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**A STUDY ON THE MORPHOFUNCTIONAL STATE OF ORAL ORGAN TISSUES DURING THE
USE OF NON-REMOVABLE ORTHODONTIC STRUCTURES*****Erkinova Sevinch****Samarkand State Medical University, Uzbekistan****Burxonova Zараfruz Qobilovna****Samarkand State Medical University, Uzbekistan*

ABOUT ARTICLE**Key words:** Cermet, nonremovable prosthesis, periodontal tissue, prosthesis, implant.**Received:** 20.03.2024**Accepted:** 25.03.2024**Published:** 30.03.2024**Abstract:** This article discusses the effects of non-removable orthodontic structures on the condition of oral tissues. Problems with modern implant-based prosthetic methods are highlighted. The most common errors and complications in non-removable prosthetics are analyzed. The evaluation of the physical and technical properties of metal-ceramic structures has not yet been fully studied. To prevent ceramic chipping, contact between antagonistic prosthetic materials is forbidden. Thus, the question of the effect of non-removable prosthetics on the clinical and morphological status in the absence of periodontal tissue remains unresolved.

INTRODUCTION

The study of the effects on the morphofunctional status of oral organs and oral tissues associated with the placement of non-extractable prosthetics remains an insufficiently studied and practical problem in orthodontics. As is well known, partial tooth loss is one of the most common forms of dentition loss, so restoration of dentition integrity is performed using various designs. Recently, metal-ceramic prostheses have become the preferred choice. The advantages of metal-ceramic prosthetics are strength, durability, esthetics, patient convenience, hygiene, and resistance to plaque formation on the ceramic surface. K. Y. Obidny and O. A. Korshunova [26] investigated the effect of prosthetic materials on the biological condition of the oral cavity. The researchers found that, compared to other types of dentures, metal-ceramic structures do not violate the biological state of the

oral cavity and do not contribute to the development of inflammatory complications caused by the mass outbreak of pathogenic microflora. However, cermets have both drawbacks and advantages. Therefore, metals can cause allergic reactions in the oral organs, and such conditions need to be mitigated and prevented. V. V. Namkhanov and B. Z. A. Budaev [24], in their work "Peculiarities of the Effect of Orthodontic Materials on the Oral Organs", metal allergies and suggest ways to alleviate and prevent such conditions. Metabolic and structural disorders cause glutathione deficiency in the patient's body, necessitating the administration of drugs that stimulate the biosynthesis of this tripeptide. Acetylcysteine (600 mg once daily for 3 weeks) contributes not only to the disappearance of intolerance to metal solder, but also to the restoration of the effectiveness of the antioxidant system. The following are some of the most important effects of acetylcysteine: glutathione, diene conjugates, activity of glutathione reductase and glucose-6-phosphate dehydrogenase in red blood cells, and normalization of lactic and uric acid in the plasma. Because of its high efficacy, mild side effects, ease of use, and availability, acetylcysteine is recommended not only for the amelioration of symptoms that have already developed, but also for their prevention. According to the literature, the process caused by excessive immersion of prosthetic crown margins into the gingival sulcus has been extensively studied [10], and A.B. Serov's clinical and histological examination after restorations showed that regardless of the design and dental materials used, gingivitis occurs where the subgingival position of the prosthetic margin is determined. T.S. Alybekov focused on the status of periodontal margins in non-removable prostheses [1]. Low-support crowns in bridge prostheses alter the distribution of bending moments and increase the VAT of the prosthetic cross section by more than 10% [2]. Small values of the stiffness criterion can result in high stresses on the prosthetic midsection and abutment teeth, which may compromise the anchorage of the abutment teeth at different heights [2, 6, 17]. The use of non-removable bridges is positively perceived by patients. After fabrication of a non-removable prosthesis, patients notice an increased level of subjective comfort, and conversational and esthetic adaptations are mostly completed in a short period of time. The patient adapts to masticatory function in a short period of time, and the masticatory load on the supporting teeth is evenly distributed, thus avoiding the formation of habitual masticatory lateral conditioned reflexes. Pain in the periodontal region of the post-prosthetic abutment teeth is not pronounced, which is due to the presence of physiological load transfer during function [6, 27, 30]. Analyzing the characteristics of clinical crown less prosthetic design, including in young patients, the authors note that solid crowns, which save preparation time, are preferred [6, 13]. Dental technicians' errors are observed when fabricating tooth models for crowns. The most common mistake is the formation of high canines on the masticatory surfaces of premolars and molars. Insufficient grinding of the hard tissue from the occlusal surfaces of the teeth results in a

