Intent Research Scientific Journal-(IRSJ)
ISSN (E): 2980-4612
Volume 2, Issue 9, September-2023
Website: intentresearch.org/index.php/irsj/index

EVALUATION OF ORTHODONTIC TREATMENT WITH REMOVABLE DENTAL PROSTHETICS

Chaqqonov Faxriddin Xusanovich
Qodirov B.
Sharipov E.
Togayniyazov A.
Raxmatov M.
Samarkhand State Medical University

Abstract
For a long time, orthodontic treatment of chronic generalized periodontitis with defects in the dentition of diabetic patients has been a complex multifactorial challenge [1, 2].

Keywords: dentistry, removable orthodontic structures, atrophy, diabetes.

Diabetic complications are known to affect many organs and systems of the body, and the oral cavity is a prime indicator, characterized by vascular, neuropathic, metabolic, and structural disorders of the hard tissues of the teeth, periodontal tissues, and oral mucosa [5]. It is generally an alteration of inflammatory and biological nature, accompanied by halitosis, mucosal dysesthesia, and dysgeusia. In addition, there is generalized stomatitis (catarrhal, aphthous, ulcerative), candida changes and lichen planus of the oral mucosa (OM), periodontitis with varying degrees of mobility, alveolar bone loss and periodontal pocket depth. The etiology of the above-mentioned oral pathological changes is related to hormonal imbalances and severe disturbances of metabolism. Scientists believe that genetic predisposition and traumatic causes play a major role in the etiology of the oral inflammatory response at the tissue and organ level. Type I and type II diabetes mellitus cause deficiencies in blood flow, hypoxia and energy supply in periodontal tissues, leading to a violation of plastic and regenerative processes, the stability and resistance of the periodontal complex to mechanical and infectious influences, and other adverse factors. The latter include improper dental treatment, orthodontic treatment, extraction of numerous teeth, bruxism, dental abnormalities, and leg C, B, A, E, etc., which

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are very important. At the same time, the adaptive capacity of periodontal tissues is exceeded and hemodynamic violations occur with the appearance of resorption processes in periodontal tissues and prosthetic beds [3, 5]. The protective properties of the oral mucosa are also weakened due to atherosclerosis as a result of impaired blood supply and lipid imbalance. Histological examination of the oral mucosa reveals papillomatosis with papules, parakeratosis, localized and generalized atrophic processes of the epithelial layer, increased glycogen content of the gingival epithelium, mast cells and plasma cells in the inflammatory infiltrate. Data from the literature and clinical observations attest to the nonspecific nature and varied and numerous changes in the oral cavity of type 2 diabetes [4, 5]. Increased osteoclast activity leads to resorption and demineralization of the bone matrix, exacerbating inflammatory and destructive changes against the background of a complex negative immune response. An important achievement of domestic dentistry in the field of periodontics is the rigorous and complex use of medical, physiotherapeutic, surgical, and orthopedic methods depending on the indication. The situation becomes more complex in the treatment of generalized periodontitis with dental defects against a background of endocrine pathology that directly affects the condition of the teeth. After determining the main links between etiologic factors and pathological mechanisms, the specialist is faced with the task of selecting etiologically and pathologically justified therapeutic measures and developing an individualized management plan for the patient, taking into account the progressive inflammatory-dystrophic process in diabetes, for example [6, 9]. Authors of studies on the etiology of periodontal tissue pathology have given an important role to diabetes. Clinical observations and experimental studies indicate that dentists often focus on the diagnosis of "diabetes" in patients with periodontal tissue disease, many of these patients being diagnosed in its early stages. In patients with chronic generalized periodontitis, orthodontic treatment methods can be used to restore tissue-function relationships and increase adaptation and compensation when there is a deficiency in the dentition. During surgery, "prosthetic plaque" is formed on the surface of the orthodontic structure of the denture, and a vast number of microorganisms are known to affect the microbiological composition of the oral cavity itself, and the concomitant local or systemic pathology only exacerbates these processes, i.e. inflammation,

