

## STATISTICAL STUDIES REGARDING THERAPEUTIC APPROACHES FOR EDENTULOUS SOCIAL CLINICAL CASES IN STUDENTS' PRACTICAL STAGES

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### ABSTRACT

The variety of clinical cases met by the practitioner is a very important element in the choice of particularities for the development of partially removable prosthetic structures. **Aim:** The purpose of this study is materialized by the quantification of incidence and prevalence of edentation and its complications in social patients, with an emphasis on establishing the relationship between the general state of the patient, the environmental factors and the clinical and biological indices. **Material and method:** A large group of patients was selected and studied in a group of 68 patients – 36 women and 32 men, coming from the urban area 54.55% and 45.45% from the rural area, who were examined and treated for a period of two years (2015-2017) at Clinical Base of the Faculty of Dental Medicine - UMF "Gr. T. Popa" Iasi. **Results:** The most common situation was that of the Kennedy 1 class - found in 33% of cases, followed by Kennedy's second grade (17%) and grade III (14%). A comparable percentage of patients (10%) had a Kennedy 4th grade, and the lowest incidences were recorded for edentation classes V and VI (14% and 12% respectively). **Conclusions:** Each clinical case is having a possible ideal therapeutical solution based on a complex algorithm of conception, selection and materialization

**Key words:** social clinical cases, removable prostheses, edentulous, removable prostheses

### INTRODUCTION

In the last decades, the treatment of the wide partial edentation has undergone major changes from multiple causes, including increasing the duration of arched tooth maintenance and the introduction of new techniques, materials and methods[1,2].

The consequences of the extended partial edentation on the patient's social integration have a particularly great impact, putting their mark on his/her psychic behavior[3,4]. Therefore, partially mobilizable restorations (therapeutic solutions of choice in such cases) have sustained and will support improvements over time to alleviate the psychic disorders that occur as a result of the alteration of body matter.

The increasing frequency of partial edentation, in particular due to dental caries and complications, as well as other illnesses, requires a closer analysis and a reconsideration of the therapeutic attitude that must be well-adapted and nuanced[5,6].

The variety of clinical cases met by the practitioner is a very important element in the choice of particularities for the development of partially removable prosthetic structures. The optimization elements are found in the prosthetic field (implants and corrective surgical interventions) as well as in the stages of realization of partially removable prostheses, all of which attract specific technological modalities.

In patients, restorations will particularly take into account the reproduction of primary morphology and aesthetic function. Patients frequently experience dental and occlusal disharmonies, which are still responding to orthodontic, mainly fixed treatments[7,8].

Asking the dentist to solve the edentation, many patients do not accept, at least in a first step, the mobilizable prosthesis, insisting on fixed prosthesis variants[9,10,11].

In these cases, the physician has the task of examining the case correctly and competently and of determining with the patient, according to his / her particular features, the optimal treatment variant under the given

conditions (cynical situation, technical, material and financial possibilities, biological and functional benefit of prosthesis, etc.)(12,13,14).

#### MATERIAL AND METHODS

The purpose of this study is materialized by the quantification of incidence and prevalence of edentation and its complications in social patients, with an emphasis on establishing the relationship between the general state of the patient, the environmental factors and the clinical and biological indices characterizing the muco-bone support, the parameters that influence the therapeutic variant, with the identification and application of stages in treatment solutions from simple to complex, anchored in classical or modern territory, dictated by the particularities of the clinical cases. A large group of patients was selected and studied in a group of 68 patients – 36 women and 32 men, coming from the urban area 54.55% and 45.45% from the rural area, who were examined and treated for a period of two years (2015-2017) at Clinical Base of the Faculty of Dental Medicine - UMF "Gr. T. Popa" Iasi. All the patients had partial or total edentulous diagnoses of various etiology and various complications in the absence of effective therapy or even due to faulty prosthesis

#### RESULTS AND DISCUSSIONS

Statistical processing was performed in SPSS 15.0, and Microsoft Excel was used for graphical representations.

We found a prevalence of female which is the basis of the predominance of aesthetic characteristics in future prosthetic restorations, correlated with odonto - periodontal status and muco - bone status, being well known that aesthetics is the essential requirement associated with females, at the same time the age range analyzed is the presumption of these exigencies, essential aspects in the choice of the therapeutic solutions , according to the type of edentation and the complications installed.

From the group of evaluated patients the largest part were of the urban area 69.57% , the factor of origin has to be related to the living and working conditions, elements that

make their mark on the level of the oro-dental status, without eluding the patients' knowledge of the existing therapeutic solutions through the internet and the media.

In terms of etiology , most patients presented caryotic disease as etiology, followed by periodontal disease, to an important extent materializing the etiology of congenital causes, a proportion of 8.70% being due to apparent causes. Etiological aspects influence the architecture of the prosthetic field and, implicitly, the choice of therapeutic solutions.

