ISSN 2181-337X

EURASIAN JOURNAL OF OTORHINOLARYNGOLOGY - HEAD AND NECK SURGERY

Volume 4 • Issue 4
2025

ejohns.scinnovations.uz

SCIENTIFIC INNOVATIONS

https://doi.org/10.57231/j.ejohns.2025.4.4.004

THE USE OF ORTHOPEDIC PROSTHESES FOR THE STABILIZATION AND RESTORATION OF PERIODONTITIS IN COMPLEX TREATMENT

Khusanbaeva F.A.[1]

[1] Tashkent State Medical University

Abstract. The aim of the work is to increase the effectiveness of orthopedic treatment of patients suffering from periodontal diseases. Orthopedic treatment of periodontal diseases includes the following stages: selective grinding of teeth; temporary splinting; orthodontic treatment (according to indications); use of permanent splinting devices and dentures. The goals of splinting include correcting dental defects, stabilizing movable teeth, and eliminating traumatic occlusion and articulation. Occlusive mouthguards must be used in the dental treatment of periodontal diseases, including therapeutic, surgical rehabilitation, orthodontist training and the creation of permanent orthopedic structures.

Key words: periodontal diseases, orthopedic treatment, occlusive mouthguards.

For citation:
Khusanbaeva F.A. The use of orthopedic prostheses for the stabilization and restoration of periodontitis in complex treatment. ***Eurasian Journal of Otorhinolaryngology - Head and Neck Surgery.*** 2025;4(4): 34–38.
https://doi.org/10.57231/j.ejohns.2025.4.4.004

ПРИМЕНЕНИЕ ОРТОПЕДИЧЕСКИХ ПРОТЕЗОВ ДЛЯ СТАБИЛИЗАЦИИ И ВОССТАНОВЛЕНИЯ ПРИ ПАРОДОНТИТЕ В КОМПЛЕКСНОМ ЛЕЧЕНИИ

Хусанбаева Ф.А.[1]

[1] Ташкентский государственный медицинский университет

Аннотация. Цель работы – повышение эффективности ортопедического лечения пациентов с заболеваниями пародонта. Ортопедическое лечение заболеваний пародонта включает следующие этапы: избирательное сошлифовывание зубов; временное шинирование; ортодонтическое лечение (по показаниям); использование постоянных шинирующих аппаратов и зубных протезов. Цели шинирования включают исправление дефектов зубов, стабилизацию подвижных зубов и устранение травматической окклюзии и артикуляции. Окклюзионные каппы необходимо использовать при стоматологическом лечении заболеваний пародонта, включая терапевтическую, хирургическую реабилитацию, обучение ортодонта и изготовление постоянных ортопедических конструкций.

Ключевые слова: Пародонтальные заболевания, ортопедическое лечение, окклюзионные каппы.

Для цитирования:
Хусанбаева Ф.А. Применение ортопедических протезов для стабилизации и восстановления при пародонтите в комплексном лечении. ***Евразийский журнал оториноларингологии - хирургии головы и шеи.*** 2025;4(4): 34–38.
https://doi.org/10.57231/j.ejohns.2025.4.4.004

INTRODUCTION

There are certain obstacles in the treatment of periodontal diseases. Only comprehensive treatment of periodontal diseases, including surgical, therapeutic, physiotherapy and orthopedic procedures, can lead to effective treatment. Complex therapy includes the identification of the factors responsible for the occurrence of the disease and a clear definition of the main links of the pathogenetic mechanism of the disease. This is necessary to determine the methods of etiotropic and pathological therapy, as well as to develop an individual patient management plan. In the treatment of periodontal diseases, it can also be complex to include immunotherapeutic effects, methods to improve the general vital activity of the body, psychoemotional status, improve social living conditions, treatment of somatic diseases that can contribute to the development of periodontal pathology. It is important to note that patients with concomitant diseases can receive dental treatment only at the stage of recovery or medical compensation.

The aim of the work is to increase the effectiveness of orthopedic treatment of patients with periodontal diseases. The treatment of periodontal diseases

should begin with the complete removal of dental deposits. In addition, it is extremely important to get rid of local factors contributing to the accumulation of plaque, such as gingival cavities, non-repaired interdental contacts and overhanging edges of teeth, correction of anatomical and topographic edges of fillings, deeply advanced edges of artificial crowns under the gum, features of jaws and teeth, orthodontic treatment of malocclusion, crowding of teeth and other bite problems [4, 5].

MATERIALS AND METHODS OF RESEARCH

For orthopedic treatment of patients with periodontal diseases, various types of medical devices are used, which can be temporary or permanent, removable or non-removable. Immobilization of movable teeth and redistribution of the load on teeth that do not have periodontal damage or the mucous membrane of the prosthetic bed are the main reasons why orthopedic treatment of periodontitis is necessary.

In eliminating traumatic and functional overload of the periodontium by proper grinding, splinting and reasonable prosthetics is crucial [2,3,11].

Thus, the main stages of orthopedic treatment of periodontal diseases are the following: selective grinding of teeth; short-term splinting; orthodontic treatment (according to indications); the use of permanent splinting devices and dentures [1,5,6].

