

LONG-TERM RESULTS OF BONE TISSUE ATROPHY IN PROSTHETIC WEARERS**Babayev E.,***Doctor of Philosophy in Medicine, assistant***Mammadova S.,***Doctor of Philosophy in Medicine, assistant***Rustamov E.***Doctor of Philosophy in Medicine, Assistant**Azerbaijan Medical University,**Department of Orthopedic Dentistry*<https://doi.org/10.5281/zenodo.14679367>**Abstract**

The problem of rehabilitation of patients with dentition defects, despite the high level of development of orthopedic dental care, still remains relevant. Recently, more and more attention has been paid to the development of new dental materials that imitate tooth tissue, soft tissues of the prosthetic bed, with constantly improving clinical qualities. The introduction of new technologies is also facilitated by the increasing demands of patients themselves for the prostheses manufactured by them.

Keywords: removable dentures, terms of use, bone tissue atrophy.

Various designs of removable dentures are widely used to replace dentition defects [3, 4, 5], which in turn act as a physiological stimulus that promotes the development of restructuring processes in supporting tissues [6, 10]. Subsequently, the uneven distribution of chewing pressure on the tissues of the prosthetic bed causes their overload with an increase in the compliance of the mucous membrane until the formation of a “dangling ridge” [1/2/8]. According to a number of authors, the functional adaptation of the tissues of the prosthetic bed to chewing pressure may be directly dependent on the design features of the prostheses used. Therefore, the question of studying the processes of atrophy and the reasons for their rapid manifestation in the clinic of partial absence of teeth is still relevant today [7, 9]. The purpose of the study is to identify the dependence of the degree of atrophic processes in the supporting tissues of the prosthetic bed in patients using various types of removable dentures on the extent and topography of the dentition defect and the time of use of the prosthesis.

Material and methods.

A survey was conducted of 25 patients who applied to the orthopedic dentistry clinic for the purpose of repeated prosthetics at the age of 40 to 80 years. Complaints were made about poor fixation, cracks or breakage of the denture base, clasp fracture, pain in the supporting teeth, and an increase in food debris under the denture. Of these, 13 patients used plate prostheses with retaining clasps, 12 patients used clasp prostheses with support-retaining clasps. All patients used removable dentures for 3 to 7 years. To study the relief of the tissues of the prosthetic bed, all applied patients received a functional impression using an old prosthesis under the force of chewing pressure from the patient himself using impression material for toothless jaws of medium viscosity Detaseal function, having previously formed perforations for the outflow of excess material and to prevent deformation of the soft tissue relief due to compression. The impression thus obtained was studied as follows. The layer of impression material covered the inner surface of the prosthesis unevenly,

depending on the degree of discrepancy between the inner part of the prosthesis and the tissues of the prosthetic bed. The thickness of the impression material was assessed using a micrometer. The measurements were carried out in accordance with generally accepted concepts about the zones with the greatest and least degree of morphological changes, taking into account the jaw and the topography of the defect in the area of the defect in the dentition; the thickness of the impression material was measured along the top of the alveolar process or the alveolar part under the artificial teeth at three points and at three points along the sides slopes of the alveolar ridge and alveolar part. The obtained measurement data were subjected to mathematical processing. Results. Analysis of the results of a study of the state of the supporting tissues of the prosthetic bed under the bases of dentures of various designs indicates that, regardless of the type of prosthesis design, restructuring of the tissues of the prosthetic bed occurs in all patients, regardless of age. Analysis of the data obtained showed that during the first 6 months of using both clasp and plate prostheses, changes in the relief of the prosthetic bed were insignificant. More significant changes in the tissues of the prosthetic bed from 0.35 ± 0.1 to 0.8 ± 0.1 mm were determined in the period from 12 to 24 months of using removable dentures. When assessing the degree of change in the relief of the prosthetic bed depending on the extent of the defect, it was revealed that minimal changes were observed under clasp and plate prostheses. Moreover, with small defects included under plate dentures, the change in the relief of the prosthetic bed was 0.61 ± 0.1 mm, while under clasp dentures it was 0.37 ± 0.1 mm. When assessing changes in the relief of supporting tissues with long-term defects, after 24 months, atrophy increased from 2 to 3 times and amounted to 1.83 ± 0.1 mm under plate dentures and 0.74 ± 0.1 mm under clasp dentures, respectively. Thus, with an increase in the length of the defect, changes in the relief occur more intensely at all periods of use of removable dentures, both plate and clasp. The influence of the localization of the dentition

defect on the degree of change in the relief of the tissues of the prosthetic bed was revealed. In the anterior section, the degree of change in relief was observed to a lesser extent than when defects were localized in the lateral sections, where the alveolar process or alveolar part absorbs a greater chewing load. In these areas, changes in the first year of using prostheses are maximum - 0.18 ± 0.1 mm - in contrast to the anterior section, where in the period from 12 to 24 months changes in the relief of the prosthetic bed were insignificant and amounted to 0.09 ± 0.1 mm. The data obtained largely confirm the influence on the speed and degree of atrophic processes of a combination of factors, such as the area of the base of the prosthesis, the type of fixing elements, morphological features of dentition defects, etc.

Conclusion.

The processes of atrophy and restructuring of the underlying supporting tissues of the prosthetic bed are an inevitable process, depending on the severity of which there is a deterioration in the functional indicators of orthopedic treatment using removable denture structures. Studying the complex restructuring processes occurring in the tissues of the prosthetic bed, and identifying the possibilities of influencing and regulating these processes, makes it possible to prevent their progression, which will certainly affect the quality of orthopedic treatment with removable prosthetic structures.

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