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FAMILIARIZATION WITH THE HYGIENIC ASSESSMENT OF THE CONDITION OF THE ORAL MUCOSA IN ORTHOPEDIC TREATMENT

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ABOUT ARTICLE

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Abstract: The most common causes of complications in the mouth and the unsuitability of fixed structures are considered to be inflammatory processes, caries and its complications (16,4–25,2 %) [7,8,12], thermal burns of the pulp (4.3%) [4,6,9], cementation of the supporting crowns (8-21% of all complications). These processes often develop in the area of the edge of artificial crowns and are caused by the destruction of the cement layer that fixes the non-removable prosthesis. One of the typical complications of dental prosthetics, which often develops within the first year after fixation of the artificial crown, is the exposure of the neck of the tooth root due to gum recession [3,5,11].

INTRODUCTION

The occurrence of cervical or secondary caries under an artificial crown was noted in 1.78% of cases. This is above the average level of foreign ones (0.4%), but falls within the range of the given parameters (0-2.7%). The need for endodontic treatment is 4.63% [2,7,13], in foreign literature (0-6%) [1,3,14]. Papillitis, gingivitis and marginal periodontitis occurred in 1.07% of cases, in foreign researchers — 0.6%. In the long term, up to 5 years, the average parameters of the lesion of the marginal periodontium leveled out and amounted to 16.96%. Deep cracks, as well as chipping, and broken cladding were noted in 5.22% of cases [2,8,14].

In the dental practice of the world, there is a high frequency of various orthopedic and orthodontic defects, including forms manifested in the form of various degrees of adentia. The prevalence of adentia has increased significantly and according to the data is 35.4-62.9% [5,8.10]. Despite significant advances in the field of materials science and improvement of the quality of dental prostheses, various authors note complaints of intolerance in patients from 0.6 to 12% [1,8,11]. Many researchers note that patients with removable dentures have different levels of adaptive capabilities, the study of which makes it possible to predict the development of intolerance. When diagnosing and predicting intolerance to dentures, it will allow obtaining objective information about compensatory and adaptive reactions occurring during the use of removable dentures and developing preventive measures to accelerate the adaptive capabilities of the body [3,6,10].

Thus, there is a need to form a concept that makes it possible to offer modern methods of diagnosis, prevention and treatment of adentia, which have properties of action on oral homeostasis and the general condition of the body.

MATERIAL AND METHODS

130 patients who underwent treatment in the polyclinic in 2020-2022, aged from 30 to 65 years, were examined.

The presence of areas of inflammation of the mucous membrane of the prosthetic bed, as well as the dynamics of changes in this indicator, were evaluated using the method of macrohistochemical research proposed by N.I.Lesnykh. This technique is inexpensive and allows you to conduct a study of the SOPR for the presence of inflammation without resorting to instrumental techniques.

Also, in order to determine the functional suitability of prostheses, a questionnaire of 10 questions was used, developed by M.Yu. Ogorodnikov, the questionnaire was conducted 1, 6 and 12 months after undergoing orthopedic treatment:

The clinical evaluation of the effectiveness of orthopedic treatment included the identification of signs of inflammation of the mucous membrane of the prosthetic bed, determining the timing of adaptation of patients to the installed prostheses.

The process of adaptation to complete removable dentures includes three stages: the first phase is the phase of irritation, which takes place on the day of application of the prosthesis and is characterized by the effects of increased salivation, impaired diction, pronounced gag reflex, low chewing efficiency.

The second phase, partial inhibition, is characterized by the restoration of phonation, a decrease in salivation, an increase in the effectiveness of chewing, and the gag reflex fades. This phase lasts from the 1st to the 5th day after the prosthesis is applied.

The third phase, complete inhibition, which occurs between the 5th and 33rd days, is characterized by the fact that the patient does not feel the prosthesis as a foreign body, while its extraction, on the contrary, causes discomfort.

Statistical processing of the obtained data was performed with the calculation of the arithmetic mean, the mean square deviation, and the arithmetic mean error. The reliability of the differences between the two samples was assessed using the Student's parametric criterion.

