AMERICAN JOURNAL OF APPLIED MEDICAL SCIENCE
ISSN: 2996-5101 (online) | ResearchBib (IF) = 10.81 IMPACT FACTOR
Volume-4| Issue-2| 2026 Published: |28-02-2026

EVALUATION OF THE EFFECTIVENESS OF MODERN DENTURES IN PATIENTS WITH COMPLETE ABSENCE OF TEETH.

https://doi.org/10.5281/zenodo.18616580

Olimov Siddiq Sharifovich
siddiq_olimov@bsmi.uz
https://orcid.org/0000-0002-1142-6838
professor, Department of Orthopedic dentistry and orthodontics, Bukhara State Medical Institute, Uzbekistan
Rabiyev Behruz Homitovich
Bukhara state medical institute
bek777stom@gmail.com
https://orcid.org/0009-0009-1549-1889

Abstract

Despite the widespread study of pathological processes in the oral cavity, the problem of the prevalence of dental diseases in the population remains unresolved. This is the main reason for the complete loss of teeth in people of older age groups. At the same time, they have a need to replace dental defects with various dentures, including complete removable ones. The main goal of orthopedic treatment in these cases is to adequately manufacture prostheses and ensure their reliability and functionality.

Keywords

defect, caries, hard palate, atrophy, frenulum of the upper lip, prosthesis.

Studies have established a tendency towards an increase in the number of people with complete absence of teeth (especially in the older age group) in many countries. At the same time, people experience certain changes associated with dysfunction of the masticatory-speech apparatus, disharmony of the facial area, which, in turn, causes disturbances in psycho-emotional status. In this case, the preservation of teeth and the functions of the dental system are priority tasks for maintaining health, helping to maintain a high standard of living for patients, where the loss of teeth or removable dentures with a low degree of retention and stabilization significantly reduce adaptation to orthopedic structures [4].

Issues related to the complete loss of teeth have been the subject of debate for several decades. The most difficult are the rehabilitation of patients with complete loss of teeth and rational prosthetics, which determine the features of the manufacture of complete removable laminar dentures. According to literary

sources, over the past 65 years in our country there has been an increase in the proportion of people over 55/60 years of age. Thus, this figure in 2000 was 9.4%, in 1970 – 11.8%, and currently – more than 16%. This dynamics of increasing the proportion of elderly and senile people, where the figure is 32 million people, requires the development of comprehensive programs aimed at increasing the effectiveness of the dental care provided to them, taking into account the natural, climatic and geographical conditions of their residence [4, 5].

Complete absence of teeth (complete secondary adentia 2) is a consequence of a number of diseases of the dental system - caries and its complications, periodontal diseases, as well as injuries. Caries is one of the most common dental diseases, including in the Republic of Uzbekistan[2,7].

The incidence of periodontal diseases, predominantly of an inflammatory destructive nature, in elderly and senile people is also determined to be high [6]. These diseases, with rare access to specialists, can lead to tooth loss due to the removal of teeth that cannot be treated due to deep caries, pulpitis, periodontitis and periodontal diseases [4]. It should be noted that social and hygienic factors are important in shaping the health of organs and tissues of the oral cavity. Thus, numerous studies have shown that eating disorders in patients who have undergone dental surgery increase the likelihood of developing complications in the primary rehabilitation period, especially in geriatric patients [7].

It is known that in the process of physiological aging, elderly and senile people experience a decrease in the level of the body's regenerative resources. This situation causes a sharp decrease in the detection of diseases with an acute course, where the proportion of chronic comorbid conditions increases significantly. A feature of elderly patients in the practice of dentists is a decrease in the resource of the body's redox processes, including dysfunction of the entire dental system [3,8].

After tooth loss, the pathophysiological process of severe atrophy of the bone tissue of the dental arches of the jaws and the appearance of patients begins. The mechanism of atrophy is based on degenerative processes of both bone tissue and the soft tissue complex. At the same time, in persons with complete loss of teeth in the upper jaw, changes in the morphometric parameters of the vessels of the tissues of the prosthetic bed occur in comparison with patients with teeth, and the vascular walls thicken more than four times [8, 9].