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destruction, etc.) . The resulting long-term imbalance adversely affects immunological reactivity, the body's sensitivity, and triggers an inflammatory response in the oral cavity (toxic chemicals/prosthetic stomatitis). Since the physicochemical properties of the polymers that make up dentures are known to influence microbial adhesion and colonization of removable structural surfaces, modern dental materials science is increasingly demanding that the structural materials themselves have specific properties [7, 8]. National and international scientists have pointed out that the many excellent properties of dental thermoplastics have expanded the indications for orthodontists to manufacture many orthodontic structures and devices for the prosthesis of dental defects complicated by alveolar bone deformities and periodontal tissue diseases. In the treatment of patients with systemic periodontal disease with a diabetic background, the use of bone stimulants can achieve effective results, not only stopping the progressive loss of bone tissue in the alveolar process of the maxilla and the alveolar portion of the mandible, but also stimulating the process of restorative regeneration. Kalivradzhiyan E.S. et al. study determined the use of medicated biofilms with adhesive action, which had a positive effect on the duration of adaptation of patients to removable dentures and on the prevention and treatment of possible complications from the oral mucosa [3]. Therefore, in order to improve the efficiency of prosthetic treatment of patients with dental defects in the pathology of periodontal tissues with diabetic background, it is appropriate and expedient to implement a series of therapeutic measures aimed at adjusting and restoring masticatory function with the removal of inflammatory dystrophic reactions [4, 5]. This principle is extremely important. This is because patients with worsening dental and endocrine history often complain of pain, chewing difficulties, constant discomfort, and inability to get used to the fabricated structures for a very long time after the prosthesis. Therefore, the above proves the validity of the research goal of optimizing orthodontic treatment of periodontally ill patients with diabetes using removable dentures.

Materials and research methods: The X-ray methods have always played an important role in dentistry. Today, more modern and informative radiographic methods, such as computed tomography, are preferred in dental practice and scientific research. This method allows the evaluation of the pathology of the

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bone at a specific site, the clinical picture, the changes that occur in the process, the accuracy of the diagnosis, treatment planning, and diagnostic measures with a high degree of reliability. To achieve this objective, a three-dimensional computerized dental tomography system (Veraviewepocs 3D, made in Korea) was used at the dental clinic of the Voronezh State Medical University, named after N.N. Burdenko. This multi-projection Rh+ research method allows obtaining a consistent planar and volumetric reconstruction of the studied object while assessing the anatomical formation and density of the bone structures of the alveolar bone system. The analysis of the received digital data was carried out within the framework of scientific research by the staff of the Department of Prosthodontics, Voronezh State Medical University, under the guidance of N.N. Burdenko, supervisor and specialist in the field of radiographic diagnosis, using a personal computer in the clinic, the cortical plate of the floor of the maxillary sinus was visualized and three planes The 3D image can be rotated and viewed from any angle. The clinic does not need a special computer program for 3D reconstruction of the tomographic images, as long as the data obtained is recorded [5]. Obtaining three-dimensional images of individual areas of the teeth and jawbone is the main feature of dental CT. First, the entire alveolar arch is scanned, the volume of the obtained image is 12 x 7 cm, and the 3D computer image is displayed on the monitor screen according to the "orthopedomography - panoramic zonografia" type of AP. Patients who participated in the orthopedic treatment study were divided into four groups of 20 patients each according to the method chosen. The first group of patients used the acrylic plastic "Ftorax" as the base polymer for the removable lamellar dentures that were fabricated. The second group of patients was prosthetized with a clasp structure (clasp fixed, splinted arc denture). Structural materials - cobalt-chromium alloy (CCS) and acrylic polymer "Ftorax". In the third group of patients, removable dentures were fabricated with thermoplastic polymer. The fourth group of patients had prosthetics with removable orthodontic structures made of thermoplastics, followed by composite treatment with Ca-containing mineral-vitamin complex and adhesive anti-inflammatory bioabsorbable film on the prosthetic base.BAP is a "bilayer hydrophilic and hydrophobic self-absorbable film based on natural polysaccharides" with antibacterial and anti-inflammatory, regenerative, and wound-healing properties. In relation to the financial component of the study