The prevalence of acquired etiology of the large partial edentation is to be noted, materialized by the sum of all complications of the diseases of the stomatognathic system or by the therapeutic failure of each clinical entity in the oro-maxillo-facial territory, the immediate consequence being the dental extraction, the therapeutic work influencing the morphology of the future muco-bone components. An undeniable fact is that patients, although medical contemporaneity is governed by the prophylactic principle, are presented to the emergency dentistry, triggered by the painful phenomenon, in which case the extraction is the final option.

Inflammatory periodontal infections induced by plaque are probably the most widespread inflammatory disease in humans, virtually affecting all adults around the world.

The most common clinical form in dental practice is represented by hypodonty, the interested teeth, in the order of their absence in the arcade, are represented by the molar 3, considered to be emblematic for the phylogenetic evolution of the human species, followed by the upper lateral incisor and the second premolar.

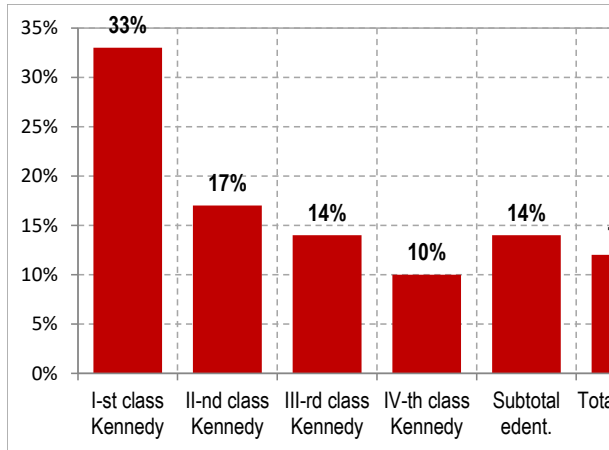


Fig. 1. Graphic representation of the group studied by edentation class

We also looked at patients' edentation classes. The most common situation was that of the Kennedy 1 class - found in 33% of cases, followed by Kennedy's second grade (17%) and grade III (14%). A comparable percentage of patients (10%) had a Kennedy 4th grade, and the lowest incidences were recorded for edentation classes V and VI (14% and 12% respectively)(Fig.1).

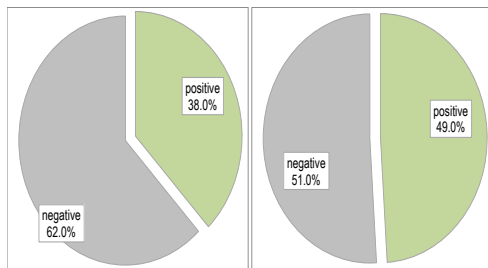


Fig. 2 Sample's structure on clinical indices

The criteria for the particularization of the therapeutic solution, grafted on morpho-functional peculiarities specific to the 65% analyzed age range, belong to the clinical-biological indices characterizing the dento-periodontal support, an important percentage of the local complications. The damage degree of the odonto-parodontal support is 62% and mucosal bone support is 51%, equal to the one generated by the loco-area complications that clearly characterize the therapeutic approach. The socio-economic criterion underlies the final therapeutic solution(Fig.2).

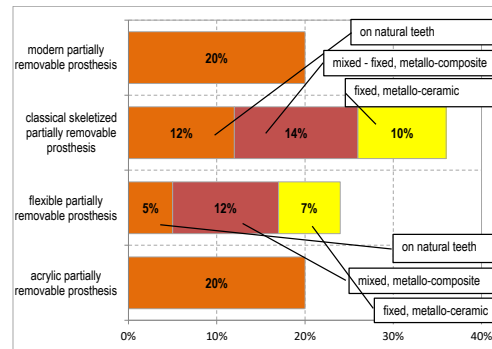


Fig. 3 The graphical representation of the range of the chosen therapeutic solutions

Regarding the prevalence of therapeutic solutions in the studied group, we notice the share of modern mobilizable solutions, followed by implanto-prosthetic therapy, statistically significant percentages of classical therapeutic solutions, the lowest percentage of social prostheses, the choice being dictated by the socio-economic criteria(Fig.3).

According with general aspects of the study we will detailed one representative clinical cas.



Fig. 4 Intraoral examination of the patient

The following diagnoses was given, heeling the clinical examinations and paraclinics and the model study:

- Diagnosis of general condition: good (favorable to dental treatment)
- Odontal diagnosis: generalized grade 3 abrasion, with occlusal trauma etiology, masticatory and physiognomy disorders with localized, loco-regional and general complications, slow evolution towards pulp opening, prognosis favorably under treatment, untreated.
- Periodontal diagnosis: generalized chronic marginal periodontitis, of plurifactorial etiology, slow evolution, complicated with

grade 2 mobility, with prognosis favorably under treatment, untreated.

