



Frequency of Occurrence and Clinical Manifestations of Stomatitis in Patients After Acrylic Prosthetics

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ABSTRACT

The article discusses the frequency of occurrence and clinical manifestations of stomatitis in patients after prosthetics with acrylic polymers. 48 patients aged from 42 to 88 years were examined. Among the surveyed persons there were 30 women and 18 men. All patients needed partial removable dentures. There were no contraindications to prosthetics. The prostheses were prepared from the acrylic polymer Etacril-02. Due to the urgency, there is a need to solve the medical and social problem and develop new technologies for the effective comprehensive treatment of patients with partial and complete absence of teeth.

Keywords:

Acrylic polymer, stomatitis, prosthetics, questionnaires

Relevance of the Topic

An urgent problem in modern dentistry is the orthopedic treatment of patients with partial and complete absence of teeth. According to a number of data [2,5], orthopedic structures need to be improved at certain clinical and laboratory stages of manufacturing. In traditional orthopedic treatment, patients refuse to use removable dentures in 47% for various reasons and in 27-35% due to poor fixation and stabilization on the jaws[1]. Modern removable orthopedic structures in the treatment of patients with partial and complete absence of teeth are subject to such requirements as optimal retention and high efficiency of the masticatory function, corresponding to non-removable orthopedic structures. In the domestic and foreign literature, attention is paid to occlusion, but the issues of complex interaction of occlusion, masticatory muscles and biomechanics of the temporomandibular joint in the process of functioning of orthopedic structures are not sufficiently covered. A significant number of publications note a decrease in favorable conditions for ensuring optimal oral hygiene after orthopedic treatment [6]. Insufficient

attention is paid to the preparation of the oral cavity during prosthetics. In modern dentistry, the precision of orthopedic structures is important, which depends on the quality of the impressions [9]. Known methods of obtaining impressions in the partial and complete absence of teeth have certain disadvantages, especially when prosthetics using dental implants [10]. The construction of the prosthetic plane in modern articulators is difficult due to the insufficient number of reference points. The traditional method does not allow for the parallelism between the pupillary line and the cutting edge of the anterior group of teeth [3]. The traditional surgical technique of preparing and forming an individual prosthetic bed in patients with partial and complete absence of teeth provides for traumatic intervention [7]. There is a need to use other techniques without accompanying surgical corrections. Complications of dental implantation range from 6% to 23% [3]. It was found that patients using prostheses based on dental implants have signs of peri-implant mucositis in 80% and dental peri-implantitis in 28-56% of cases [1]. Diagnosis of peri-implant mucositis, dental peri-implantitis requires the

introduction of early signs based on metabolic criteria and can be carried out by evaluating the oral fluid of patients with qualitative and quantitative indicators [5]. The most widely used in the manufacture of removable orthopedic structures are acrylic plastics containing monomer [2]. Along with their advantages, they have a number of disadvantages: prostheses made of these materials can cause toxic and allergic reactions in the oral cavity [1]. The currently used thermoplastic materials for the manufacture of 7 partial and full removable prostheses have flexibility, elasticity and aesthetics [10]. These prostheses are fixed on the teeth due to dentoalveolar clasps and pellets, which belong to the retaining type of clasps and have certain disadvantages, the lack of functional distribution of the occlusal load on the supporting teeth and stabilization along the plane [3]. When prosthetics of partial defects of the dentition, the most functional and aesthetic is the production of a clasp prosthesis with a lock type of fixation [2]. Patients are treated with the problem of breaking the removable part of the structure, while the non-removable part remains functional in the oral cavity. In long-term follow-up, in some cases, the supporting tooth must be removed as a result of the progression of periodontal disease or complicated forms of caries [4]. Clasp prostheses of this design cannot be used due to the changed clinical situation. Alternative solutions to these technologies are required. The analysis of domestic and foreign literature revealed the need to improve orthopedic training and comprehensive treatment of partial and complete absence of teeth. Due to the urgency, there is a need to solve the medical and social problem and develop new technologies for the effective comprehensive treatment of patients with partial and complete absence of teeth.

The purpose of the study. To study the frequency of occurrence and clinical manifestations of stomatitis in patients after prosthetics with acrylic polymers and to establish clinical and anamnestic predictors of their development.

Material and Methods

48 patients aged from 42 to 88 years were examined. Among the surveyed persons there were 30 women and 18 men. All patients needed partial removable dentures. There were no contraindications to prosthetics. The prostheses were prepared from the acrylic polymer Etacril-02. The process of manufacturing the prostheses followed the standard procedure. The patients underwent a clinical and anamnestic examination twice (before and 1 month after the prosthesis was installed). In the clinical study, we used a questionnaire developed on the basis of established and assumed risk factors for the development of prosthetic stomatitis, allergic reactions. The presence of occupational hazards, bad habits, allergic diseases, dental disorders, and concomitant pathology was taken into account. We used the Kendall rank correlation (τ) method, the χ^2 criteria, and the Fisher angular transformation with the Yates correction. Statistically significant differences were considered at $p < 0.05$

Results

It was found that after 1 month after prosthetics, symptoms of stomatitis developed in 29.6% of cases. Clinical manifestations of stomatitis included discomfort in the oral cavity, burning and tingling of the oral mucosa (100 % of cases), dry mouth (62.5%), impaired sensitivity and changes in taste sensations (56.3%), the presence of hyperemia and edema of the oral mucosa (100.0% of cases), headaches and sleep disorders (25.0%), single point hemorrhages of the mucous membranes (12.5%), exacerbation of atopic dermatitis (6.3%). In the majority of patients (81.3%), the first signs of stomatitis occurred on 7-15 days after prosthetics. The two selected groups of patients (with and without prosthetic stomatitis) did not differ significantly ($p > 0.05$) in clinical and anamnestic characteristics at the time of initial treatment for dental care. However, it was found that the development of prosthetic stomatitis had a positive relationship ($p < 0.05$) with the presence of

allergic disease in patients ($\tau=0.32$), chemical adverse factors at work ($\tau=0.20$) and thyroid pathology ($\tau=0.20$).

Conclusion

Information about the patient's allergic history should be used to determine the risk of prosthetic stomatitis in each individual patient and to determine individual schemes of therapeutic and preventive measures.

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