Orthopedic treatment of periodontal diseases is based on the fact that it allows you to relieve inflammatory phenomena, improve blood circulation, restore tissue trophism by eliminating pathological tissue mobility, normalize the occlusive ratio and reduce the effect of chewing pressure.

With the right choice and implementation of orthopedic interventions, occlusal loads, periodontal trophism and reparative processes in tissues improve, which contributes to the restoration of dentition defects and reliable stabilization of the remaining teeth. This improves the quality of life.

RESULTS AND THEIR DISCUSSION

In 50 patients with partial absence of teeth, local therapy began with careful removal of dental deposits and antiseptic treatment of the gingival margin, regardless of the form and stage of periodontal pathology. The next step was the removal of obvious premature dental contacts and the installation of disconnecting occlusal mouthguards. Subsequently, occlusive mouthguards were used for surgical operations, therapeutic rehabilitation and all other medical procedures of the periodontist (Fig.1.).

Fig. 1.

The patient is 36 years old.

Occlusive mouthguards were used in the removal of orthopedic structures that did not perform their function, in multiple tooth extractions, in long-term therapeutic treatment that allowed to restore the anatomical shape of the tooth, and so on [7]. Patients used these mouthguards on average three to four times a week, during which the patient was treated by a periodontist. Orthopedic procedures (manufacturing and splinting of prosthetic splints) were also carried out under the control of occlusive mouthguards. In this case, the mouth guard was relocated for better fixation in the oral cavity. The treatment was completed with rational prosthetics. When planning the orthopedic design, X-rays of all teeth were carefully studied. [8,9]

According to the indications of 32 patients, periodontal splints were made from composite filling materials. Ribbond or GlasSpan fibrous materials and light-curing liquid-flowing composites were used as reinforcement (Fig. 2,3).

The mobility of the teeth is reduced by a splint made of fiberglass or polyamide thread. Since its rigidity prevents the teeth from loosening, it reduces the risk of tooth loss.

Thanks to splinting, we were able to redistribute the load on the entire reinforced tooth fragment. The more healthy teeth are included in the immobilization, the more pronounced the unloading of mobile teeth becomes.

We limited ourselves to splinting the frontal group of teeth, because we believe that

Figure 2.3.

Patient K., 38 years old. The condition of the frontal group of teeth before splinting and the stages of splinting.

Fig. 4

immobilization of the chewing group of teeth when using fiberglass splints is not relevant. This is due to the fact that when using periodontal splints, more thorough oral hygiene is required, and patients with concomitant diseases associated with the severity of their condition may not pay special attention to this problem and, as a rule, as a result, do not receive the expected result from therapy.

Secondly, chipping on splinted teeth can lead to occlusive disorders due to the relative fragility of composite materials. In addition to splinting, temporary removable occlusal dental splints were made for all patients with periodontal diseases, which have unique characteristics that included closing not only the occlusal surface, but also the gingival margin by 1.5–2 mm.

Such splints regulate the height of the bite, correct both included and distal defects of the dentition, partially redistribute chewing pressure, do not require dental preparation and allow simultaneous occlusal correction and treatment of various drugs for the treatment of periodontal diseases. [1,6]

After the periodontal treatment was completed, we manufactured permanent clasp structures using splinting elements or partial removable prostheses (Fig. 4).

The repaired areas were left as permanent splints, depending on the material capabilities of the patient. As a result, orthopedic treatment of patients with partial absence of teeth in periodontal diseases is carried out comprehensively and has its own characteristics. This is designed to stabilize movable teeth and prevent traumatic occlusion and articulation, as well as redistribute chewing pressure through splinting and correction of dentition defects.

Dental care for periodontal diseases must be performed using an occlusion mouthguard (therapeutic, surgical rehabilitation, preparation for orthodontic treatment, creation of stable orthopedic structures). [1,6,8]

We recommend using Ribbond or GlasSpan dental materials for splinting movable groups of teeth. To manufacture dental and gingival occlusal mouthguards for therapeutic use. Use clasp splints or prostheses with a clamp fixation system as permanent structures.

CONFLICT OF INTERESTS

The authors declare the absence of obvious and potential conflicts of interest related to the publication of this article.

SOURCES OF FUNDING

The authors state that there is no external funding for the study.

AVAILABILITY OF DATA AND MATERIALS

All data generated or analysed during this study are included in this published article.

AUTHORS' CONTRIBUTIONS

All authors contributed to the design and interpretation of the study and to further drafts. All authors read and approved the final manuscript.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

All applicable international, national, and/or institutional guidelines for the care and use of animals were followed.

CONSENT FOR PUBLICATION

Not applicable.

PUBLISHER'S NOTE

Journal of *"Eurasian Journal of Otorhinolaryngology - Head and Neck Surgery"* remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Article received on 05.12.2025
Accepted for publication on 20.12.2025

КОНФЛИКТ ИНТЕРЕСОВ

Авторы заявляют, что данная работа, её тема, предмет и содержание не затрагивают конкурирующих интересов.