- Partial maxillary edentulous class I Kennedy and a partial mandibular edentation Kennedy class I with one change, subclass C Lejoux, odontal etiology, functional masticatory, swallowing physiognomy disorders, slow evolution, local complications, loco-regional and general, prognosis favorable under treatment, untreated.

- Malocclusion due to lack of static occlusion and static and dynamic occlusion parameters, edentation etiology, functional disorders, slow evolution towards total edema, local, regional and general complications, prognosis favorably under treatment, untreated.

Extrapostural-eccentric mandibular-cranial malrelation, consecutive to edentation, with functional disorders, local, loco-regional and general complications, slow progression to dental dysfunctional syndrome, favorable prognosis under treatment.

Dyshmetostasis of the stomatognathic system manifests clinically with occlusal, muscular, articular involvement (Fig.4).

The therapeutic plan was governed by the following objectives: the prophylactic objective: Non-specific local prophylaxis, health education, general prophylaxis - vitamin therapy, psychotherapy and specific local prophylaxis.

Regarding the curative objective the morphological aspects performing fixed and partially removable prosthetic restorations at the level of both arches, jaw and mandible, to restore dento-alveolar integrity.

The functional aspects concerning the restoration of dental functions: mastication, phonation, swallowing, physiognomy.

In both the jaw and the mandible, we face a balanced symmetrical-asymmetric edentation, which in conjunction with the orientation of the RP vector towards the posterior indicates both the deficient support area and the topography of retaining, supporting and stabilizing elements, if we remain as a variant in the territory of removable prosthesis.

Establishing treatment has taken into account the following criteria:

A. Socio-economic

- Favorable, given the economic possibilities, the patient's time, her profession and the distance to the dental office

B. Technical equipment

- Favorable

C. The professional competence of the dental team

The evaluation of the clinical and biological indices is a decisive starting point for the elaboration of a relevant therapeutic plan, which is valid for the chosen therapeutic option that can remain anchored in the sphere of social prosthesis.

The loco-regional indices are characterized by the negative aspects cantonized at the ATM level, noting aspects of the mandibular dynamics characterized by asymmetric condylar aspect, which accompany the left-hand laterodeviation.

Regarding the local odonto-periodontal clinical-biological indexes, there is a small number of odonto-periodontal units with reduced coronary volume, which is reflected in the lower level sub-dimensioning and generalized accentuated abrasion.

Regarding the periodontium, we notice the periodontal recession accompanied by the radiological clinical-biological index indicating the horizontal lysis phenomenon in the horizontal plane, aspects accompanied by the 1st degree dental mobility.

The muco-bone support is characterized by the presence of resilient mucosa, irregular crests, negative indices that can be positively promoted by specific training or choosing a biomaterial with a structure adapted to these particularities.

Negative aspects related to occlusion reside in the modification of static occlusion parameters due to coronary destruction stretched to existing odonto-periodontal elements, inducing changes in dynamic occlusion trajectories, evaluation criteria to be taken into account in provisional prosthesis, essential for the rehabilitation of this clinical case.

As a result of the investigation and review of the treatment plan in accordance with all the principles and criteria mentioned, the following therapeutic solution was chosen:

Maxillary: Fixed restoration 1.2-2.3 made from metal-composite group level in front

outstanding and a partial removable skeletal denture consisting of a main palate connector plate metal mucosal (built by the French version), 2 saddles mixed metal-acrylic 8 artificial teeth , acrylic, and features for maintenance, support and stabilization 2 T clasps(Fig.5).

3.4, 43, and Bonwill clasp at level 45,46, and Ackers clasp at level 34(Fig.6).

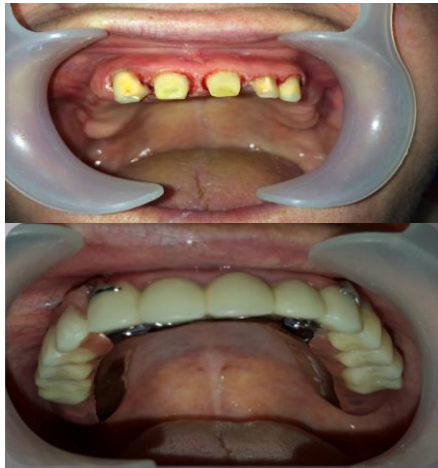


Fig.5 Maxillary therapeutical solution  
Mandible:Fixed restoration 3.3, 34 si 43-46 and Skeletal prosthesis consisting of: 3 saddles mixed metal-acrylic;8 artificial teeth, Dento-mucosal metallic main conector;EMSS - 2 clasps in "T" at level



1.Thus, in the case of removable prosthesis, priority is to restore the integrity of the dento-alveolar arcade and to stop the processes of atrophy and resorption accompanying edentricular state.

2.Each clinical case is having a possible ideal therapeutical solution based on a complex algorithm of conception, selection and materialization.



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