics are no longer the same because the transpasrency given by zirconium cand no longer be achived.

Keywords: aesthetics restauration, oral rehabilitation, zirconium, ceramics, smile

INTRODUCTION

For a complete and correct oral rehabilitation, all the functions of the dento-maxillary apparatus must be perfectly restored. In addition to the masticatory function, which is the most important for the patient, the phonation function plays an important role as well as the aesthetic function. In recent years, physiognomic function has gained increased attention, both from doctors and patients who are very concerned with how their teeth look or how they smile. The demands of the patients for dental aesthetics are increasing, and the possibility of achieving the requirements is in full development, thanks to the acceleration of technology and the development of the dental materials industry. [1]

Dental prosthetics is a branch of dentistry that aims to reconstruct the patient's dentition, to give him a balanced aesthetic and a functional smile. Prosthetics can involve the following functions in the oro-dento-facial reconstruction operation: phonation or sounds during speech, mastication, as well as maxillo-facial protection from the effects of bruxism. Dental prosthetics therefore fulfills a complementary and interdisciplinary role in dentistry. [2]

Aim and objectives

The scientific objective to be solved within the research are: standardization of an updated work protocol regarding aestethic restaurations, obtaining differentiated methods of treatement in relation with the etiology of the dysfunction, the gender and age of the patient, the original environment of the patient his desires and his financial possibilities.

MATERIAL AND METHODS

The material taking into account consisted of a series of 70 patients of different sexes, from different backgrounds, aged between 19-57 years and presenting carious lesions, chromatic disharmony or frontal edentation.

From this study, we excluded patients with lesions located only in the posterior teeth.

All the patients included in this study recived explanations about their present problems, the future treatment options, the risks and the consequences of the treatment as well as the consequences of the non-intervention. Patients agreed to the prosthetic treatment and the follow-up period necessary to determine whether the prosthetic treatment was successful or not, and whether or not other procedures were necessary to resolve the case.

From the total of 70 patients, we excluded 30 who had lesions only in the posterior area.

The study was made up of 40 patients from western Romania, who came to our clinic.

The actual experiment will include: the evaluation of masticatory, phonetic and aesthetic dysfunctions.

The surveys that were used in this study included: heredocollateral antecedents, personal general antecedents and personal dental anatecedents.

We proceed to the inspection of the face from the frontal norm, ito analyze facial symmetry, the shape of the face, the layers of the face, the appearance of the lips, the amplitude of the mouth opening and the color of the teguments. Inspection of the face from the lateral norm follows the patient's profile, the ratio of the lips and the lip-chin ratio. The following step was the palpation of the points of emergence of the trigeminal nerve, sinus points, maxillary and mandibular bone outline, palpation of the soft points of the face, palpation of the TMJ, of the masticatory muscles. The endooral examination was made, observing specifically, the color and appearance of the tongue, the sublingual area, the

mucosa of the hard palate, the lute and the palatine veil. Each tooth was alnalized observing the presence of carious processes, fillings, tartar deposits and staining as well as edentations if they were present. Afterwards the radiological examination was realised in order to diagnose the patient and to define a treatment plan related to the reasons for the presentation. The next step was the implementation of the treatment plan.

For the first time, the prosthetic field was imprinted with an additive silicone for the provisional dental restaurations. Anesthesia related to the interested areas was carried out. In the case of patients who presented old, unaesthetic prosthetic restaurations or which affected the masticatory functions, the former prosthetic restaurations were ablated. To prepare the zirconium crowns, the minimum preparations thickness for the zirconium cap on the front teeth is 0.3 mm and for the lateral teeth, 0.5 mm. To prepare the tooth, a1.5-2 mm preparations of the incisal edge and 1-2 mm in circumference is recommended in the frontal area. In the lateral area, the occlusal surface will be polished by 2-2.5 mm and the circumference by 1-3 mm. Different sized tapered end burs were used as well as threshold end burs. After finishing the preparation, the gingival retraction thread will be inserted to prevent light bleeding and highlight the threshold. A two-time impression will be taken.

The occlusion will be taken with an addition silicone for registration of the occlusion. The impression that was taken at the beginning of the session, will be filled with a biacrylic self-polymerizing resin to create the temporary restauration. After cementing the provisional restauration, the occlusion will be adjusted, with the help of an articulation paper and a fine bur. After completing the clinical session, the laboratory sheet will be filled with the details of the case, which will be sent to the technician together with the impressions and the patient's occlusion. After the doctor-technician consultation, there will be a technician-patient consultation session to determine the optimal color for the prosthetic work using the color key.