ИСТОЧНИКИ ФИНАНСИРОВАНИЯ

Авторы заявляют об отсутствии финансирования при проведении исследования.

ДОСТУПНОСТЬ ДАННЫХ И МАТЕРИАЛОВ

Все данные, полученные или проанализированные в ходе этого исследования, включены в настоящую опубликованную статью.

ВКЛАД ОТДЕЛЬНЫХ АВТОРОВ

Все авторы внесли свой вклад в подготовку исследования и толкование его результатов, а также в подготовку последующих редакций. Все авторы прочитали и одобрили итоговый вариант рукописи.

ЭТИЧЕСКОЕ ОДОБРЕНИЕ И СОГЛАСИЕ НА УЧАСТИЕ

Были соблюдены все применимые международные, национальные и/или институциональные руководящие принципы по уходу за животными и их использованию.

СОГЛАСИЕ НА ПУБЛИКАЦИЮ

Не применимо.

ПРИМЕЧАНИЕ ИЗДАТЕЛЯ

Журнал *"Евразийский журнал оториноларингологии - хирургии головы и шеи"* сохраняет нейтралитет в отношении юрисдикционных претензий по опубликованным картам и указаниям институциональной принадлежности.

Статья получена 05.12.2025 г.
Принята к публикации 20.12.2025 г.

REFERENCES /ЛИТЕРАТУРА

1. Srimaneepong V., et al. Fixed Prosthetic Restorations and Periodontal Health. BioMaterials (MDPI). 2022.
2. Alsaggaf AU. The impact of fixed and removable dental prostheses on periodontal health. — review. 2024.
3. Gotfredsen K., et al. Efficacy and risks of removable partial prosthesis in patients with reduced dentition: systematic review. Clin Oral Investig. 2022.
4. Tomasi C., et al. Efficacy of rehabilitation of stage IV periodontitis patients with extensive tooth-supported fixed bridges. J Clin Periodontol. 2022.
5. Hu ML., et al. Systematic review/meta-analysis of survival and complications of zirconia-ceramic vs metal-ceramic fixed dental prostheses. (systematic review). 2021.
6. Avetisyan A., et al. Characteristics of periodontal tissues in prosthetic treatment with fixed dental prostheses. Molecules. 2021.
7. Dawid MT., et al. Technical complications of removable partial dentures: systematic review and meta-analysis. Int J Prosthodont Res / MDPI. 2023.
8. Drummond LB., et al. Long-term assessment of the periodontal health of abutment and non-abutment teeth in patients with removable partial dentures. (longitudinal study). 2024.
9. Alaa S., et al. Surgical-prosthetic management of an advanced stage IV periodontitis case — case series and discussion. (Clin. Prosthetic approaches). 2025.
10. Onea N. Management of patients with periodontal disease requiring prosthodontic treatment by dental bridges — literature review. 2024 (PDF review).
11. Open Dentistry Journal. Radiographic evaluation of fixed prosthesis and periodontal implications. 2024.
12. Salehuddin NQ., et al. Patients' views on non-surgical and surgical periodontal treatment: implications for prosthetic rehabilitation. 2022.
13. Krisnandi et al. Role of temporary splints and prostheses to prevent tooth migration after periodontal surgery. Medicina Clinica Practica (review/case series). 2020–2021.
14. Chen B., et al. Expert consensus on diagnosis and therapy of endo-periodontal lesions (implications for prosthetic planning). Int J Oral Sci / Nature-linked consensus. 2024.
15. Piancino MG., Isola G., et al. From periodontal mechanoreceptors to chewing motor control: systematic review — релевантно при планировании протетической окклюзии у пародонтальных пациентов. Архивы Oral Biology. 2017 (цитируемая в обзорах).
16. Silvano C., et al. Effect of removable partial dentures on the periodontium — statistical analysis / review. 2021.
17. (Практическое руководство) Parameters of Care for the Specialty of Prosthodontics. Journal of Prosthetic Dentistry. 2020 — стандарты планирования протезирования с учётом пародонта.
18. Periodontology National Guidelines / Ed. Prof. L. A. Dmitrieva. M.: GEOTAR-Media, 2013. l12 p.
19. Статьи/обзоры по CAD/CAM-протезам и пародонтальному ответу (например, исследования 2021–2024 на тему: CAD/CAM-изготовление улучшает адаптацию и снижает маргинальные надвисания). См. Avetisyan 2021 и сопутствующие обзоры. 9. Gazhva S.I., Guluev R.S. Prevalence and intensity of inflammatory periodontal diseases // Review of Dentistry. 2012. No.1(75). pp. 13-14.
20. Periodontology National Guidelines / Ed. Prof. L. A. Dmitrieva. M.: GEOTAR-Media, 2013. l12 p.
21. Huseynov T.S., Akhmedova E.A., Hasanova M.A., Khalilov M.A. Therapeutic and prophylactic features of periodontitis in patients with thyroid diseases // Bulletin of new medical technologies. Electronic edition. 2019. No.2. Publication 1-3. URL: http://www.medtsu.tula.ru/VNMT/Bulletin/E2019-2/1-3.pdf (accessed 03/18/2019)