

Restoration the Dent- stomato-facial Aesthetic Balance, a Target of Dental Therapy, Regardless the Patient's Age

DIANA CERGHIZAN¹, TATIANA BRANASCO², ISABELLA CRISTINA BRUJBU¹, VASILICA TOMA^{2*}, CRISTINA IORDACHE²

1.University of Medicine and Pharmacy, Faculty of Dental Medicine, 38 Gheorghe Marinescu Str., 540139, Targu Mures, Romania

2.Grigore T. Popa University of Medicine and Pharmacy, Faculty of Dental Medicine, 16 University Str., 700115, Iasi, Romania

For centuries, literature and art have indicated that the smile has its own beauty and that it has an essential role in facial aesthetics. The principles associated with the discovered systems make it easier for the dentist to achieve superior aesthetics. The aesthetic and prosthetic importance of the teeth is substantial, which makes all the methods of treatment - essential. The smile is one of the expressions of the human face that influences our image and relationships with others. The self-confidence, the satisfaction of a pleasant appearance and the charisma of a jovial person conquer at first sight and categorically represent an asset. Dental cosmetics became more complex, much more an art than science; through it, each of us have the ability to change the appearance of the teeth. We can expect different recognition and appreciation abilities in terms of optimal dento-facial aesthetics by partial or total edentulous patients. The characteristic of dental-facial aesthetics are somewhat related to civilization, origin and geographical area. The restoration of the dental-somato-facial aesthetic balance represents a desideratum of dental therapy regardless of age. A good knowledge of the principles of evaluation of the dental and somato-facial aesthetic equilibrium as well as of the principles and individualized restoration methods can provide the dentist with success in the therapeutic approach. The study was conducted on a group of 71 patients, between 2015-2016, belonging to different social backgrounds and age categories. Treatments needed for the clinical situations in the investigated study lot were grouped into: two or more obturations (with the highest weight in the investigated clinical situations), followed step by step by: fixed prosthesis-microprosthesis or aggregation element, fixed prosthesis deck body; endodontic treatment; extractions. The need for treatment at the level of the frontal group is represented primarily by obturation, followed by conjunctions (unidirectional prostheses or aggregation elements). Extractions also occupy an important place.

Keywords: facial estate, mandibular dynamic, aesthetic balance, restaurations, morpho-functional refacing

People's concern for aesthetics also extended to the teeth, altering their shape and colour, to get a dental-faced look as pleasant as possible. However, this preoccupation for the beauty of the teeth is not also taken care of for their health, which makes it difficult for young people to get cavity edema, traumas, periodontics that disrupt the functions of the dentistry system [1,2]. Ceramics through dental restorations tried to dissimulate the artificial by imitating it as correct as possible. *Dental ceramics manipulated with a minimum workout and taste, lends itself to any subtlety of form and colour in imitation of countless individual teeth variations* (Jean Claude Harter) [3,4]. The anatomical determinant is one of the important ones in the realization of the mandibular dynamics. From the functional point of view, we distinguish the anterior determinant, the anterior anatomical and the posterior anatomic occlusal determinant. Dental occlusion is the factor that maintains aesthetic restorations in function and ensures the health of dento-maxillary structures [5,6]. Our patient should not only be healthy, but also be full (correct mastication), and be able to speak (correct phonation) in order to be able to express happiness due to restoration. Another very important trend in current dentistry is the increased attention given to the junction between periodontium and prosthetic work, which is the weak point (*Achilles heel*) and the place where patients most often notice *that the tooth is false*.

The radiographic examination provides relationships on the condition of the periodontium, the ratio of the enamel junction to the interdental bone septum, the root shape [7,8].

Increasingly emphasis is placed on gingival aesthetics and on the junction between the tooth and the gum. All of these have the role of perfecting the criteria of gingival aesthetics that assures the ensemble a special final appearance and will maintain the health of the periodontal complex [9,10].

The assessment of the shape of the face allows the patient to be placed in one of the four constitutional types: oval or round facies, rectangular, trapezoidal with the base up and trapezoidal with a large base down. Facial symmetry is one of the important criteria underlying the assessment of the face [11,12].

The smile involves the change of physiognomy in all the facial stages, but the interest of anatomical elements from the lower floor level is most important: the labia slit extends, the upper lip rises and stretches, and the free edge of the lower lip becomes concave [13,14].

The amplitude of the smile determines the degree of exposure of the dental arcades, and thus the definition of the area of aesthetic interest must be taken into account during the dental arcade restoration treatments. The profile's assessment requires that the patient be positioned with the floor plan parallel to the floor; a second plan-aesthetic plan, which achieves an 8-degree angle with the Frankfurt plan and which is considered more appropriate to constitute a reference for the horizontal plan [15,16].