It is important to emphasize that in persons with complete loss of teeth in the jaws, disturbances in the metabolic processes of bone tissue are detected, with subsequent qualitative changes in the mucous membrane of the oral cavity and the dental arch as a whole. At the same time, the degree of retention of a complete removable plate denture in the complete absence of teeth is directly influenced by

AMERICAN JOURNAL OF APPLIED MEDICAL SCIENCE
ISSN: 2996-5101 (online) | ResearchBib (IF) = 10.81 IMPACT FACTOR
Volume-4| Issue-2| 2026 Published: |28-02-2026

the state of the bone tissue of the edentulous jaw, the shape of the slopes of the dental arch, the degree of atrophy in the lateral parts of the jaws, the depth of the vault of the hard palate and the type of palatal suture [1,5].

There is a certain clinical relationship between the degree of atrophy of the dental arch and the area of the prosthetic bed, on which the fixation and stabilization of prosthetic structures largely depends. With complete loss of teeth, atrophy of the dental arch can be characterized as well-defined, moderately severe and moderate atrophy, characterized by well-preserved dental arches. With complete edentia of the upper jaw, there is a significant (on average 45–59%) reduction in the height and thickness of the dental arch of the upper jaw at the level of the infraorbital foramen and zygomatic-maxillary suture, while in 19% of cases the thickness of the dental arch is less than 5 mm [2].

An oval-shaped pathological defect, exposing a section of the dental root below the enamel-cementum border in the area of the upper edge of the dental arch of the upper jaw, in the group with complete edentia in the area of large molars has a thickness of 9.8 ± 0.6 mm, while in the area of small molars and the anterior group of teeth it does not exceed 7 mm. There is a certain pattern, which is associated with the fact that the more time has passed after the removal of teeth, the more pronounced is the decrease in the volume of bone tissue of the dental arches of toothless jaws. At the same time, the atrophic process can be aggravated during prosthetics, which is carried out without taking into account the individual anatomical and topographical features of the structure of the tissues of the prosthetic bed [10].

Currently, the main types of treatment for complete edentia are prosthetics with complete removable plate dentures and on artificial supports. At the same time, plate dentures are the most popular, while dental implantation remains an alternative method of choice for patients, since it has a certain range of medical contraindications. The choice of traditional removable prosthetics is associated with ease of manufacture, low cost and accessibility for all segments of the population [4]. A wide range of etiological factors for complete tooth loss, as well as pathogenetic mechanisms of their formation with numerous distant structures. At the same time, the triangular-pointed shape of the dental arch ridge causes a number of difficulties in prosthetics, contributing to the appearance of traumatic erosions on the oral mucosa and worsening the stability of a complete removable plate denture [3,8].

Certain difficulties during prosthetics are caused by the bony protrusions of the dental arch in the area of the prosthetic bed. In general, complete dentures on the upper jaw are in more favorable functional conditions than on the lower jaw.

Atrophy of the bone tissue of the dental arch on the upper and lower jaws is uneven: the upper jaw atrophies more slowly than the lower jaw, the atrophy of the upper jaw is centripetal (that is, in the direction from the outside to the inside), and the lower jaw is centrifugal [10]. The human upper jaw has a number of anatomical features: in the area of the median sagittal suture, the mucous membrane becomes thinner and prevents the prosthesis from settling into the tissue of the prosthetic bed, which is explained by the absence of a submucosal layer and tight fusion with the periosteum [2].

As a result of the absence of teeth and atrophy of the dental arch, the frenulum of the upper lip and transitional folds find themselves in close proximity to the top of the crest of the dental arch, as a result of which contraction of the facial muscles can move the prosthesis from its bed. Due to the structural features of the upper jaw, atrophy of the dental arch is more pronounced on the vestibular side. A decrease in the size of the dental arches and cusps leads to a decrease in the size of the upper jaw relative to the lower jaw [4]. It should be emphasized that the treatment of elderly and senile patients with complete absence of teeth is especially difficult. They inevitably experience functional and physiological changes with consequences in the functional activity of organs and tissues of the oral cavity, maxillofacial area, organs and systems of the whole body, which determine the features of research aimed at improving the provided dental orthopedic care [2]. Recently, dentistry has made significant achievements in the medical and social rehabilitation of patients with complete secondary edentia.

