DENTAL ESTHETICS - INSTRUMENT FOR RECREATING A NEW FACIAL ESTHETIC TO THE ELDERLY PATIENT

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DENTAL ESTHETICS INSTRUMENT FOR RECREATING A NEW FACIAL AESTHETIC TO THE ELDERLY PATIENT (Abstract): Aims: The major objective of this paper consists in underlining the wide range of possibilities in assessing the elderly patient; it relies on clinical examination in order to exclusively improve the patient’s physiognomic aspect. Materials and methods: In this context it has been organized a study which included 64 elderly patients aged between 60 and 90 years of age (median age 75), which presented themselves at the Clinical Service of Dental Semiology and Gerontostomatology between 2011-2012; they requested the restoration of the functions affected by odontal coronary lesions, periodontal disorders or edentations more or less expanded, malocclusions, malrelations of the mandible to the skull and unsuccessful or deteriorated dental or prosthetic treatments. Results: The restoration of dental arches has been performed relying on common sense and power of discernment, respecting both facial features and expression by redimensioning the lower part of the face, repositioning the mandible and using gnatoprosthetic devices. Conclusions: Solving the problems elderly patients confront themselves with and the success of the treatment has been possible only after a correct assessment of the involutive phenomena that influence the oral cavity, after understanding the local and general factors that predispose to oral disorders as well as the differences between various techniques and materials. Keywords: PHYSIOGNOMIC ASPECT, GNAT PROSTHETIC DEVICES, ORAL REHABILITATION, DENTAL ESTHETICS

Humans are social beings. Life within the society has helped them discover the physical, psychical and moral qualities of their fellow men, observe them and establish certain evaluation criteria about good and evil, what is pleasant and unpleasant in the way the people they get in contact with present themselves. One of these criteria consists in the harmony of human features and their beauty.

Facial physiognomy which is a separate function of the stomatognat system, depends of the morphological configuration of the facial skeleton, the maxillaries, the dental arches and the soft parts which cover the osseous skeleton as well as of the position of the frontal teeth on the arch (1).

The facial aspect is not something static; it varies along with the action of the underlying muscles and the symmetry of their contractions. Under the influence of the orofacial muscles’ contractions and of
the muscles that mobilize the mandible during mastication, speech and the other actions these muscles take part at, facial physiognomy experiences, with the passage of time, a continuous transformation (2). Consequently, facial physiognomy has a very well defined role of exteriorizing and communicating emotional conditions and so it represents one of the basic functions of the stomatognat system – the physiognomic function.

The harmony of facial features determined by the morphological configuration and the integrity of the skeleton and of the soft parts, is influenced by the aspect of the dental arches in the frontal region.

The pathological modifications, in such a visible area, can have essential implications on the individual’s balance and harmony, leading to negative consequences on his integration in society and inter human relations (3).

Generalized aesthetic modifications are necessary when all anterior teeth are restored and occasionally, the first molars which become visible when the patient smiles. The abnormal morphologic or aesthetic facial balance requires the use of anatomic landmarks and in particular the interincisive papilla which can contribute to the initial assessment of the position of the median line (4).

The dental practitioner can intervene to a great extent in restoring the physiognomic aspect by improving the signs of ageing, providing a maximum support for the facial tissues at ease and while they perform their functions.

The major objective of this paper consists in underlining the wide range of possibilities in assessing the elderly patient and which relies on the clinical examination for exclusively improving the patient’s physiognomic aspect.

MATERIAL AND METHODS

The present case study included 64 patients with the age between 60 and 90 years (mean age 75 years) assisted in the Clinical Service of Dental Semiology and Gerontostomatology between 2011-2012 and which required the restoration of the functions disturbed by odonto coronary dental lesions, periodontal affections or edentations, malocclusions, malrelations of the mandible to the skull and unsuccessful or deteriorated dental or prosthetic treatments.

The patients have been examined based on the results of an assessment chart correlating the reasons for which they presented themselves to the dentist with their desires; restoration of the altered physiognomic function requested only in the cases included in the treatments performed.

Facial examination was intended to evaluate the static and dynamic characteristics of the soft muscular-adipose tissues, the skeletal support, the dental arches as well as the relations these structures establish between them; it generates important data which will allow including the result of the treatment into a harmonious ensemble. The facial aspect is also determined by the amount and the quality of the muscular-adipose soft tissues and of the tegument, of their dynamics as well as of the bony structure consisting in the bones of the viscerocranium. The anatomic structures from the level of the face are analyzed as well as the aspect of the integuments, the facial grooves at ease and while smiling.

The relaxation of the muscle groups ensuring the mandible’s mobility represents a reference position for facial examination.

