

CONTEMPORARY ASPECTS OF PROVISIONAL FIXED PROSTHESIS

Irina Grădinaru¹, Cristina Gena Dascălu^{2*}, Magda Ecaterina Antohe¹

“Grigore T. Popa” University of Medicine and Pharmacy Iasi

Faculty of Dental Medicine

1. Department of Implantology, Removable Prosthesis, Dental Prosthesis Technology

Faculty of Medicine

2. Department of Preventive Medicine and Interdisciplinarity

*Corresponding author. E-mail: cristina.dascalu@umfiiasi.ro

CONTEMPORARY ASPECTS OF PROVISIONAL FIXED PROSTHESIS (Abstract): Provisional prosthetics in the rehabilitation algorithm with fixed restorations has a number of particularly important roles in transmitting the data absolutely necessary to the dental laboratory for the achievement of the definitive work, which influences the healing of periodontal tissues and, definitively, the occlusal scheme and the resizing of the vertical occlusal dimension. The **aim** of this study is to analyze the factors involved in the choice of provisional prosthesis and the implications this has for the definitive prosthesis according to the particularities of each individual case. **Material and methods:** A total of 86 patients diagnosed with partially reduced edentulousness, i.e., coronal recessed dental lesions, were included in the study group and clinically and paraclinically evaluated for prosthetic rehabilitation by different types of definitive restorations from the current prosthodontic range, prefaced within the therapeutic algorithm of provisional restorations. **Results:** The current clinical-technological algorithm of rehabilitation with fixed restorations, provisional prosthetics represents an extremely important step in order to conform the periodontal tissue on the one hand, to protect the prepared substructures on the other hand, and last but not least to prefigure the shape of the future prosthetic rehabilitation in the context of dento-somatic-facial harmony. **Conclusions:** Prosthetic restorations made by the digital technique are extremely precise, their design is laborious considering all biomechanical aesthetic criteria so that we have individualized restorations that lead to successful final prosthetics. **Keywords:** TEMPORARY FIXED PROSTHESES, PMMA, DIGITAL APPROACH, AESTHETICS, GENERAL STATUS.

Over time, fixed prosthetics has gone through important evolutionary stages in terms of the biomaterials used and the technological line approached, with particular attention being paid to the therapeutic algorithm used in contemporary society. Thus, we cannot talk about fixed prosthesis without being preceded by provisional protection, this stage being particularly

important both from a morphological and functional point of view (1).

Provisional prosthetics in the rehabilitation algorithm with fixed restorations has a number of particularly important roles in transmitting the data absolutely necessary to the dental laboratory for the achievement of the definitive work, which influences the healing of periodontal tissues and, defini-

tively, the occlusal scheme and the resizing of the vertical occlusal dimension. It is important to mention that the provisional prosthesis configures the correct morphology for the performance of the phonatory function at optimal parameters as well as for the design of the aesthetic aspects related to the shape and its integration into the dento-somato-facial harmony (2, 3).

Successful clinical outcome is dependent on a whole range of factors in which the effectiveness of the provisional protection is essential and is also a relevant starting point for the patient expectations related to prosthetic work in provisional prosthetic restorations may be of shorter duration or long-lasting, being recommended in different clinical situations where laborious therapeutic interventions are performed in the periodontal territory (4, 5, 6).

For a long time considered as an accessory, the provisional prosthesis has become, during the evolution of theoretical and practical knowledge and therapeutic resources, one of the "key" stages of fixed prosthetic restorations. A quality transitional prosthesis is a prosthesis that fulfils its role: aesthetically, functionally, therapeutically.

The aesthetic role of the transitional restoration is the most spectacular result of the transitional prosthesis, the restoration has the advantage that it can be retouched in such a way that the laboratory receives a model that accurately reproduces the shape, volume, placement of convexities, accompanied by explanatory notes on color, shade, make-up (7, 8, 9).

