Indicators of Effectiveness of Removed Dental Prostheses

Navruzova N. O., Saidov A. A.
Bukhara State Medical Institute

The relevance of the topic. Among the reasons for the high need for orthopedic treatment with removable dentures, the leading position is still occupied by " insufficient sanitation of the oral cavity, untimely access of patients to the dentist." In addition, an important role is played by the problem of imperfection of materials and technologies used for the manufacture of dentures, leading to deterioration of the dental system [1.3.5.7.9].

The current methods. There are many scientific and practical works around the world devoted to the local and systemic sensitivity of the body to dentures made of various types of plastics. The results of the conducted studies confirm that when using removable dentures made of acrylic polymers, changes of various nature are often observed in the tissues of the prosthetic bed and the oral mucosa, and the most common of them are inflammatory and dystrophic, associated with mechanical and toxic-allergic effects of the prosthesis base material. However, the quality of removable prostheses largely depends on the manufactured material. Therefore, special interest is paid to improving the biocompatibility and physico-chemical properties of prostheses [2.4.6.8].

The complexity of processing dentures made of thermoplastic polymer, leading to a rapid loss of aesthetic characteristics of the denture, its contamination with microorganisms that contribute to diseases of the oral mucosa, the emerging dissatisfaction of patients with the altered appearance of the removable prosthesis. (Dmitrienko S.V., 2013; Danilina T.F., 2013; Mikhalchenko D.V., 2013; Irsaliev H.And, Nigmatov R.N., Khabilov H.L., 2011; Lee S.J., 2008).


This technology is of interest not only among specialists, but also among patients. A common characteristic of this group of materials is the absence of a residual monomer, and, consequently, their bioinertness for the body. The constructions of them are characterized by elasticity; lightness, comfort and high aesthetics (. Vares E.Ya, 2004; Konnov V.V., 2010; Fujii T.A., 2005).

Traditional technical approaches and well-known polishing agents used in dentistry for basic polymers leave traces, micro-scratches, do not allow to achieve a smooth, even and shiny surface of a dental prosthesis made of thermoplastic polymers [1.7.9.11]. The final processing of dental prostheses made of thermoplastic polymers today requires a lot of time and effort from specialists and often leaves dissatisfaction with the quality of the surface obtained [10.11].

The purpose of the study. To determine the features of prosthetics with removable dentures and to develop criteria for the selection of materials for removable dentures with end defects.

Objectives

of the study: the microbiological state and local immune response of the oral cavity were studied during prosthetics with various designs of removable dentures with partial absence of teeth in the near and long term after prosthetics.

the pH of the oral fluid was studied during prosthetics with various designs of removable dentures with partial absence of teeth in the near and long term after prosthetics.
a special questionnaire system has been developed for patients with various types of removable dentures with partial absence of teeth.

a method for determining the hygienic condition of the surface of dentures made of various materials has been developed.

The most modern scientific achievements of domestic and foreign scientists are analyzed. A description of the literature reflecting the approach of world scientists to solving this problem is presented. We studied the need for orthopedic treatment with removable dentures in the partial absence of teeth, the effect of removable dentures on the prosthetic bed, the pliability of the mucous membrane of the prosthetic bed, factors affecting changes in the tissues of the prosthetic bed when: using removable dentures.

The study included a general description of 67 people with partial and complete toothlessness aged 40 to 60 years. The control group included 16 healthy people. 33 patients were men and 34 women. 23 people included in the control group, 10 were men and 13 were women.

All the subjects were divided into three groups.

1-the group where the Quadrotti prosthesis made of thermoplastic material was used. (n=34)
2-group where patients had dentures made of acrylic polymer "Fluorax" (n=33)
Control group-healthy people (n=16)

Based on medical and social research, a special questionnaire was developed for patients in order to determine the clinical condition of the prosthesis, which is carried out using a questionnaire

With the help of the questionnaire, such data were revealed as previously used prostheses, the attitude of hygienic care to the prosthesis, the use of hygiene products, Your satisfaction with the prosthesis, whether you used professional cleaning of prostheses, the use of hygienic procedures, the timing of the comfortable use of the removable prosthesis.

The developed technique consists in dividing the surface of a removable denture into frontal and lateral segments, the boundaries of which are a line drawn through the middle of the canines on the denture, staining with a solution of methylene blue, rinsing with water for 5 seconds and drying with an air jet for 10 seconds, assessing the hygienic condition of the prostheses by staining the segments. At the same time, the surface of the removable denture is divided into the following segments: 1 and 2 segments – the area of the frontal teeth, 3 and 4 segments - the area of the chewing teeth, the assessment of the hygienic condition of the prostheses is carried out according to the following criteria: 1 degree - staining of 1 segment - a satisfactory level of hygiene, 2 degree - staining of 2-3 segments - an average level of hygiene, 3 degree - staining of 1, 2, 3, 4 segments - an unsatisfactory level of hygiene, 4 degree - staining of the entire surface of removable dentures facing the oral mucosa – critical level of hygiene. Depending on the degree of staining of the surface of the prosthesis, patients were given appropriate recommendations.

Methodology for assessing the condition of the oral mucosa. The condition of the mucous membrane of the cavity was assessed by its color, moisture content, degree of compliance. The fact of the influence of removable denture structures can be expressed in the manifestation of pathological changes. For their presence and evaluation, the classification of prosthetic stomatitis proposed by A.K. Iordanishvili (2007) was used. The inflammatory reaction of the mucous membrane was detected using the technique proposed by E.S. Kalivrajian (2003).

