THE USE OF ZX27 BIO-GLASS ABUTMENTS IN BITERMINAL EDENTATIONS TO SOLVE PROBLEMS OF MASTICATION AND PHYSIOGNOMY

Mitrea Mihaela¹*, Sintea Cristina³, Calin Dorelia Lucia², Francu LL.¹

“Grigore T. Popa” U.M.Ph. - Iasi, Romania, ¹Discipline of Anatomy, ²Discipline of Cariology and Restorative Odontotherapy, ³Dental private office Dr. Bobocea Ana Maria, DDS, Constanța

*Corresponding author: Mitrea Mihaela, DMD
Dental private office Dr. Bobocea Ana Maria, DDS, Constanța

ABSTRACT
International experience shows that ZX-27 bio-glass pillar or abutment can handle more difficult cases, usually biterminal edentation when, for various reasons, skeletal and/or telescope prostheses or implants cannot be made and works very well. The authors present their experience in using this innovative material that adapts perfectly to each patient, while providing optimal functional and aesthetic results through a technique with reduced costs and execution time.

Key words: biterminal edentation, shortened dental arch, ZX-27 bio-glass abutment

INTRODUCTION
The support of extension dentures has long concerned dentists who have tried many materials, but these did not meet the requirements. The use of metals and plastics requiring processing by casting, maneuvers leading to problems of accuracy, so that the abutment could not rely precisely on the entire surface of the edentulous ridge and or did not meet the thermal expansion. Either ordinary glass or ceramic materials do not meet expectations (1, 2).

Glass pillar or abutment ZX2-7 is a progressive technique, an invention by Hungarian dental technician Laszlo Nemeth, being named after a new planetary system discovered recently that contradicts current astronomical laws as ought to disintegrate, but still there is. While the material used meets several conditions such as melting, processability, hardness, chemical resistance, but also high resistance to compression and shear forces during mastication (3, 4, 5).

The essence of ZX-27 Glass Abutment System is that those who still have own teeth, but do not want prosthetics or implants can obtain fix dentures with this method. Its use can solve difficult cases usually biterminal edentation when would be recommended skeletal and / or telescope prostheses or implants that the patient refuses them for various reasons (6, 3, 7, 8). The average life of the work is average of 7 years, after which it is necessary to remove it because the bone and alveolar crest withdraw and allow tilting of dental work, and mobilization of abutment teeth.

ZX-27 bio-glass abutment variant allows for optimal aesthetic and functional results with a low-cost technique. Execution time in the dental laboratory is much shorter than that required for implants or for achieving a
skeletal prosthesis (1).

ZX-27 glass abutments are made of special material (borosilicate glass) and adhere to the mucosa of the alveolar bone in the edentulous segments of the dental arches. The prosthetic abutment is thus replaced, meaning the own missing anchorage points. Dental technicians adapt perfectly on the patient's alveolar arch mucosa its own point of attachment made of glass ZX-27 (3, 9).

International experience over the years of several certified laboratories, a number of more than 15,000 satisfied patients and numerous clinical studies prove that ZX-27 glass abutment works very well (9, 10, 11).

**MATERIAL AND METHODS**

We present in detail the patient H.V. 50 years who presented to the dental office to solve the problems of chewing and physiognomy.

Clinical examination and evaluation of lesions were made after removing debris, dental plaque from the surface of lesions using a dental mirror and a probe. Marked abrasion of anterior and upper lateral teeth, Stillman’s fissure in the central incisors, misfit filling on 23 and inappropriate endocanalar treatment were observed (fig. 1).

After analyzing the digital panoramic radiograph (fig. 2) it was concluded that this patient represents an ideal case for implant or even skeletal prosthesis.

![Figure 1. Patient H.V. Teeth appearance of patient at dental office presentation: marked abrasion of anterior and upper lateral teeth, Stillman’s fissure can be observed in the central incisors, misfit filling on 23, inappropriate endocanalar treatment](image1)

![Figure 2. Digital orthopantomography of patient H.V. which highlights the overall situation of dentition.](image2)
Another similar case was the patient t.v. of 42 years who presented to the cabinet for the recovery of masticatory and esthetic functions. The patient presents an unilateral terminal edentation. Since the patient did not accept acrylic or elastic partial removable denture or skeletal prosthesis, we agreed to accomplish a fixed partial metal ceramic denture which will be totally esthetic.

RESULTS AND DISCUSSIONS

Considering that the patient is relatively young and refuse classic-acrylic or elastic partial removable denture or skeletal prosthesis, we decided, by mutual agreement, to achieve a fixed partial denture which in distal extremities presents two extensions with a ZX-27 system carried out by technician in the laboratory. This system was chosen because the offer of edentulous ridge is generous being a ridge of average height and width and adapts closely to the muco-osseous support of edentulous ridge, better than semi contact saddle or tangential distal extension.

It began with endocanalar treatments of central and lateral teeth, (sanding) preparation of prosthetic abutments and monoblock impression made of two different materials, the one putty type and the second light body (Fig. 3).
Figure 7. Patient H.V. Fixed partial denture on the model. It can be noticed the makeup with fake gum at level of 23 and 25.

Figure 8. Patient H.V. Fixed partial denture, front view norm. The aim is to adapt to the cervical line and mucosal level.

Figure 9. The final aspect of fixed partial denture in the patient H.V.

Figure 10. The final aspect of the prosthetic work, palatal view, on which can be observed 16 extension that dress the crest on palatal slope.

Fig. 11. T.V. patient 42 years. The final aspect of fixed partial denture, facial view. It can be seen at the aspect of 16 extension that dress the crest on vestibular slope.

The patient T.V. 42 years presents an unilateral terminal edentation on which we developed a fixed metal ceramic partial denture which will be totally physiognomic. Two totally esthetic crowns were made on 23 and 24, abutment teeth being 13 and 14,
CONCLUSIONS

1. The proper use of the prosthesis by abutment or pillar ZX-27 has allowed the realization of a prosthetic works that provides not only the fulfilling of masticatory function, but also satisfies the aesthetic requirements of the patient.

2. Fixed partial dentures of this kind are light constructions that are accepted in a shorter period of time by the patient and successfully replace a skeletal prosthesis with or without special systems, an acrylic or elastic removable partial denture, which are heavy prosthesis with long periods of adaptation.

3. The technique applies only in conditions of a pronounced and firm alveolar crest at the place of anchorage points of ZX-27 glass in order to restore occlusal relations and functions of the prosthesis.

4. The point of fixation of glass pillar ZX-27 is the most distal part of the bridge with shortened dental arch after the preparation of two teeth and mounting of two extensions.

5. Patient is advised to maintain oral and dental hygiene, but also to ensure protection of prosthesis.

6. The prosthetic work control is required every 6 months after prosthesis cementation and completion of a panoramic radiograph at one year.

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