The functional role of the provisional prosthesis includes three aspects: dental, periodontal, functional. Dental appearance refers to the morphological resolution of the edentulousness and the recovery of the

primary function affected by the edentulousness: aesthetic for the frontal area or masticatory for the lateral area. With preparation, the biomechanical value of the teeth decreases, whether vital or not, mechanical protection against chemical or microbial aggression must be ensured. The provisional prosthesis acts as a barrier between the prepared tooth and the oral environment. A tight denture-prosthetic seal, even if it is provisional, is a conditioning factor for isolation from the oral environment. Although imperfect, thermal insulation allows the vitality of the teeth to be maintained, thereby also contributing to patient comfort. Occlusal aspect, using provisional prostheses restores static and dynamic occlusal contacts, the point of contact with antagonists and neighbors. Dental migrations after preparation, impression and occlusal or proximal retouching of the definitive prosthesis are limited. The provisional prosthesis allows quality control of the preparation and volume of the definitive restoration, avoiding occlusal interferences. The periodontal aspect aims to maintain the marginal gingiva in a physiological position after the preparation of dental substructures (10, 11, 12).

AIM

The aim of this study is to analyze the factors involved in the choice of provisional prosthesis and the implications this has for the definitive prosthesis according to the particularities of each individual clinical case.

MATERIAL AND METHODS

A total of 86 patients diagnosed with partially reduced edentulousness, i.e., coronal recessed dental lesions, were included in the study group and clinically and para-

clinically evaluated for prosthetic rehabilitation by different types of definitive restorations from the current prosthodontic range, prefaced within the therapeutic algorithm of provisional restorations.

RESULTS

In prosthetic therapy by conjunctive means, the provisional prosthesis is an indispensable element in both single and large restorations. Without excluding the protective role of the prepared substructures, the subtle occlusal, periodontal, and functional requirements of temporary restoration remain an indisputable fact. The

“dialogue” provisional prosthesis - practitioner - patient has as its motto but, and as a conclusion at the same time, a definitive piece correctly integrated into the functionality of the dental system.

Regarding the distribution of the group of patients according to sex, a percentage of 56% for women and 44% for men was recorded, the sex of the patient correlated with age, general status and aesthetic demands directs us towards a certain type of prosthetics to be grafted according to the individuality of each clinical case with the demands of contemporary aesthetics (fig. 1).

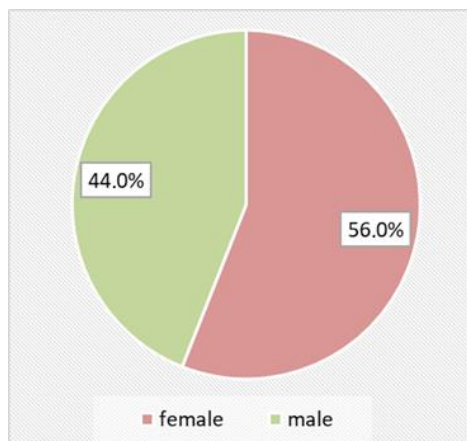


Fig. 1. Distribution of patients according to gender

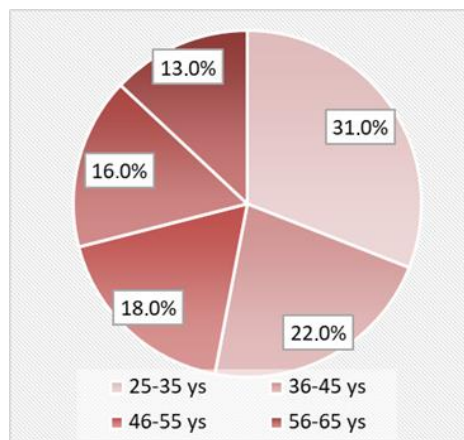


Fig. 2. Distribution of patients according to age

Regarding the age of the patients we have a wide range from 25 to 75 years as prevalence of coronary dental lesions and partially reduced edentulousness, this pathology is found in a percentage of 31% in the age range 25 - 35 years, a percentage of 22% is found in the age range 35 - 45 years, while for the age range 45 and 55 years a percentage of 18% is found, for the age range 55 - 65 years a percentage of 16% is found and a percentage of 13% is found in

the age range 65 - 75 years (fig. 2).

The general condition of the patient has always been an extremely important starting point for dental therapy, as many general diseases influence the structure of the oral cavity and the medication for each pathology, thus decisively influencing the therapeutic algorithm and the choice of the type of preparation and the type of prosthesis. Thus, cardiovascular diseases were recorded in the highest percentage in the group analyzed in

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a percentage of 32%, it is important to note that of this percentage a quarter were taking anticoagulant medication, as for metabolic diseases, they are found in a fairly high percentage of 28% within the general pathology followed by respiratory diseases in a

percentage of 15% and digestive diseases in a percentage of 13%. A percentage of 12% was recorded in patients with general oncological diseases which are often associated with long-term temporary prostheses such as PMMA (fig. 3).