RESULTS

Gender distribution of the patients:

Of the total of 40 remaining patients, 25 were female and 15 male.

Table 1. The gender distribution of the patients

Sex	Number	Percentage
Male	15	38%
Female	25	62%

Distribution by age of the patients:

From the total of 40 patients, 8 patients are aged between 19-26 years, representing 20%, 17 patients are aged between 27-35 years, representing 42%, and 15 patients aged between 36-57 years representing 38% of the total of 40 patients.

Table 2. The age distribution of the patients

Age	Number	Percentage
19-26 years	8	20%
27-35 years	17	42%
36-57 years	15	38%

Distribution by the original environment of the patients:

From the total of 40 patients present in this study and who met the study criteria, 28 patients came from the urban environment and only 12 from the rural environment.

Table 3. The distribution of the patients by their original environment

Original environment	Number	Percentage
Urban area	28	70%
Rural area	12	30%

Distribution by the cause of the dental visit:

Of the total of 40 patients, 25 had deep carious lesions, 13 had chromatic disharmony and 2 had frontal edentation.

Table 4. The distribution of the patients by the cause of the dental visit

Causes	Number	Percentage
Dental lesions	25	62%
Chromatic disharmony	13	33%
Frontal edentation	2	5%

Distribution by the type of treatment was implemented to the patient:

Out of the total of 40 patients, 33 required dental crowns and only 7 of the patients required dental veneers.

Table 5. The type of treatment that was implemented to the patients

Dental tratment	Number	Percentage
Dental crowns	33	82%
Veneers	7	18%

Distribution of the patients by the type of material that was use for the restaurations:

Of the total of 35 patients with dental crowns, 29 required zirconia crowns with ceramic application, and 6 patients required all-ceramic crowns.

Table 6. The type of material that was used for the retaurations

Type of meterial	Number	Percentage
Zirconium	29	83%
Full ceramic	6	17%

DISCUSSIONS

The techniques used for grinding the front group are: threshold grinding, tangential grinding and vertiprep grinding.

The materials used for the aesthetic rehabilitation of the frontal group are: zirconium and pressed ceramic, of course we can mention metal-ceramic but the aesthetics are no longer the same because the transparency given by zirconium can no longer be achieved. One of the major advantages of zirconium is bio-compatibility. [3] Unfortunately, metal-ceramics can cause a metal allergy called metallosis. For better communication between the doctor and the patient, the wax-up diagnosis is used, which is the wax modeling of the dental arches on the study model to pre-visualize the final result. [4] The mock-up is the transposition of the wax-up in the oral cavity with the help of materials for temporary works. Special attention must be paid to occlusion, functional and parafunctional movements. Ceramic veneering is a highly appreciated and widely used treatment both in the USA and in Europe due to the extraordinary aesthetic effect and the fact that complicated aesthetic problems are solved through a minimally invasive treatment. Ceramic veneers are very resistant, but like natural teeth, they can break or chip in case of accidents. [5] In general, for a significant change in look, it is recommended that all visible teeth be covered by veneers (this means 10 teeth in the upper part and 8 teeth in the lower part). In this way the teeth will be perfectly aligned. The ceramic veneer is the simplest method to change the color and shape of the teeth to achieve a

perfect smile. Dental veneers also help close unsightly spaces between teeth and correct aesthetic defects caused by crowded teeth. Unlike ceramic or metal-ceramic dental crowns, only a small part of the visible portion of the teeth (approximately 0.6 mm) is polished for ceramic veneers. [6] This is basically a minimally invasive cosmetic treatment. Aesthetic analysis remains an absolutely indispensable factor in achieving ideal prosthetic restorations. In this way, specialists, in addition to the technology they use, they must be friendly to interpretations, outline an original form to the patient's style, become innovative, use smile designs that outline the patient's appearance, use their abstraction and the artistic sense in deducing the parameters of the ideal smile, offering that final emotion, in perfect harmony with the concrete present. [7]

CONCLUSIONS

During this work we tried to highlight the rehabilitation of the maxillary frontal group. What we must remember is that the rehabilitation of the frontal group can be done through several techniques and materials.

Following the treatment, the patient has a correct occlusion, the mastication function is performed correctly, the patient's physiognomy is improved, he gains much more confidence in himself, according to them, his mood is positive, wanting to smile much more often. After frontal rehabilitation, people smile more, without realizing it, because it is a natural reaction, this natural reaction has many health benefits, it can make you feel and look better.

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