The smile consists in the modification
of the physiognomy of the entire face. The wideness of the smile conditions the exposure degree of the dental arches and the area of esthetic interest which must be taken into consideration during the restoration treatment of the dental arches (5).

The smile represents the nonverbal type of communication most often associated to the exposure of dental arches. The position of the oral commissure while smiling determines the number of teeth visible during the action.

The evaluation of the dental arches considering only the esthetic aspect and the introduction of those specific types of treatment which focus only on the appearances can have severe consequences on the future evolution of the dento-maxillary system (6).

*The intraoral examination* focused on underlining the elements that contribute at altering the physiognomic function: teeth, periodontium, edentated crests, and occlusal relations. Special care has been given to bone reorganization, to the dimensions of the alveolar crests and to the relations between them and to the potentially prosthetic space.

Clinically, the purpose of oral rehabilitation in the case of elderly patients consists in making the dentures look as natural as possible. Consequently, both natural and artificial teeth must be in harmony with the patient’s personality, age and sex (7).

**RESULTS AND DISCUSSION**

The distribution of the patients on age and gender groups indicated a higher frequency of the number of women (men 39-60.93%; women 25-39.07%) and of the age group 65-70 years (fig. 1).

![Fig.1. The gender distribution of patients](image)

The syndromes recorded were: total edentation – 9 cases (14.06%); subtotal edentation – 10 cases (15.62%); partial edentation – 12 cases (18.75%); odontocoronal lesions – 13 cases (20.32%); parodontopathies – 11 cases (17.18%);

<table>
<thead>
<tr>
<th>AGE GROUPS (years)</th>
<th>CASES</th>
<th>%</th>
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<tbody>
<tr>
<td>60-65</td>
<td>11</td>
<td>17.18</td>
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<tr>
<td>65-70</td>
<td>16</td>
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<td>70-75</td>
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<td>15.62</td>
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<td>75-80</td>
<td>14</td>
<td>21.87</td>
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<td>80-85</td>
<td>9</td>
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<td>85-90</td>
<td>4</td>
<td>6.25</td>
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The distribution of the patients by age groups was as follows (tab. I).
Malocclusions – 9 cases (14.07%) (fig. 2).

The medical history indicated the motivation patients had for requesting dental treatment as well as their expectations; it was noticed that the number of women asking for the restoration of the physiognomonic function was a lot higher than that of men.

![Fig. 2. Distribution of patients by syndromes](image)

In the case of movable patients which benefited of old deteriorated devices or conservatory dental restorations, there have been a number of complaints related to functional unsatisfaction, the material used and the technological approach which lead to physiognomic disorders and needed to be optimized or redone.

The disorders of the stomatognat system with effects on the dental facial esthetics and the attempts of systematizing then according to the anatomical-clinical criteria are mentioned in the work of numerous authors. Thus, in a generic manner, we can say that the physiognomonic aspect of the elderly is influenced by odontal and coronary lesions accompanied or not by substance losses, periodontal affections, integrity losses of the arch after edentation and dental migrations, occlusion disorders and by disturbance of the cranial-mandibular relation.

The local clinical examination often pointed out important clinical modifications of the stomatognat system and the prosthetic field, providing us useful information about how to chose and position the frontal teeth, the distribution of edentated spaces, the place of the occlusal plane, about how to model the vestibular crest or margins in removable prosthesis (8).

The low tonicity of the orbicularis oris is often noticed at the elderly patients and it is often a clue for the correct positioning of the frontal curvature (9) (fig. 3).

![Fig. 3. Low tonicity level of the orbicularis](image)
the oral cavity, commissures, facial grooves accompanied by asymmetries with under dimension of the lower part of the face and cranial-mandibular malpositions, due to either the loss of the support area or the incorrect prosthesis which does not ensure the normal relations and does not recreate the physiognomic aspect (10) (fig. 4).

![Fig. 4](image)

- a. Modifications characteristic to the ageing process;
- b. Defective prostheses which do not ensure the normal relations and do not recreate the physiognomic aspect

*The intra-oral examination* points out the existent oral pathology, in some situations with significant repercussions on the patient’s physiognomy. The odontal and periodontal status at the elderly patient is quite heterogenous because of the involutive phenomena and the associated pathology; there are patients with a more or less complete dentition, with odontal coronary lesions, parodontopathies, and malocclusions, partial or total edentations (11).

The examination of the old dentures is also an important clue for the creation of the new dentures if we consider the technology they have been made with and the degree of functional satisfaction.

*The restorative treatment* focused on reestablishing the physiognomic aspect with composite resins correlating the color, the shape and the dimensions to those of the remaining teeth as an emergency solution and temporization.