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methodology, five patients from each group were selected for 3D imaging. In the course of the study, the intensity of atrophy of /h and n/h alveolar bone tissue that occurred in patients over a one-year period when various orthopedic structures were used was evaluated. Results and Discussion The intensity of bone tissue atrophy based on the reduction of the height of the alveolar process and the alveolar portion of the upper and lower jaw under the influence of various types of removable denture foundations was investigated to assess the effect of an integrated approach in orthodontic treatment on its success and minimizing complications from the prosthetic floor tissue. Measurements were taken before the application of the orthodontic structure of the chosen denture and after one year of use of the removable denture. These studies showed that in patients with systemic periodontal disease complicated by secondary periodontal disease on a background of non-insulin-dependent diabetes mellitus, the number of visits for orthodontic procedures on dentures was reduced, the duration of adaptation was shortened, and dental health and quality of life were improved during the entire period of orthodontic structure use. This study proves that proper selection of structural substrates and optimal composite treatment can improve the quality of dental health by reducing complications such as bone tissue atrophy, which affects not only the dentition but also the entire maxillofacial region. The results of the study once again demonstrated, first of all, the excellent properties of dental thermoplastics, such as high esthetics, lightness, elasticity, flexibility, stability, sufficient strength, lack of monomer residues, and bioinertness. Second, during the adaptation period after placement of the thermoplastic removable structures, the adhesive anti-inflammatory biodegradable film and Ca-containing mineral-vitamin complex (MVC) had a positive effect on the resistance of the oral mucosa, the dynamics of inflammatory processes in the prosthetic floor tissue, and the volume of bone tissue. Conclusions The treatment of patients with partial dental defects with removable prostheses undoubtedly has certain advantages over fixed prostheses, with therapeutic and preventive effects: the possibility of not having to prepare the hard tissue of the supporting teeth, the possibility of using dental defects of different sizes and topographies, the principle of this design facilitates hygienic care measures. The main drawback, however, is the particular pressure transmission to the underlying OM due to its low adaptability to masticatory

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pressure and bone tissue perception. Removable prosthetic foundations are always difficult to perceive and cause side effects and discomfort due to extensive foreign body penetration into the oral cavity. Therefore, the challenge for prosthodontics is, first of all, to plan the design features of removable dentures, the minimum possible floor area, and the correct choice of structural materials.

Conclusion: As shown in this study, it is certainly more reasonable to use thermoplastic polymers as the base material for dental prosthetics in type II diabetic patients; adhesive anti-inflammatory biofilms for the application and ingestion of Ca-containing MVA are a good alternative to the complexities of orthopedic treatment in this category of patients. Its incorporation into the algorithm has shown its expediency and effectiveness in reducing the dynamics of the area of inflammatory process zones in the tissue under the prosthetic foundation, the intensity of the atrophic process, and the loss of bone tissue in the tissue of the prosthetic floor. It should be noted that the duration of adaptation of the patients after the installation of the orthopedic structures was shortened in the fourth group of prostheses, and the number of visits for correction was also minimized.