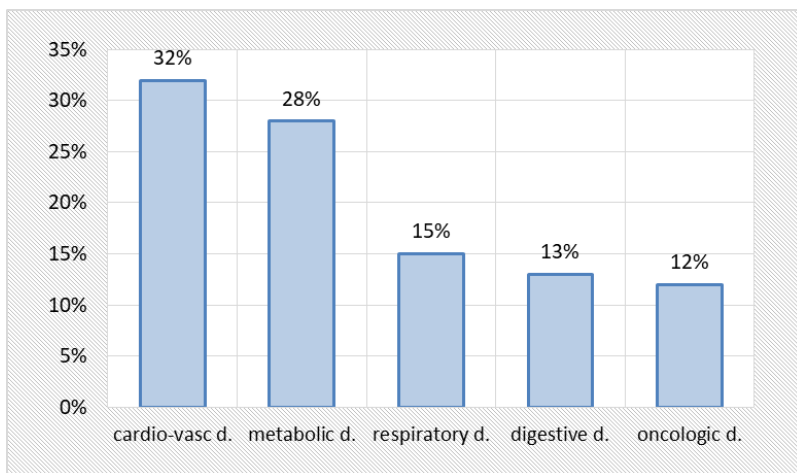


Fig. 3. Distribution of patients according to the assessment of the general condition

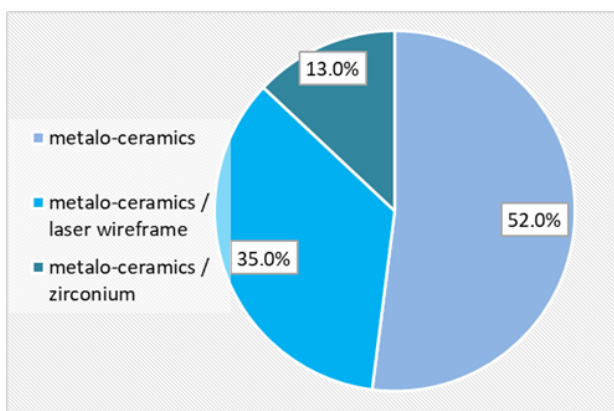


Fig. 4. Distribution of the types of performed fixed prostheses

As far as definitive restorations are concerned, classical metal-ceramic restorations prevailed as a percentage, followed by metal-ceramic restorations with laser frameworks, a current technology which is extremely precise and which provides the

best periodontal reports, with a percentage of 13% of zirconium-ceramic restorations made with digital techniques. As for the type of provisional prosthesis, it was anchored both in the digital and in the classical territory (fig. 4).

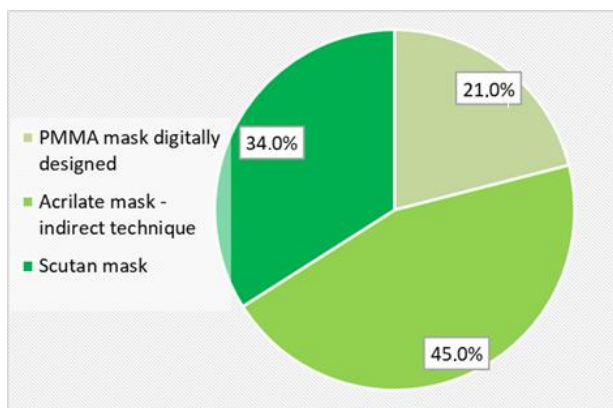


Fig. 5. Distribution of temporary prostheses performed

The design of provisional prostheses by means of digital technologies was carried out in a 21% percentage of patients, followed by classical acrylic prostheses which were found in a percentage of 45% and Scutan mask carried out in the dental surgery was found in a percentage of 34% (fig. 5). As regards the location of temporary restorations, 64% of the restorations were placed at the frontal level, of which 30% were temporary restorations that were preceded by gingivectomy-type prosthetic preparations; 36% were placed at the lateral level. The accuracy of adaptation of the transitional denture margins to the preparation limits is the key factor in periodontal protection. It allows, by its anatomy, dento-periodontal hygiene, so it must respect the “shapes” of a definitive restoration. At the cervical level, its morphology must fit in with the morphology of the neighboring teeth, respecting the natural convexities, which on the one hand divert the food bolus away from the marginal gingiva and at the same time allow, through the play of muscles, self-cleaning. For Parkinson, “the gingival super contour protects the dental plaque, not the gingiva”.