RESULTS AND DISCUSSION

Observation of patients with non–removable solid-cast combined denture structures showed that in the 2nd subgroup, where adhesive films were used for preventive purposes, there was no inflammatory process in the marginal periodontium during all observation periods in any case. On the 2nd day after the preparation of the supporting teeth, minor damage to the epithelium of the marginal periodontium was determined when examined under a magnifying glass. The Schiller-Pisarev sample was negative, the toluidine sample was weakly positive. The gingivitis index was 0.42 ± 0.1. In subsequent follow–up periods — on the 3rd, 5th, 7th and 14th days — the absence of an inflammatory process in the marginal periodontium was noted.

On the second day after the start of treatment, there was a decrease in the intensity of the inflammatory process in the affected areas in both study groups, but they were expressed differently, depending on the method of treatment.

In patients of the 1st subgroup, there was a slight decrease in pain and bleeding gums. During the examination, soreness, swelling and hyperemia of the gums were observed in 86.6%. The gingivitis index for intact periodontal disease was 1.5 ± 0.3. The Schiller-Pisarev sample did not change significantly and amounted, respectively, to 3.9 ± 0.32 for intact periodontal disease.

On the third day of follow–up, the inflammatory process in the marginal periodontal was detected in 80.9% of patients of the 1st subgroup, although its intensity was less pronounced compared to the 2nd day, but patients complained of pain and bleeding gums in the area of the prepared teeth. The gingivitis index was 1.32 ± 0.2 (Fig.**). The Shiller-Pisarev test was positive: 3.8 ± 0.28.

On the 5th day of treatment, patients of the 2nd subgroup had no complaints of pain, bleeding, and discomfort in the mouth. Only in the 1st subgroup, the inflammatory process in the marginal periodontal area decreased slightly and was observed in 52% of patients.

On the 7th day of follow–up, there were no clinical manifestations of the inflammatory process in the tissues of the marginal periodontium in patients of the 2nd subgroup. The gum was pale pink in color, dense, without signs of inflammation and bleeding, painless when touched. In patients of the 1st subgroup, the inflammatory process remained at the same level. And only on the 14th day, the inflammatory process subsided in patients of this subgroup, but not completely (by 72.5%).

In the course of treatment, the oral hygiene index significantly improved in patients of both studied subgroups. These observations indicate that at the end of treatment, there was no significant difference in all subgroups of patients. So, in the 1st subgroup, the hygienic index was 2.3 ± 0.2, and in the 2nd group, at the end of treatment, these data corresponded to 1.2 ± 0.1.

All of the above indicates the high therapeutic effectiveness of the method of preventing inflammatory changes in the marginal periodontium in the dental orthopedic treatment of dentition defects with non-removable denture structures.

After the prostheses were installed, patients of all groups were recommended to visit the dentist for the next 3 months with an interval of two weeks.

During the study, the rate of adaptation to the prosthesis was assessed in all groups: the time frame of the irritation phase, the partial inhibition phase and the full inhibition phase. The number of relocations carried out in each of the groups was also estimated.

In each group, the incidence of reflex nausea was assessed in patients with a complete removable upper jaw prosthesis.

The frequency of allergic reactions to acrylates was assessed. The presence of inflammatory sites in patients of the three study groups at various stages of the recovery period was also assessed. When assessing the adaptation to prostheses, the average periods of the irritation phase, primary inhibition and complete inhibition were estimated by groups.

Thus, in the main group (with physiotherapy), the irritation phase lasted 1.12 ± 0.3 days. In the control group, the completion time of the irritation phase was 1.17± 0.2 days. In the primary prosthetics group, this period was up to 1 day in all patients.

The partial inhibition phase in the main group lasted 3.5± 1.2 days. In the control group, the partial braking phase lasted on average 4.4±0.9. In the group after primary prosthetics, the duration of this phase averaged 3 ± 0.3 days.

Patients of the main group reached the end of the complete inhibition phase after an average of 30 ± 0.7 days. In the control group, this indicator was 33.1±0.4 days. And in the group after primary prosthetics 31.1 ± 0.9 days.

Thus, there was a shortening of the time of full adaptation to the prosthesis in the group with the use of physiotherapy by 3 days compared with the control group and, on average, by 1 day compared with the group of primary prosthetics without complications.

Next, the number of relocations of installed prostheses was estimated. In the main group, the number of such requests was 0.4± 0.2, no prosthesis was replaced, whereas in the control group this indicator was 2.0± 0.1, in this group two prosthesis replacements were performed. In the group, after the initial installation of the prosthesis, the correction was performed on average 0.6 ± 0.3 times (no replacement of the prosthesis was performed).

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