At the stages of dynamic observation, to identify inflammatory areas of the mucous membrane, the inner surface of the prosthesis was covered with an emulsion-a solution of zinc oxide, a solution of aqueous polyvinyl alcohol and food starch, in a ratio of 1:1:4:3. The surface was dried. After that, the Schiller-PISAREV composition was used on the mucous membrane of the prosthetic bed and a minute later the fixation of the emulsified prosthesis into the oral cavity was carried out. For several seconds, the patient imitated chewing movements. Then the prosthesis was removed from the oral cavity. The iodine
included in the composition reacted with starch. The intensity of the base coloring in blue color, topographically displayed areas of inflammation of the oral mucosa. At the heart of the staining process is edema, as a manifestation of the inflammatory process in soft tissues. The assessment was carried out subjectively by color: the more intense the color, the higher the intensity of the inflammatory reaction of the mucous membrane. Quantitative measurement of the area of the mucosal load zones was carried out using the application of a polyethylene film with a millimeter division into a outlined fragment of the oral mucosa. Consequently, the transfer of the inflammation zone was further scanned in the computer program "histogram", the area was calculated. The indicators of the inflammatory response of patients of the selected groups were summed up. In the future, they were analyzed in a comparative aspect between clinical groups. The dynamics of the state of the oral mucosa was checked after 3.14 days, 1,3,6 months of patient observation.

A device (pH meter) was used to determine the pH of the oral fluid with special vacuum electrodes with a flat working surface, which provided a rigid connection between the measuring electrode and the reference electrode. The device as part of the pH meter-millivoltmeter model "pH-121", has a low thermal inertia and allows you to get the result in a few seconds.

Microbiological studies were conducted in the groups of patients studied by us before and after prosthetics. To do this, patients were offered to rinse their mouths with distilled water 2 hours after eating, then the oral fluid was collected in sterile dishes, and subsequently the surface of differential diagnostic nutrient media was seeded with a certain volume of them. Cultivation of crops for the isolation of anaerobic microbes was carried out by the method of sealed polyethylene bags filled with mainline natural gas. Identification and differentiation of cultured microorganisms was carried out using Bergy's Manual Systematic Bacteriology (1997)

To determine the phagocytic activity of neutrophils in saliva, sampling and processing of the material were carried out according to the method of Temurbaev M.A. (1984), modified by Antonov A.V. (1996). The activity of lysozyme in saliva was determined by us using the method of Aliyev Sh.R. (1994) (1 The method for determining immunoglobulins of class A – secretory fraction (sIgA) is based on the Mancini method (1964).

Statistical studies were conducted on the basis of standard clinical recommendations. The results of the clinical examination were processed on a Pentium-IV personal computer using Microsoft Exell office applications and the STATPLUS biostatistics program (2009), with the calculation of the arithmetic mean of the studied indicator (M), its standard error (m), reliability indicators (P) and the Student's criterion.

According to the obtained data on the index of cleanliness of prostheses in 100% of patients of all groups, throughout the entire period of use, it can be argued that the worst result was not revealed - a "very poor level of hygiene" corresponding to 5.0-5.5 points. In patients of the main group 1, after a month, the condition of removable prosthesis structures is at the level of "satisfactory" in 5 people (31.3%), and at the level of good-11 people (68.7%). There are no bad results.

In patients of group 1, after a month, the condition of removable prosthesis structures is at the level of "satisfactory" already in 8 people (50%), and at the level of good - only in 4 people (25%). There is also a bad condition in 4 people (25%).

In patients of the comparison group, after a month, the condition of removable prosthesis structures is at the level of "satisfactory" only in 8 people (50%), and at the level of good - only in 4 people (25%). There is also a bad condition in 4 people (25%).

In patients of the comparison group, after a month, the condition of removable prosthesis structures is at the level of good- 9 people (52.9%), at the level of "satisfactory" only 5 people (29.4%), and at the level of bad 1 person (5.9%). After 3 months, the results of the survey showed that all 49 patients noted the constant, convenient use of prostheses. Everyone expressed their satisfaction with the aesthetic properties of their designs. During the survey, it was revealed that all the survey participants carefully followed the recommendations and carefully monitored the oral cavity and prostheses. The professional assessment of the hygienic condition worsened after 6 months in the 2nd observation group.

**Conclusion.** Thus, the hygienic state of prosthetics of patients with removable denture structures made
of Quadrotti prosthesis shows the advantage of removable dentures over those made using classical technology. The best results were determined in group 1 in people using Quadrotti prostheses. The average results were in group 2 in individuals who had rigid dentures made using classical technology.

As a result of the study of the condition of the mucous membrane, the presence of an inflammatory reaction in the form of foci with color of different intensity was revealed in all groups of patients.

Analysis of the obtained macrohistochemical data indicates that the highest average values of the inflammatory reaction are observed in the first week after the application of removable prosthesis structures. Moreover, the reaction of the mucous membrane depends on the properties of the basis and is more pronounced under the influence of rigid structures, compared with thermoplastic prostheses. In patients of the second group using rigid prostheses, the foci of the inflammatory reaction were the largest, and their average value was -314.8 ± 0.03 mm. This corresponds to only 32% of changes in adaptation processes.

REFERENCES.