Over contours appear to be much more harmful than under contours (for definitive restorations), especially if the restorative boundary is placed subgingival. The dimensions of the periodontal biological space are maintained by correctly shaped provisional denture margins, the volume of the margins compatible with a correct emergence profile and the surface condition of the material perfectly polished, thus avoiding inflammatory reactions. Provisional prosthetics by the digital method was extremely important in cases that had prosthetic work with which the patient was not very satisfied, by means of this prosthesis, exploring all the possibilities of functional morphological reconfiguration and occlusion ratios, so that the patient's expectations were assured. A concrete case in this regard was the realization of a PMMA prosthesis that was applied after a gingivectomy, the patient having been previously restored with a zirconia-supported ceramic work, the future restoration being also zirconia-supported ceramic. The frontal curvature will be completely restored, and the shape of the teeth modified according to the patient's facies so that

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the final results will be as expected (fig. 6).

Another clinical situation was represented by a digital restoration, also applied in the frontal area, an area of maximum exigency. This time the method was repre-

sented by a long-term provisional prosthesis until the patient's general status could be balanced so that the absolutely necessary prosthetic preparation steps could be carried out in this clinical case (fig. 7).



Fig. 6. Digital and clinical aspects of PMMA provisional rehabilitation

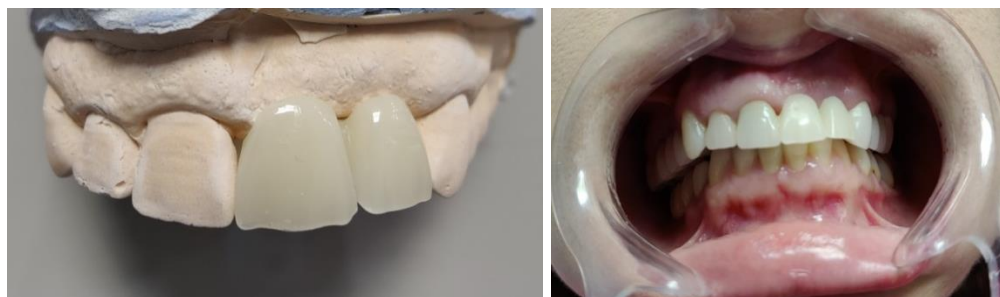


Fig. 7. Aspects of long-term provisional prosthesis

DISCUSSION

It is also necessary for the patient-practitioner-technician trio: for the patient it compensates for aesthetic and/or functional disability, for the practitioner because it has therapeutic value, authorizing him to continue treatment, and for the technician because it is a source of clinical data that allows him to comply with the highest demands of the patient and the practitioner. The lifetime of this prosthesis is limited in time and the degree of development depends on the goals and duration of treatment. The provisional prosthesis is

of so much interest in joint therapy that its absence may be surprising. The biological integration of the fixed prosthesis, i.e., the congruence of the prosthetic part (non-biological in terms of the method, design, and materials from which it is made) with the supporting biological elements, is conditional on achieving bio functional stability (occlusal, periodontal, aesthetic).

CONCLUSIONS

In the current clinical-technological algorithm of rehabilitation with fixed restorations, provisional prosthetics represent an

extremely important step in order to conform the periodontal tissue on the one hand, to protect the prepared substructures on the other hand, and last but not least to prefigure the shape of the future prosthetic rehabilitation in the context of dento-somatic-facial harmony. Prosthetic restorations made by the digital technique are extremely precise, their design is laborious considering all biomechanical aesthetic criteria so that we have individualized restorations that lead to successful prosthetics.

The clinical reality gives the transitional prosthesis essential functions of control and management of occlusal, periodontal, and aesthetic-functional parameters.

CONFLICTS OF INTEREST AND FUNDING

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