

## FRONTAL ORAL REHABILITATION WITH MODERN TECHNIQUES OF RECONSTRUCTIVE PROSTHETIC

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### ABSTRACT

**The aim of the study** is to correctly assess the aesthetic and psycho – social impact the frontal faceted ceramic crowns or zirconium skeleton restorations have on patients. **Material and methods** For proper evaluation, we chose a group of patients who have opted for aesthetic reconstruction, either by full ceramic veneers , crowns or zirconium skeleton, and have been previously treated by means of classic metal-ceramic restoration or that suffered various tooth discoloration in the front. Observation of the patients 2 years after the prosthetic reconstruction yielded good results. **Results and discussions** Due to low mechanical resistance of ceramic in comparison to pressed metal-ceramic prosthetic restorations can be used only in areas where excessive occlusal forces are not expected. **Conclusions** Patients were satisfied with the results both in terms of aesthetics and function, and evolution of these types of prosthetic reconstructions in time.

**Keywords:** oral rehabilitation, ceramic crowns, zirconia skeleton

### INTRODUCTION

Currently attempts are made to gradually replace bridges or metal-ceramic crowns used in the rehabilitation of frontal area with modern, aesthetically superior solutions. Although these alternatives are more expensive, they offer multiple advantages. Scientists define dental ceramics by studying composition, equations, particles, but also psychological factors cannot be underestimated. The study of ceramics is an integral part of dental aesthetics If mimicking the natural by ceramic prosthetic restauration is not appropriate, it can be considered a failure. In recent decades, dentistry has experienced remarkable progress in terms of replicating the color of natural teeth by restorative materials. Achieving restorations whose color, vitality and translucency is

approaching the natural qualities of teeth is an essential prerogative for a beautiful and harmonious smile [1, 2].

For the experienced specialist in oral prosthetics, restoring one or two individual crowns is relatively simple clinically and technically, but when the need arises to restaure a single crown in areas with major aesthetic interest, prosthetic restoration is a challenge for any professional team [3].

Optical properties of dental ceramics are similar to conventional natural dental tissue properties. For this reason, ceramic is the material of choice for dental restorations in areas with high aesthetic importance. The aesthetic of dental materials is due to their translucency. The more “stable” the ceramic is, the more opaque it is. The choice of ceramic material is determined by the

aesthetic characteristics of the prosthetic and the prosthetic space available [4].

**The aim of this study** was to evaluate the objectivity of patients in relation to the results of prosthetic frontal rehabilitation with veneers, ceramic crowns or ceramic bridges on zirconia skeleton.

## MATERIAL AND METHODS

During the two years, I have observed patients who chose treatment using these modern rehabilitation techniques, especially the young, who had high aesthetic requirements. We exposed the advantages and disadvantages of these alternatives. In more complex cases we used the technique of smile design. In recent years, computer design software has evolved significantly and has become a powerful tool used to show patients smile improvement possibilities. By this method, we, as clinicians, could develop a predictable plan of smile design and so we were able to predict treatment outcome and communicated to the patient.

I made a batch consisting of 20 patients, 13 women and 7 men, aged between 21 and 43 years, who were complementarily tested during the treatment, at the end of treatment,



**Figure 2a, b. Structure of zirconium, ceramic and finished the frame work of zirconium**

## RESULTS AND DISCUSSIONS

Given that patients were instructed how to brush in order to improve oral hygiene and were shown auxiliary cleaning methods, they had excellent hygiene. Average IT-S index (simplified plaque index) was 1.2 for women

and then after 6 or 9 months depending on availability. At the end of treatment period, a questionnaire consisting of several questions was given to them and they responded with ratings from 1-5 (1 being the least and 5 the most). The topics discussed were chosen as to evaluate their satisfaction in relation with the aesthetics, the value for money of the services offered, the fact that the chosen approaches was requiring several sessions in dental office, more than it would have done if they were to choose a classic metal-ceramic work.

After about six months, when they came to periodic monitoring, we evaluated patient hygiene status, gingival retraction level, work status, and whether there were mesio-distal movements.



**Figure 1. Assessment of future prosthetic reconstruction with smile design**



and 1.9 for men. ISP (periodontal screening index) also had a low value of 0.8 for women and 1.1 for men, indicating a healthy periodontium.

We have evaluated the vestibular gingiva corresponding abutment teeth and noticed

insignificant gingival retraction. I can say that none of the patients had the tooth bridge limit exposed.



**Figure 3. Aesthetics of a skeleton of zirconium prosthetic reconstruction**

None of the treatments showed damage, with the exception of one case in which a ceramic facet fractured 2 days after the placement, and it was necessary to rebuild.

Contact points were correctly made and that is why individually prepared teeth did not undergo migrations. The question of the aesthetics of the restoration, all patients responded to grade 5, without exception. When the value for money of our services, we received an average score of 4.5. Although specified (approximately) from the beginning of treatment the number of necessary sessions

and mean duration of the sessions at hand, some patients had complaints, especially as they sometimes create gaps and they had to wait. In connection to this topic, we have achieved an average score of only 3.6.

Considering the cost of the works, the majority responded that it was quite difficult to make the decision to opt for these therapeutic approaches. The average score was 2.2 (grade 5 means the easiest).

But finally asked if it was worth the effort in every respect, we had a unanimous answer yes. And to this question I have met the highest score, 5.

## CONCLUSIONS

The feedback from patients has been very good. Although these therapeutic solutions show some disadvantages such as high cost, fragile nature of the material and low strength in comparison to mixed metal-ceramic crown (and here we refer to the zirconia skeleton restorations), the need for accurate preparation, extremely critical their benefits weigh more in the eyes of patients.

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