REFERENCES:

1. Astanovich A. D. A. et al. The State of Periodontal Tissues in Athletes Engaged in Cyclic Sports //Annals of the Romanian Society for Cell Biology. – 2021. – С. 235-241.
2. Astanovich A. A. Comparative Analysis of the Stress-Strain State of the Lower Jaw with Different Splinting Systems in Localized Periodontitis of Middle Gravity by Finite Element Modeling //Scholastic: Journal of Natural and Medical Education. – 2023. – Т. 2. – №. 5. – С. 181-187.
3. Ortikova N., Rizaev J. THE PREVALENCE AND REASONS OF STOMATOPHOBIA IN CHILDREN //E-Conference Globe. – 2021. – С. 339-341.
4. Ахмедов А. А. Иммунологические аспекты патогенеза гингивита и пародонтита //IQRO. – 2023. – Т. 3. – №. 2. – С. 121-123.
5. Ортикова Н. POLITICAL ELITE AS A SCIENTIFIC PROBLEM //МЕЖДУНАРОДНЫЙ ЖУРНАЛ КОНСЕНСУС. – 2021. – Т. 2. – №. 1.

ISSN (E): 2980-4612
Volume 2, Issue 9, September-2023
Website: intentresearch.org/index.php/irsj/index

6. Alimdjanovich R. J., Khairullaevna O. N., Normuratovich N. A. CORRECTION OF PSYCHOLOGICAL STRESS IN CHILDREN WITH NON-PHARMACOLOGICAL METHODS OF DENTAL ADMISSION //Archive of Conferences. – 2021. – С. 108-114.
7. Xairullaevna O. N., Alimjanovich R. J. Improving the effectiveness of therapeutic and preventive measures by correcting psychoemotional stress in children at a dental appointment. – 2022.
8. Maxzuna U., Zarafruz B. IMPROVING THE PROVISION OF THERAPEUTIC DENTAL CARE TO PREGNANT WOMEN //Web of Scientist: International Scientific Research Journal. – 2022. – Т. 3. – №. 11. – С. 618-623.
9. Zarafruz B., Hekmat K. H. A. S. MANIFESTATION OF HERPETIC INFECTION IN THE ORAL CAVITY AND THEIR TIMELY ELIMINATION //Spectrum Journal of Innovation, Reforms and Development. – 2022. – Т. 10. – С. 47-52.
10. Qobilovna B. Z., Nodirovich E. A. EVALUATION OF ORTHOPEDIC TREATMENT WITH REMOVABLE DENTAL PROSTHESES FOR PATIENTS WITH PAIR PATHOLOGY //Spectrum Journal of Innovation, Reforms and Development. – 2023. – Т. 11. – С. 95-101.
11. Ruziyeva K. A., Burhonova Z. K. K. Complex Application Of Magnetic Laser Therapy And Propolis Tincture For The Prevention And Treatment Of Chronic Recurrent Aphthous Stomatitis //The American Journal of Medical Sciences and Pharmaceutical Research. – 2021. – Т. 3. – №. 06. – С. 127-130.
12. Абдуллаева Н. ИСКРИВЛЕНИЕ ШПЕЕ ПРИ ЗУБОАЛЬВЕОЛЯРНОМ УДЛИНЕНИЕ У ДЕТЕЙ С ВТОРИЧНЫМИ ДЕФОРМАЦИЯМИ ЗУБНОГО РЯДА //Collection of scientific papers «ΛΌГОΣ». – 2023. – №. May 26, 2023; Boston, USA. – С. 344-348.
13. Jamshed S. PREVALENCE OF PHYSIOLOGICAL BITE FORMS IN PEOPLE WITH DIFFERENT FACE TYPES //Web of Scientist: International Scientific Research Journal. – 2022. – Т. 3. – №. 11. – С. 451-454.

