METHODS OF INTEGRATING AESTHETIC REHABILITATION INTO THE TREATMENT PLAN OF ELDERLY PATIENTS

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METHODS OF INTEGRATING AESTHETIC REHABILITATION INTO THE TREATMENT PLAN OF ELDERLY PATIENTS (Abstract): Dental aesthetics represents a synonym for modern, cutting edge dentistry as it is a simultaneous mixture of art and science. The materials and the technology nowadays provide the resources for achieving extremely accurate and physiognomic restorations regardless of the amplitude of the intervention needed; consequently the treatment must respect the oral health and the optimal functioning of the dental-maxillary apparatus. One of the treatment phases that precede the final result, one step ahead in the treatment, is represented by the temporary restoration. The purpose of the paper consists in assessing the importance of restoring a patient’s facial aesthetics - a key element for treatment success, while going through the phases that precede the final result. Material and method: The study includes 88 patients aged between 60-90 years (median age - 75 years), treated at the Department of Oro-dental Diagnosis and Gerontostomatolgy, between January 2012 and December 2013. The patients requested the restoration of the functions affected by odontal coronary lesions, periodontal disease or edentation, malocclusion, cranial mandibular malrelations, and unsuccessful or deteriorated odontal or prosthetic treatments. Results: Dental aesthetics implies a detailed assessment of each individual case because the long term success of the beautiful result achieved depends of the optimal state of health and functionality of the entire system. The final project in the cases studied was transformed into temporary restoration and afterward into permanent restoration. Conclusions: The use of temporary prosthesis within the treatment plan is important for the patient as it contributes at maintaining his social life active and also at developing the correct techniques for providing the proper hygiene for the restored elements. Key words: AESTHETICS, TEMPORARY RESTORATION, ELDERLY PATIENTS.

Dento-maxillo-facial aesthetics provide a new dimension for the dental treatment as it includes an aesthetic assessment, and the possibility of a global dental-facial evaluation that gives the opportunity of establishing the harmony between the integrity of the dental component and the facial structure by introducing into the dental-facial composition the factors characteristic to the patient’s personality (1).

Aesthetics is defined as “the science of beauty in nature and art”. Although easy to accept, such an interpretation contradicts a series of famous statements made by Plato-“beauty is virtual”; Hegel-“beauty cannot be an exact science”; Leonardo da Vinci-“human beings represent the sensitive vector that gives birth to the essential beauty”. One
of the challenges of dentistry, which represents a type of elective medicine, consists in deciding what the patient’s aesthetic expectations are and seeing the difference between the patient’s needs and his desires. Ageing as a multidimensional phenomenon brings along physical and psychological changes in the organism that causes mental and social changes (2).

The main goal of odontal, periodontal and prosthetic treatments consists in improving the physiognomic aspect, eliminating the disorders and reestablishing the normal function (3, 4). The treatment plan is completely individualized and it is established after the doctor obtains all the information from the patient; this occurs after the preliminary examination, both clinical and radiological.

In choosing the final treatment solution, the doctor will also consider the patient’s wishes about regaining the physiognomy, putting the frontal teeth on, the color of artificial teeth, without ignoring the principles that lay at the basis of the treatment plan (5).

**MATERIAL AND METHODS**

The study included 88 patients aged between 60 and 90 years (median age, 75 years), treated at the Clinical Department of Oro-dental Diagnosis and Gerontostomatology, between January 2012 and December 2013. They requested the restoration of the functions affected by odontal coronary lesions, periodontal disease or edentation, malocclusion, cranial mandibular malrelations, and unsuccessful or deteriorated odontal or prosthetic treatments.

The data on the patients who took part in the study were collected based on a form including details on the modification of their physiognomic aspect by involution and the results of some additional exams (orthopantomography, model study, biometric measurements) useful in establishing the diagnosis. The patients were fully and systematically examined, correlating the reasons of their visit with their expectations. They were subjected to clinical and paraclinical exams based on which the complete diagnosis and well as the project of the treatment plan were established. Based on the data obtained, the clinical and biological indexes of each patient included in the study were established. The negative indices were monitored, pointing out the treatment phase when they might be turned positive.