Meanwhile, unresolved issues remain related to increasing the retention, safety and functionality of complete removable dentures on edentulous jaws, taking into account the individual anatomical and topographic variability of the maxillofacial region. It is important to note that a number of domestic and foreign researchers are seriously studying these issues [2]. Today, in clinical dentistry, various methods have been developed and used to increase retention and stabilize complete removable plate dentures on jaws with varying degrees of atrophy of the dental arches. For this purpose, in practice, surgical methods and adhesive agents are used with maximum consideration of individual anatomical and topographical features [4].

However, there are difficulties in carrying out medical and social rehabilitation of patients with complete loss of teeth. Thus, after prosthetics with complete removable dentures, only 23.7% of patients actively use them, who use them when eating (11.4%) or during communication (7.0%). Meanwhile, more than half of patients with complete removable dentures develop various pathologies of the oral mucosa. According to a number of authors, such patients who sought

orthopedic care at municipal dental institutions for the purpose of re-prosthetics account for about 40% [2].

REFERENCES:

1. Analysis of microcirculatory disorders in patients with lichen planus of the oral mucosa / Yu. A. Makedonova [et al.] // Yakut Medical Journal. – 2019. – T. 65, No. 1. – P. 48–51. DOI: 10.25789/ YMJ.2019.65.15

2. Babich, V.V. Features of orthopedic treatment with complete secondary absence of teeth in elderly and senile patients / V.V. Babich // Medicus. – 2021. –T. 40, No. 4. – pp. 42–44.

3. Clinical and epidemiological characteristics of pathological processes of periodontal tissue of an inflammatory-destructive nature / I. D. Ushnitsky [et al.] // Yakut Medical Journal. – 2018. – T. 61, No. 1. – P. 83–86. DOI: 10.25789/YMJ.2018.61.25

4. Musaeva (Abakarova), K. A. Improving the fixation of complete removable plate dentures in conditions of severe atrophy in the area of the maxillary tuberosities / K. A. Musaeva (Abakarova), B. V. Asom, S. U. Saliev // Dentistry. – 2018. – No. 2. – P. 27-28.

5. Morphological features of the maxillofacial region of people with complete secondary edentia and various types of constitution / A. A. Korobkeev [et al.] // Medical Bulletin of the North Caucasus. – 2020. – T. 15, No. 4. – P. 539–543. DOI: 10.14300/mnnc.2020.15127

6. Baginsky, A. L. Indicators of medical-demographic, social-hygienic, somatic and dental statuses of the indigenous population of the Evenki municipal district of the Krasnoyarsk Territory / A. L. Baginsky, Yu. V. Chizhov, I. D. Ushnitsky // Yakut Medical Journal. – 2013. – T. 44, No. 4. – P. 69–71.

7. Features of the manifestation of the chewing reflex in patients after dental rehabilitation with dentures on artificial supports / M. I. Muzykin [et al.] // Yakut Medical Journal. – 2021. – T. 76, No. 4. – P. 38–42. DOI: 10.25789/ YMJ.2021.76.09

8. Andreeva, I.V. Morphometric indicators of the periodontal vessels of the upper jaw with an intact dentition and complete edentia / I.V. Andreeva, V.V. Volikov // Russian Medical and Biological Bulletin named after Academician I.P. Pavlov. – 2015. – T. 23, No. 4. – P. 11–16.

9. Temporal and mandibular joint computed tomography application efficiency during the record of jaw central correlation / D.V. Mikhalchenko [et al.] // Drug Invention Today. –2019. – Vol. 11, № 3. – P. 753–757.

10. A comprehensive study of dental orthopedic morbidity in elderly people and ways to eliminate it / N. S. Fedorova [et al.] // Endodontics Today. – 2021. – T. 19, No. 4. – P. 299–305. DOI: 10.36377/1683-2981-2021-19-4-299-305.

11. Adhesives for removable dentures. Myths and reality (laboratory research) / N. N. Abolmasov [etc.] // Dentistry. – 2019. – T. 98, No. 6. – P. 90–95. DOI: 10.17116/stomat20199806190

12. Medical and geographical characteristics of the North and modern aspects of improving dental care / I. D. Ushnitsky [et al.] // Yakut Medical Journal. – 2016. – T. 55, No. 3. – P. 49–53.