Clinical examination of the dental arches for the purpose of assessing some parameters of aesthetic importance is best done under the conditions of an ample smile. The shape of the dental arches in the frontal area is an important aesthetic factor not only because of the wide exposure of

* email: vasilicatoma40@yahoo.com; Phone: 0742154358

this area during the smile but also because it influences the position of the upper lip [17,18]. Along with the shape, position, colour of the teeth, the appearance of the gingival tissues adjacent to them is appreciated, because a harmonious assembly can only be defined under the conditions of a periodontal speculative structure: for this reason, the gingival colour, level and degree of exposure of the gum free and interdental papillae in the smile, even the appearance of the fibroma covering the alveolar processes, are elements whose analysis completes the examination of dento-facial aesthetics [19,20].

The shape of the teeth is one of the most important properties, which essentially contributes together with optical properties, colour and translucency, in defining the aesthetic aspect. The colour parameters can be expressed by different colour analysis systems [21,22]. The system proposed by Munsell expresses the colour through three parameters: hue, saturation and brightness. Along with the colour parameters of the dental structure, the characteristics of opacity / opaqueness, opalescent, fluorescence must be taken into consideration for the optical defining of the dental structures. The complexity of the optics of the teeth derives from their particularities of their shape and structure. Knowing the optical properties of these dental rigid structures is essential in the techniques of direct restoration - with composite and indirect resins - with ceramic masses [23,24].

The analysis of the optical properties of the dental structures is one of the essential steps for the success of the treatment aimed at restoring the dental units through direct restorative material or by prosthetic means [25,26].

Types of biomaterials used for the aesthetic restoration of frontal teeth

The adhesive techniques of working with composite resin based materials are an excellent way of restoring a minimal invasive frontal teeth that can be applied and completed in the vast majority of cases in a single working session in the dental office without the participation of the dental laboratory. Aesthetic composite adhesive direct restorations allow the replacement of irreversible, lost or structural defects of dental hard structures in disorders of carious etiology (simple tooth injuries to vital teeth) or not carious, namely: wear injuries (attrition / abrasion / erosion), traumatic lesions (with coronary location without irreversible pulpal irritation) and dystrophic (dental / dental) lesions [27,28]. A special place deals with the solution of dental dyschromias (in relation to their etiology) through direct faceting. In addition, it is possible to remodel / modify the coronary morphology, integrity of teeth, inducement of these injuries [29].

The current techniques used are mainly based on various ways of stratification of composite resins. A composite material is a combination of two or more chemically different materials with an interface between them [30,31]. Adhesion-dentinal systems are a decisive component in the end result of these restorations; the therapeutical approach of the substrate offers the possibility of achieving higher adhesion forces, marginal closure and optimal sealing for restorations that result in an increased longevity of these restorations. Composite resins (sometimes referred to as *direct faces* or *plastic* are made of a tooth-coloured plastic resin material. The ceramic faces represent the most demanding treatment at present. The introduction of ceramics in dentistry is due in the first place to the special aesthetic qualities and to the fact that it is a very inert material very well tolerated by the tissues. The great advantages of this material are: the ideal chromatic

(close to natural teeth, colour stability, translucency), biocompatibility, thermal conductivity reduced chemical inertia, mechanical resistance to tearing and bending, surface density and gloss. The disadvantages of the ceramic are: low tensile strength, high cost price, the fact that matching and post-finish adjustment is impossible and the presence of internal and external cracks lead to fracture.

Chemical composition

Ceramics is a biocompatible material with the soft tissues of the human body, has physicochemical and optical capabilities that are closest to dental tissues. From a chemical point of view, dental ceramics is a complex silicate. The raw materials that come into its composition are: feldspar, quartz and kaolin. Besides these are also present: metal oxides, fluxing agents, pigments, binders, alkaline earth compounds. Organic binders are: starch, glucose or sucrose, dextrin, which have a role in increasing the capacity of homogenizing ceramic masses. Ceramic masses have a slightly different composition from one variety to another depending on the working technology. Generally, they appear in the form of powders that mix with the liquid, but some modern ceramic masses may appear as ingots.

The ceramic masses are not attacked by saliva, they are very well tolerated by the periodontium as well as by the dental tissues. Dental ceramics do not retain the bacterial plate due to the surface-confined excellence. It is a thermal insulator for dentin and pulp, preventing transmission of thermal variations from the oral cavity.

The high hardness of ceramic masses associated with brittleness requires great precision in establishing occlusal ratios. Ceramic masses are inert materials, not attacked by common acids or other chemical agents except for hydrofluoric acid. The aesthetic requirements in the frontal area are obviously extremely high and they have to be combined with the current trend of minimally invasive dentistry in which it is desired to achieve aesthetic and functional changes with minimal damage to the dental structures [32].

