

**Comparison of the effectiveness of individual oral hygiene methods for
prosthetics with removable dentures based on implants.**

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Abstract: On patients with removable dentures supported on implants, the effectiveness of methods of individual oral hygiene in the dynamics of observation was studied. All patients were divided into 2 groups: group 1 consisted of 15 patients using a toothbrush and toothpaste to maintain individual hygiene; Group 2 consisted of 15 patients, patients using the complex "toothbrush + intradental brush + irrigator" and toothpaste to maintain individual hygiene. In order to determine efficiency and hygiene, the hygiene index was used superstructures (IG_{SK}) and gingival th index (the GI). Indicators of the index s patients first group were significantly worse than in a second group, and practically much different from the average values of the control group

Keywords : implant, dentures, removable dentures, hygiene of the cavity of the mouth, superstructure.

Introduction: Currently, dental implantology is of great importance among dental reconstructive operations. However, as with other areas of dental science, we have limited information about the features of the individual oral hygiene prosthetics on the implant's. At the same time, almost all authors, to one degree or another, touching upon the issues of hygienic care of the oral cavity during implantation in their studies, agree that the hygiene of teeth, implants and supraconstructions has a significant effect on the effectiveness of orthopedic treatment using artificial supports [1, 2,3]

Indeed, implants are in constant contact with various fluids in the oral cavity (oral, gingival), food. In addition, they are no exception in terms of the accumulation of microbial plaque. Moreover, U. Lekholm, R. Abel, T. Yonegama (1986) and others concluded that the rate of formation of microbial plaque on the surface of the implant is higher than on natural teeth. It is clear that this microbial plaque is capable, as in the area of natural teeth, to provoke the development of an inflammatory reaction in the tissues surrounding the implant. [4.5]

Materials and methods of research: Determination of the quality of hygiene of the implant area and gums was carried out using the supraconstruction hygiene index (IG_{sc}) and the gingival index (GI) in patients with removable dentures supported on implants of all groups at 3, 6 and 12 months after fixation of the orthopedic structure ... The purpose of using this research method was to determine the presence of soft and hard plaque in the area of the supraconstruction and to determine the condition of the gums in the area adjacent to the orthopedic structure and dental implants. The study of the index assessment of these areas of the oral cavity of patients will allow to establish the relationship between the level of hygiene and the condition of the gums and superstructure in the area of implants, taking into

account the cleaning agents used by patients , as maintenance of hygienic care of the oral cavity and orthopedic structure.

The studied patients were divided into 2 groups depending on the choice of the prosthesis design :

And the group - patients who use a toothbrush and toothpaste to maintain personal hygiene ;

Group B - patients who use the complex "toothbrush + intradental brush + irrigator" and toothpaste to maintain individual hygiene .

Professional oral hygiene of the studied patients was carried out every 3 months according to the schedule . The survey was carried out prior to professional hygiene .

Results

Values of supraconstruction hygiene index (IH_{sc}) in the area of implants in patients with removable dentures over time within 3 months, 6 months, 12 months. are presented in the table .

Table. Characteristics of the indices of the supraconstruction index (IH_{sc}) in the area of implants in patients with removable dentures in dynamics.

Terms of research Groups	3 months	6 months	12 months
Control group	0.72 ± 0.09	0.96 ± 0.1	0.79 ± 0.09
And the group	1.19 ± 0.07	2.074 ± 0.068	2.713 ± 0.03
B group	1.19 ± 0.11	1.36 ± 0.10	1.77 ± 0.10

In the control group, the supraconstruction hygiene index (IG_{sc}) showed slight changes in dynamics and had an average value of indicators in all periods of the study. So, at the beginning of the study, the values of the IGS indicators in the control group were equal to 0.72 ± 0.09 points, in the subsequent periods there was a slight increase in indicators to 0.96 ± 0.1 points , and after a year the value was equal to 0.79 ± 0.09 points m , which reflected the optimal status of oral hygiene in patients. Patients in all periods of the investigation was not revealed severe deterioration trend I or improvement I indicators.

At 3 months of the study period patients A group using only manual toothbrush, the average value IG_{ck} was 1.19 ± 0.07 scores , the figure shows satisfactory level of hygiene s superstructure in the installed implants. In the second period of the study (6 months), there was a significant increase in the values of the IG_{ck} indicator to 2.074 ± 0.068 points, which was defined as a sufficient level of hygiene of the IG_{cc} in patients with a removable orthopedic structure. A year after the beginning of the study, an increase in the index values up to 2.713 ± 0.03 points was determined, which meant an unsatisfactory status of the hygiene index of supraconstruction of the IG_{ck} . Thus, 12 months after the conducted studies, in patients with removable dentures supported on implants and using exclusively a manual toothbrush and toothpaste for personal oral hygiene, an

unsatisfactory and insufficient level of hygiene in the area of supraconstruction fixed on implants was determined, which was more than 3 times higher and had a significant difference in comparison with the control group.