**RESULTS AND DISCUSSION**

From the moment the patient agrees with the beginning of the treatment, after preparing the teeth and until the prostheses are ready, the teeth are covered with temporary dentures that are temporarily cemented (6). These restorations must not fulfill only a protection role (for the filed teeth); they must also be used to verify the accuracy of the future permanent denture (7). Thus, 25 patients (28.40%) underwent complete oral rehabilitation, their teeth were filed, and the temporary denture preserved the information on the dimension and the shape of the teeth, the facial proportions and the patient’s occlusion type.

While the patient has his temporary dentures on the imprint for the future permanent denture is sent to the dental technician who starts preparing them.

It was proved that restorations have an important role in maintaining the patient inserted socially, in protecting the dental structure, validating the aesthetic project, phonetics, regaining the functional occlusion, periodontal protection before imprinting and maintaining the hygiene of the restored elements (8).

In our case, when testing the new occlu-
sion, we took into consideration the results obtained from using some perfectly balanced and adapted temporary restorations, after accurately establishing the position and the desired guidance.

The temporary restoration will fulfill the conditions of the permanent restoration, except for the material the denture is made of, which will be characterized by a series of common features: easy to make, varied colors, break resistant, easily removable from the teeth, acceptable aesthetics, resistant to use, mastication, not irritating for the periodontium, allow proper hygiene of the patient and low cost. The wax-up (wax modelling) represents the initial plan in temporary restoration (9)

The age and gender distribution of patients pointed out a higher number of women (66%) while men represented only 34%, and a higher frequency of the age group 65-70 years (tab. 1, fig. 1).

The distribution of patients considering the dental syndromes indicated high prevalence of unimaxillary or bimaxillary total edentation and subtotal edentation. Thus, the following cases were recorded: total edentation - 25 (28.40%); subtotal-21 (23.86%); partial-28 (31.81%); odontal coronary lesions - 30 (34.09%); parodontopathy - 24 (27.27%); malocclusions- 20 (22.72%) (fig. 2)

<table>
<thead>
<tr>
<th>Age group (years)</th>
<th>No.</th>
<th>%</th>
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<tbody>
<tr>
<td>60-65</td>
<td>10</td>
<td>11.36</td>
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<tr>
<td>66-70</td>
<td>32</td>
<td>36.37</td>
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<td>71-75</td>
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<td>27.28</td>
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<td>81-85</td>
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<tr>
<td>86-90</td>
<td>4</td>
<td>4.54</td>
</tr>
</tbody>
</table>

**TABLE 1**

Age distribution of patients

Fig. 1. Gender distribution of patients.

![Gender distribution of patients](image)

![Distribution of patients considering the stomatological syndromes](image)

**Fig. 2.** Distribution of patients considering the stomatological syndromes

The patient M.I. presents a small number of teeth on the arch with vast odontal lesions at the surface and in depth, situation that is frequent in the case of subtotal
edentulous patients. For the restoration of the physiognomic aspect in the case of a removable denture the remaining teeth were preserved respecting the biological principle, providing endodontic treatment and preparing the region for an over-lay denture (fig. 3).

The excessive loss of mobility and alveolar bone substance at levels 12, 13 were accompanied by the presence of edentate crests with volume deficit (fig. 4).

**Fig. 3.** Patient M.I.– Preparing for an over-lay dentures and the restoration of the physiognomic aspect using an over-lay dentures

**Fig. 4.** Patient D.E.–Aesthetic and functional modifications; excessive alveolar bone loss at levels 12, 13 with mobility

The optimal number of remaining teeth, favorably distributed, allowed the use of conjoint prostheses (every time more frequent in elderly).

The aesthetic difficulties caused by the biological support were corrected using ceramic bridges. The recreation of the dental arches created special problems especially in the case of the upper maxilla.

Aesthetic and functional difficulties were encountered both in the case of the remaining teeth and at the edentulous crest that underwent bone remodeling processes.

In the case of dental bridges we considered certain particularities in choosing the abutment teeth and redistributing the potential prosthetic space (modified by the migration of the adjacent teeth at level 17 occupying space 16 and the resorption of edentulous crests) for the intermediate, according to precise rules.

An excessive bone loss or the loss of the frontal periodontal support, on limited areas, created some difficulties because of the exposure of the interdental spaces accompanied by the widening of the interden-
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tal papillary triangle, elongation of the clinical crown and sometimes the visibility of the cemento-enamel junction that created some problems in ensuring the proper hygiene. The loss of the parodontotic teeth with recurrent radicular cyst was accompanied by advanced bone resorption processes and physiognomic disorders (fig. 5).