Experimental part

Given the complexity and variety of pathology of frontal edema encountered in patients, the study aimed at assessing the involvement of both aesthetic principles governing oro-maxillo-facial territory and somatic aesthetic principles, paying particular attention to the odontopathodontal status and the mucous-bone of the front edent patient or the disharmonies of the frontal area, the complications and restorative treatments present in the triggering of the sign and symptoms area of this clinical entity with profound implications for the oral balance and social insertion of the patient. The research aimed at materializing the following objectives:

- establishing the role of non-invasive paraclinical evaluations on the individualization of the therapeutic plan, with an early identification of the dental system's effects and the general state incidence in the particularization of the therapeutic algorithm;
- determining the impact in the population of different types of tooth lesions in the dental front group;
- establishing the predisposition of localization of these lesions at the level of different odonto-periodontal substructures; establishing the need for treatment.

The observation sheet that took into account the data collection was set up, following the following sections: environmental factors, the general state of the organism, dental prophylaxis. Based on these considerations and systemic integrity at the level of the entire body of the

stomatognized system, it was desired to collect data on all the elements that may impact on the homeostasis balance and which may give references to the evolutionary nature of the existing conditions. The study was performed on a group of 71 patients aged 18-50 years. Of these, we detained patients who presented different types of dental frontal dental injury, affecting the various functions of the dental system, assessing the need for treatment in these patients.

Results and discussions

From the whole of the batch investigated, our research is addressed to the age group of 18-50 years. The repartition of the distribution by age and gender of the whole lot.

Table 1
SEPARATED BY AGE GROUPS

Age groups	Number of patients	Percentage
18-25 years	23	32.39%
25-35 years	28	39.44%
35-45 years	9	12.6%
45-50 years	11	15.49%

It is noted that more than half of the investigated group (71.83%) are aged up to 35 years. Over 40 years old, being only 27.55% of the total. Another important factor in our analysis was the distribution by sex, total batch and age ranges. The prevalence of female sex is 51 cases (71.83%), compared to male cases (28.16%). The number of women is higher than that of men, with the highest gender ratio between 25-35 years, where there are almost 4 times more women as men. In the investigated patients we found numerous types of injuries at the level of the frontal area - both at the jaw and mandible, which can affect the functioning of the stomatognomate system in different degrees. The lesions found, treated or untreated were: caries, obturations, editions, restorations prosthetic, anomalies. Patients with the upper frontal area affected are 64 of them representing (90.14%) of the total group.

We conclude that those with inferior teeth have 12 (16.90%) and those with inferior integers are in number of 52 (72.23%) of the total lot. Of the patients with a normal mandible frontal area, 38 are women (53.52%) of all women with the affected anterior jaw area. Of the total number of women with the upper frontal area affected (47 women-66.19%), 9 women (12.67%) were affected by the mandible front area, compared to men with a lower number of 3 (22%) of all men with the affected frontal area (17 males - 23.94%).

The number of patients without upper frontal group injuries is much lower, 7 cases, representing 9.85% of the total group. They all have injuries at the level of the lower front group. Of these, 3 are males, representing 4.22% of all patients, and 4 are females, representing 5.63% of all patients with lesions at the previous segment.

The lesions with previous aesthetics of both the upper and lower groups were taken into account. At the level of the upper front group, out of a total of 64 patients with the upper anterior segment, the most common lesions are the existence of obturation and fixed protections - microprotective or aggregation elements in the form of shell crowns.

In the case of the lower front group, of the total group of 19 patients with the lower group, the prevalence of position abnormalities (7 patients representing 36.84% of the total group with the lower anterior segment) was followed, followed by a lack of teeth in the lower front group patients, representing 15.78%. Of the total group of 71 patients, 38 of them had other types of lesions: enamel erosions, gingival hyperkinesias, gingival recessions. Of the total group of 71 patients, 36 of them had repercussions in the stomach system, causing disturbances occlusal, occlusal and articular dynamics.

The most frequent cause of occlusion disorders was positional anomalies (13 patients - 18.30%), followed by edentations (11 patients - 15.49%).

In the last two places the causes of occlusal changes (3 patients - 4.22%) and incorrect fillings (2 patients - 2.81%) were produced in the dental system.

Malocclusion, with its mild, moderate and severe forms, is found in over half of the patients examined: 33.39% have mild malocclusion, 15.49% have moderate malocclusion and 2.81% severe malocclusion.

The treatments required for the clinical situations encountered in the investigated study group were grouped into: obturations on a surface and two or more (with maximum weight in the investigated clinical situations), followed in this order by: fixation-microprosthesis or element aggregation; fixed prosthesis-deck body; endodontic treatment; extractions.

Possibilities of morpho-functional recovery of the jaw frontal area

Case I: The morpho-functional reconstruction through ceramic faces 25-year-old patient, female, presented at the dentist's office to improve aesthetics. She wanted a proper aesthetics in the frontal area because she had an alveolar dento incongruence with cluster at the upper arcade. A dental aesthetic treatment is proposed with the help of ceramic facets (fig.1,2).