In cases of dyschromia, enamel defects, dental usage, diastemata, dental malpositions, development disorders of the lateral incisors, covering therapy with porcelain – metallic crowns which can combine aesthetic and mechanic qualities. The need of correct porcelain restorations at elderly patients confronts itself with two problems: first of all, each must serve at improving the resistance level and second, it must redo the initial physiognomy (12). The esthetic difficulties determined by the biological support can be corrected with the aid of porcelain bridges.

When talking about dental bridges, we have considered certain particularities in choosing the pillar teeth, the distribution of the potentially prosthetic space (modified because of the migration of the neighboring teeth at level 17 taking over space 16 and resorption of edentated crests) for intermediaries according to certain precise rules.
Dental esthetics - instrument for recreating a new facial esthetic to the elderly patient

An excessive loss of the bone or of the frontal periodontal support on limited areas has lead to certain difficulties resulted from the exposure of the interdental spaces accompanied by the widening of the interdental papillary niches, the elongation of the clinical crown and sometimes visibility of the cemento-enamel junction with difficulties in ensuring the proper hygiene and which creates difficulties to the practitioner. The loss of parodontotic teeth with recurrent periapical cyst brings along advanced bony resorption associated to physiognomic disorders.

The use of acrylic appliances has been the temporary solution in these cases accompanied by the simulation of the loss of the gingival tissue, covering the exposed radicular surface, improving the esthetic aspect and preventing food impaction, which is a transitory situation until permanent prostheses.

In the case of the spaces too wide, it was proposed the intervention on the shape accompanied by motion towards the oral of the contact points and pronounced vestibular convexities and chromatic individualization using darker shades which make them narrower; in the case of narrower spaces, a shift of the contacts towards the incisal area and a more flattened morphology give the impression of normal proximal wideness. In case the teeth are much too short (frequent case due to dental usage) the esthetic aspect can be improved by flattening the vestibular side and cervix narrowing. Elongated teeth can be aesthetically corrected through the transformation of proximal contacts into contact surfaces, rounded shapes and false cervices.

When artificial teeth were put on, we have taken into consideration that the upper and lower incisors must not be in contact in the centric relation, without allowing the possibility for an anterior movement of at least 1 mm and an angle of at least 15° in protrusive occlusion which leads to the necessity of correlating overbite and over jet.

The restoration of dental arches has been performed with a lot of common sense and power of discernment, respecting both character and facial expression by redimensioning the lower part of the face, repositioning the mandible and using gnatoprosthetic appliances.

The aesthetic aspect has always been a matter of sensitivity regardless of the numerous norms and indications, hence, regardless of the patient’s age; the purpose of restoration is that of obtaining aesthetically acceptable results (13). During the restoration process of the physiognomic function, the prosthetic variants took into consideration the type of edentation and the condition of the muco-osseous and dento-periodontal support.

It was noticed that the loss of teeth has affected the relative balance from the ageing process transforming ageing from a harmonious process into a disharmonious one. The multiple therapeutic possibilities for restoring the elder patient’s physiognomy foreseen by modern dentistry are still limited by the patient’s common sense and also by his financial possibilities (14).

Thus, it appears the problem of identifying a solution that is financially convenient for the patient and which ensures at the same time the complete functionality and esthetics specific to the restoration process.

Odontal and prosthetic treatments provide multiple possibilities for reestablishing the functions of the stomatognatic system, of the physiognomic aspect which is influenced by both oral pathology and involutive process.
Nonetheless the elder patient can be helped in regaining his self confidence by reestablishing his physiognomic aspect, this must not be always more important than the other basic principles of dental practice. Regaining the physiognomic function of the stomatognat system by improving the gnatoprosthetic appliances represents an essential area of interest for the contemporary dentistry (15, 16) (fig. 5).

![Fig. 5](image)

**Fig. 5.** a. Faces characteristic to a totally bimaxillary edentated person  
b. Reestablishing the individualized physiognomic function

Considering all that was previously stated, as well as the high number of the elderly affected and which are every time more interested in their aspect, our main mission consisted in the possibility of improving their disharmonious ageing process by replacing their local infirmity and thus, improving the quality of their lives.

Esthetics at the elderly patient, in the contemporary dentistry, relies on an interdisciplinary collaboration based on a complex and complete medical analysis, subordinated at its turn to the concept of total oral rehabilitation. In this concept, we can reiterate what Goldstain stated, that “den-
Dental esthetics represents the art of dentistry in its purest form”.

CONCLUSIONS
Solving the problems of the elderly and the success of the treatments can only be reached after a correct assessment of the involutive phenomena which influence the oral environment, after understanding and knowing the local and general factors which predispose to oral disorders as well as the different techniques and materials.

The main objective that must guide our every therapeutic attempt must always consider the introduction of teeth into the general picture of facial structures, in a manner as efficient as possible so to not underline even more the infirmity that appeared due to an altered odontal, periodontal or arch integrity.

REFERENCES