![Fig.5 Patient D.E.-Advanced bone resorption with physiognomic disorders; recurrent radicular cyst](image)

In these cases, the use of acrylic devices represented a temporary solution, with simulation of the loss of gum tissue, covering the exposed radicular surface, improving the aesthetic aspect and preventing food impactation, a transitory situation until the permanent prostheses are used. In the case of a partial edentation that can be solved with prostheses, conjoint or adjoin, when the loss of periodontal and bone support is obvious, the aesthetic issues can be solved by using some special types of materials capable or reproducing, as much as possible, the color and the vascularization of natural gums.

With the help of gingival epitheses made of acrylic resin, the aesthetic and phonetic features of the anterior region have been improved (fig. 6a).

Although these types of prostheses are considered auxiliary and fragile, they can be made with the minimum of effort and provide the patients a feeling of satisfaction.

The correction of minor space defects with the aid of optic illusions is possible in the case of metallic-ceramic prostheses, by intervening on the shape and the color of the morphological details (fig. 6b).

In the case of wider spaces, it is necessary to intervene on the shape, by transferring the contact points towards the oral, and making the vestibular convexity and the chromatic individualization more prominent by using darker shades. In the case of narrower spaces, the transfer of the contacts toward the incisal and a more flattened morphology give the impression of normal proximal width. In the case of teeth that are too short (frequent because of tooth wear) the aesthetic aspect can be improved by flattening the vestibular side and narrowing the margins (10). Elongated teeth can be aesthetically corrected by transforming the proximal contacts into contact surfaces, round shaped and false margins.

The experience assimilated over the years as well as the changes from the level of the teeth and the adjacent structures,
inherent with the passage of years, determine essential modifications that sometimes, are present, in all the phases of the dental treatment (11, 12).

![Patient D.E. - Physiognomy restoration by gingival epitheses of acrylic resin](image1)

**Fig. 6 a.** Patient D.E. - Physiognomy restoration by gingival epitheses of acrylic resin;  

![Correction of some space defects using optic illusions](image2)

**6. b.** Patient D.E.-Correcting some space defects using optic illusions

The indication of conjoint treatments has been required by some clinical situations that compromise the aesthetic aspect of exigent patients, more precisely: dental discromy and wide odontal lesions at the surface and in depth that modify the morphological aspect of the tooth (tooth wear); root exposure due to recession, with the elongation of the crown (periodontitis) or the reduction of crown height (gingivitis); cervical decays and erosions; interproximal spacing and dental malpositions that cause problems to the morphological restoration of contacts and occlusal unbalances (13).

In creating edentulous artificial arches it was necessary to particularize the general principles that lay at the basis of dento-facial aesthetic restoration. Respecting a series of topographic and functional guiding lines, the selection and the insertion of frontal artificial teeth had to overcome certain difficulties when no pre-extraction element could be used.

In the insertion of artificial teeth it was considered the fact that the upper and lower incisors must not be in contact, in centric relation, without allowing the possibility for an anterior movement of at least 1mm and maintaining an angle of at least **15°**, in protrusive occlusion, which indicates the necessity of correlating the overbite and the over jet. At the same time, the reconstruction of the profile and of the soft parts has been ensured.

Although by restoring a patient’s physiognomic aspect, he can be helped regaining his self confidence, this must not always come first in the detriment of the other basic principles of dental practice.

**CONCLUSIONS**

Our observations pointed out the existence of an increasing prevalence of the elderly affected by the physiognomic function, preoccupied with their bodily structure, activity and appearance. The results of our research materialized in avoiding the inharmonious ageing by replacing the local infirmity and thus improving the quality of life.
The concept of prosthetic restoration proved to be more than just the simple replacement of one or more missing teeth with a prosthesis; it integrated this aspect into a personalized treatment plan, after a complete and complex analysis of each particular case.

Drawing up and selecting the treatment plan for each particular case had to be correlated with a series of objectives and criteria that influence the preparing stages and the choosing of the final therapeutic solution.

Edentation and its incorrect rehabilitation can contribute at decreasing the quality of life in elderly and even shorten their life expectancy.

REFERENCES