Fig. 1 Initial Clinical Study



Fig. 2 Preparation by lower and higher front grinding

The faces are engraved with a ceramic demineralizing agent, cleaned for 60 seconds with water jet, and dried until the demineralized area is bleached; apply a monobont inside the facet, leave for 60 seconds, gently dry and then apply Heliobont. Apply the retraction cord for good gingival isolation, then acid acid scratching on the surface of the teeth (37% phosphoric acid) is left for 15-30 s to act and then wash. Apply a tooth Syntac on the tooth surface, and after 15 seconds dry and apply the next adhesive, Syntac Adhesive. Finally apply the Heliobont. Remove the gingival retraction cord and wash the cavity with water jet (fig. 3-5).

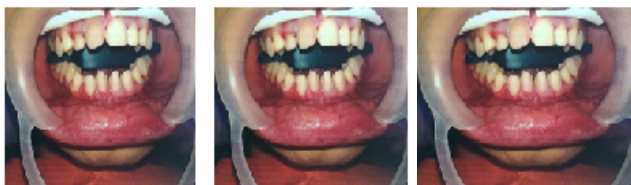


Fig.3 After fixing the faces

Fig.4 After a week

Fig.5. Clinical appearance of the facets

Clinical case II - Morphological functional repair through metal-ceramic crown

A 36-year-old male patient presented to the dental clinic for both aesthetic and functional reasons. The patient had not benefited for some time of dental treatments, in consequence his teeth have massive deposits of tartar and bacterial plaque. The jaw was chosen for fixed prosthetic work, metal-ceramic. The final result being a thankful one for the patient by solving physiognomic functions and masticators (fig.6-9).



Fig.6 Initial Clinical Situation



Fig. 7 After ablation of prosthetic works and extraction of the initial 2.6



Fig.8. OPG of the patient prior to restoration of odontal treatment



Fig. 9. The patient's initial OPG after conducting canal treatments

Occlusion footprint is extremely important for the success of the work. The footprint should be sent to the dental technician with the correct occlusion, because any slight mismatch may lead to an improper work at the occlusal level (fig.10-15).



Fig.10 After grinding the upper teeth



Fig.11 Arcade Shootin



Fig.12 Impression of occlusion



Fig.13 The working model



Fig.14 The prosthetic work on the work pattern



Fig.15 Final Clinical

Situation Clinical Case III: Morpho-Functional Restoration by Zirconium Ceramic Prosthetic Work

A 19-year-old patient is presented at the dental office to improve aesthetics in the frontal area. She opted for this type of work because the patient wanted a more physiognomic work where the metal would not be seen. Complete denture was performed, then it was chosen to whiten the teeth to the patient's requirements (wanting a whiter colour of the natural teeth). Choosing the colour for future prosthetic work. Taking the fingerprint for the temporary prosthesis (throughout the post-grinding period the temporary work was cemented so that the patient could get used to the future work better). Polishing the teeth (fig.16, fig.17).



Fig.16. After tearing and teeth whitening. Toothbrushing for treatment of the higher teeth.

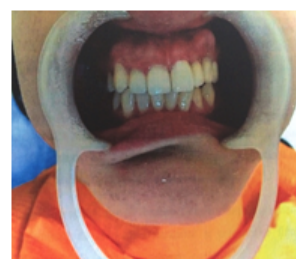


Fig. 17. Apply the gingival retraction cord and take the fingerprint for the future prosthetic work.



We may not forget and remember that once the patient arrives in the dental office, it should be treated with understanding and goodwill by the medical staff because his susceptibility is very high, because he practically puts all his hopes in the dentist he had chosen and any suspicious word and illusion will be strongly reflected in the patient's consciousness. The anxiety that often occurs

in patients who come to the dentist is given by inadequate or absent communication that deprives the patient of information so necessary for his mental and physical condition.

Conclusions

The aim of the study was to highlight the high degree of damage caused by numerous different odontous lesions of the population in the investigated group, consisting of patients aged 18-50 years, allowing us to conclude that these clinical situations have a well-defined place in the sphere of oral pathology. The clinical situation at the level of the upper front group, represented by the existing lesions and treatments, is dominated by the existence of fixed obturations and prostheses, by microprotections or by aggregation elements in the form of shell crowns.

By affecting several odonto-periodontal units located in the frontal area, the possibility of dental stomatognathic system dysfunction is much higher in this case.

The need for treatment at the level of the front group is represented primarily by obturation, followed by conjunctions (unidirectional prostheses or aggregation elements). Extractions also occupy an important place. The maxillary frontal dental group due to its privileged position on the dental arch has a determining role in the aesthetics of facial architecture. Any change in position, colour, lesion, free space creates major aesthetic discomfort that affects the patient from a sociological point of view.

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