poor occlusal fit of the artificial crown, overloading the periodontal ligament, and causing traumatic periodontitis. A comparison of the two techniques for fabricating non-removable prosthetics shows that structures fabricated by traditional methods have significantly more complications than modern solid cast or metal-ceramic structures. Stamped prosthetics are now widely used in dental practices because they are more affordable. In many cases, stamped prosthetics adversely affect patients in the form of dental caries, its complications, and marginal periodontitis. In addition, stamped crowns cannot restore occlusion or reproduce esthetic parameters such as the color and shape of natural teeth. From these data, it is clear that metal ceramic or solid cast prosthetics are more preferable. The above complications in patients with non-removable prostheses are a good reason to monitor the condition of the prosthesis at least once a year. According to an analysis of the long-term results of prosthetics, fixation violations of non-removable prosthetics have been observed in 38% of cases. Errors and complications of nonremovable prosthetics have been analyzed. Based on the results of clinical, radiographic, and laboratory diagnoses, as well as quality control data from the treatment phase, the most common errors and complications in non-removable prosthetics were identified. Errors in the preparation phase of the prosthesis - Violation of the principles and quality of endodontic treatment of the abutment tooth - Inconsistency between the chosen treatment method and the established diagnosis - Damage to neurovascular bundles during mechanical treatment of the abutment tooth (superheated tooth, preparation without water cooling); - Perforation of the root canal during root canal preparation for the inlay - Damage to the marginal gingiva Abutment tooth without ledges Preparation - Excessive taper of abutment tooth - Insufficient temporary teeth - Errors in registration of bite. Errors during impression removal - Use of alginate impression material for the primary impression - Impression inaccuracy - Gaps between the basal and orthodontic layers - Skewed impression during impression placement - Failure to use pre-wound thread when removing impression - Tearing impression from spoon. Errors at the stage of checking the prosthesis in the mouth: - overworking of the frame during the examination - rapid working of the cermet - violation of the shape, color and size of the crown Errors at the stage of fixing the prosthesis: - improper selection of the fixing material - violation of instructions when using the fixing material - uneven compression of the prosthesis during fixing. Errors found in the prosthetic stage can cause many complications: - Destruction of the prosthesis - Chipped ceramics - Gingivitis near the crown - Traumatic periodontitis - Traumatic pulpitis/periodontitis - Gum recession - Discoloration of the gums near the crown - Secondary caries - Destruction of the subgingival crown - Dysfunction of the TMJ - Prosthetic Orthopedic pain near the center - Allergic stomatitis - Galvanism. Therefore, the authors have studied the direct relationship between the occurrence of various complications and the violation of clinical and

experimental protocols for prosthetic fabrication [7, 8, 12, 18, 21, 29]. The issue of the functional status of the masticatory muscles and many factors of local immunity of the oral cavity when using non-removable prostheses has been studied in depth [15]. Strength parameters of polymeric intermediate prostheses based on dental implants have been studied [3]. White studied the advantages and disadvantages of metal-ceramic structured dentures anchored to intraosseous implants. To improve the quality of orthodontic treatment, he suggested computer milling of the prosthesis. Computer milling eliminates the wax modeling and casting stages and ensures an accurate edge fit between the crown and the tooth or implant abutment CAD/CAM - frames made of ceramic materials for metal-free prosthetic manufacturing is most developed in dentistry and is therefore increasingly used in lateral bridges. However, the strength of metal-free bridges and zirconium oxide abutments is problematic when implant support is required [5]. An analysis of the available literature indicates that the main interest of researchers is focused on the problems identified during the prosthetic phase, such as mechanical damage to periapical tissues, violations of protocols regarding prosthetic fabrication and placement, and toxicity of the materials used. It should be noted that the evaluation of the physical and technical properties of metal-ceramic structures, for example, the effect of prosthetic hardness on periodontal tissues and oral organs, has not yet been adequately studied. In order to eliminate negative material phenomena resulting from imperfections in the physical properties used in orthodontics, a number of stipulations must be considered. In most cases, dentists should avoid close contact of antagonistic metal and ceramic prosthetics to avoid ceramic chipping. In the long term, this may lead to deformation of the occlusal plane due to alveolar bone elongation. In the available literature, there is no material devoted to studies on the effects of physical factors of metal-ceramic structures on oral organs and their morphological changes. These studies are particularly important in restoring the integrity of the dentition with implants in the absence of buffering capacity due to the absence of periodontal tissue. The presentation of updated information on the characteristics of clinical and morphological changes in the absence of periodontal tissue is a new and high-priority practical issue for Uzbekistan.

CONCLUSION

Thus, the inadequate knowledge of the clinical and morphological characteristics of oral tissues in metal-ceramic prostheses and their practical significance in orthognathic dentistry prove the relevance of this issue and the need for further research to modify implant-based orthognathic treatment protocols The following are some of the most important issues that need to be addressed.

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