ISSN (E): 2980-4612
Volume 2, Issue 9, September-2023
Website: intentresearch.org/index.php/irsj/index

14. Makhmudova U. B. The Effectiveness Of The Use Of Parapulpar Pins (Ppp) When Restoring Defects In The Crown Part Of The Frontal Teeth //Asian journal of pharmaceutical and biological research. – 2022. – Т. 11. – №. 2.
15. Bakhtiyorovna M. U. Causes Of Removable Denture Breaks And Allergic Reactions //Spectrum Journal of Innovation, Reforms and Development. – 2022. – Т. 10. – С. 374-377.
16. Bustanovna I. N. Assessment Of Clinical And Morphological Changes In The Oral Organs And Tissues In Post-Menopause Women //Thematics Journal of Education. – 2022. – Т. 7. – №. 3..
17. Nizomitdin A. I. Therapeutic Effect Of Improved Enamel Surface Preparation Technique In The Treatment Of Acute Initial Caries Of Temporary Teeth In Children //Web of Scientist: International Scientific Research Journal. – 2022. – Т. 3. – №. 11. – С. 440-445.
18. Jamshed S. Prevalence Of Physiological Bite Forms In People With Different Face Types //Web of Scientist: International Scientific Research Journal. – 2022. – Т. 3. – №. 11. – С. 451-454.
19. Nazhmiddinovich S. N., Obloberdievich S. J. Optimization of Orthopedic Treatment of Dentition Defects in Patients with Chronic Diseases of the Gastrointestinal Tract //Eurasian Research Bulletin. – 2023. – Т. 17. – С. 157-159.
20. Ахмадов И. Н. КЛИНИЧЕСКИЕ ОСОБЕННОСТИ И ПРИНЦИПЫ ЛЕЧЕНИЯ АЛЛЕРГИЧЕСКОГО СТОМАТИТА ПРИ ИСПОЛЬЗОВАНИИ ЧАСТИЧНЫХ И ПОЛНЫХ СЪЕМНЫХ ПЛАСТИНОЧНЫХ ПРОТЕЗОВ //ББК 72 И66. – 2021. – С. 262.
21. Ахмадов И. Н. Нарушения в системе перекисного окисления липидов при парадантозе //IQRO. – 2023. – Т. 3. – №. 2. – С. 124-127.
22. Ахмадов И. ОБЗОР СРЕДСТВ ДЛЯ ФИКСАЦИИ ЗУБНЫХ ПРОТЕЗОВ //ЗБІРНИК НАУКОВИХ ПРАЦЬ НАУКОВО-ПРАКТИЧНА КОНФЕРЕНЦІЯ З МІЖНАРОДНОЮ УЧАСТЮ ТА НАВЧАЛЬНИМ ТРЕНІНГОМ З ОВОЛОДІННЯМ ПРАКТИЧНИМИ НАВИКАМИ «СУЧАСНІ МЕТОДИ ДІАГНОСТИКИ, ПРОФІЛАКТИКИ ТА ЛІКУВАННЯ ОСНОВНИХ СТОМАТОЛОГІЧНИХ ЗАХВОРЮВАНЬ». – 2021. – С. 43

ISSN (E): 2980-4612
Volume 2, Issue 9, September-2023
Website: intentresearch.org/index.php/irsj/index

23. Ikramova F. F. Ikramova Application of lymphotropic therapy for complicated forms of varicosis of the lower limbs: Application of lymphotropic therapy for complicated forms of varicosis of the lower limbs //Архив исследований. – 2021.
24. Shoxrux S., Shoxrux I., Faxriddin C. PREVENTION AND TREATMENT OF ORAL INFECTIONS IN DENTURE WEARERS //International Journal of Early Childhood Special Education. – 2022. – Т. 14. – №. 4.
25. Fakhriddin C., Shokhruh S., Nilufar I. ENDOKANAL PIN-KONSTRUKSIYALARNI ISHLATISHDA ASORATLAR VA XATOLAR TAHLILI //JOURNAL OF BIOMEDICINE AND PRACTICE. – 2022. – Т. 7. – №. 1.
26. Fakhriddin C., Shokhruh S., Nilufar I. ENDOKANAL PIN-KONSTRUKSIYALARNI ISHLATISHDA ASORATLAR VA XATOLAR TAHLILI //JOURNAL OF BIOMEDICINE AND PRACTICE. – 2022. – Т. 7. – №. 1.