In group B, at the initial stage of the study (3 months), the mean value of IGS did not exceed 1.19 ± 0.11 points, and the hygienic status in the suprastructural area in this group of patients was determined as satisfactory. After 6 months, the average value of the supraconstruction hygiene index in this subgroup was 1.36 ± 0.10 points - there was a slight increase in the parameters, the hygienic status in the supraconstruction area corresponded to a sufficient one. By the time of the study of 12 months, average data with significant changes were obtained and the value of the IGSC index was 1.77 ± 0.10 points, therefore, the index indicators were interpreted as high, and were more than 2 times higher than the data, obtained in the study of IH of the control group and corresponded to sufficient hygiene of the supraconstruction in the area of implants.

At the study periods of 6 months and 12 months, the indicators of the hygiene index in the area of supraconstruction in the B group of patients using the complex of means "toothbrush + interdental brush + irrigator" as maintenance hygiene were fairly lower than in group A ("toothbrush"). which reflects the effectiveness of the level of cleaning of implants with an irrigator.

The data obtained during the examination of patients in group B had average values between those in the control and in group A; This means that the hygienic state of the supraconstruction of patients in group B was significantly worse than the hygienic state of the oral cavity in the control group, but better than in group A.

It should be noted that hard plaque was absent in all groups when studying the hygienic index of the supraconstruction.

After examining the data obtained, we found that in patients using removable dentures, the hygienic state of the supraconstruction in the area of implants was different, which was due to the choice of various sets of oral hygiene care products and the duration of the observation period. It was also noted that in patients using the irrigator after observation periods of half a year and 1 year, the average values of the hygiene index were 2 times less than in the group of patients using only a manual toothbrush, but exceeded the average values compared to the control group. which corresponded at best NIJ hygiene s.

When studying the hygienic state of the gums surrounding the implant, an increase in the indices of the gingival hygiene index was observed in all groups of patients at all times of the study, however, the data varied. The dynamics of changes in the values of the gingival index is presented in the table.

Table . Characteristics of the gingival index (GI) indices in the area of implants in patients with removable dentures in dynamics.

Terms of observation Groups	3 months	6 months	12 months
Control group	0.802 ± 0.05	0.77 ± 0.04	0.81 ± 0.04
A subgroup	2.18 ± 0.07	1.72 ± 0.18	1.68 ± 0.21
B subgroup	1.72 ± 0.15	1.61 ± 0.09	0.79 ± 0.06

Based on the data obtained, it was noted that in the control group the GI values remained unchanged at all periods of the study 3, 6, 12 months and were 0.802 ± 0.05 , 0.77 ± 0.04 , 0.81 ± 0.04 , respectively. ... This indicator reflected the condition of the gums in the norm, without any signs of inflammatory reactions.

After 3 months, the values of the gingival index in subgroup A patients were 2.18 ± 0.07 points, after 6 months the GI values in the area of the implants decreased to 1.72 ± 0.18 points. This indicator indicates the presence of severe gingivitis, which is caused by a long period of adaptation of the gingival mucosa to the prosthesis. When studying the data obtained after 12 months of the study, there was a tendency to a decrease in the average value of the index and, thereby, to a decrease in clinical signs of the inflammatory process of the gums - slight hyperemia and pinpoint bleeding of the gums in the area of implants. Gingivitis is diagnosed as a process, extending with an average degree of severity.

An improvement in the condition of the gums was observed in patients of subgroup B six months later, after fixation of the orthopedic structure. Six months later, in this group of patients using the complex of means "toothbrush + intradental brush + irrigator" for maintaining oral hygiene, the gingival index values were significantly lower than in the A subgroup (1.61 ± 0.09), i.e. signs of gingival inflammation in the area of implants were not significant and corresponded to moderate gingivitis.

12 months after the treatment, the gingival index decreased to 0.79 ± 0.06 points, which was more than 2 times lower than in the 1st group of patients. Thus, by the end of the year, the average values of the gingival index in patients of group 2 were significantly lower than in subgroup A and practically did not differ from the average values of the control group. The word value of GI did not exceed 0.8 points and corresponded to the state of the gums in the area of implants in the norm. ...

Analysis and discussion: After studying the data obtained, it was found that after a year in patients with removable dentures using an irrigator in addition to other personal hygiene products, this method allows maintaining the condition of the gums in the implant area without any signs of inflammation.

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