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Influence of the choice of the design of a prosthesis supported on implants, depending on the method of individual oral hygiene, on the quality of life of patients with complete absence of teeth.

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Abstract: In patients with removable and conditionally removable prostheses on implants studied on quality of life after a month and a year after prosthetics. All patients were divided into 2 groups: 1 group consisted of 30 patients with removable dentures on dental implants; 2 groups consisted of 30 patients prosthetic conventionally-removable dentures to dental implants, and each group is divided into two subgroups: A subgroup of 15 patients, is used to maintain personal hygiene toothbrush and toothpaste; B subgroup of 15 patients, used to maintain personal hygiene complex "toothbrush + interdental brush + irrigator" and toothpaste. The research was carried out to assess the quality of life. Indicators of criteria for evaluating the quality of life in a subset of patients, using as personal hygiene complex "toothbrush + interdental brush + irrigator", were significantly better than the performance of patient groups supporting the hygiene of the mouth and dentures only with a toothbrush and toothpaste.

Keywords: implant, prosthesis, removable prosthesis, conditionally removable prosthesis, quality of life

Introduction: Currently, complex treatment using dental implants for the rehabilitation of dental patients with partial or complete adentia is widespread. This is explained by the fact that as a result of prosthetics based on dental implants, it is possible to restore the function of the dentition, speech function and an important aesthetic function, in comparison with other types of orthopedic treatment. [1 , 2 , 3]

For effective prosthetics with dental implants of secondary complete or partial edentulousness, it is necessary to recreate the masticatory system, which adapts according to the changing clinical situation. Therefore, this system, consisting of antagonist teeth, prosthesis, implant and abutment bone, will meet the necessary requirements for a long time. [4 , 5]

Research materials and methods :

Patients were surveyed with dentition defects and periodontal diseases using the Oral Health Impact Profile-14 (OHIP-14) dental quality of life questionnaire. This questionnaire is intended for all age groups and can be applied regardless of the type of dental nosology. The OHIP-14 questionnaire - " Oral health impact profile " assumes a 5-point system to assess answers to 14 questions ("never", "almost never", "rarely", "usually", "very often"). The OHIP-14 assessment scale corresponds to a "good" quality of life with a total score of 0-14 on

the questionnaire, "satisfactory" - 15-28 points, "unsatisfactory" - 29-42 points, "bad" - 43-56 points. The main questions of the OHIP-14 questionnaire relate to the identification of difficulties in pronunciation of words, pain in the mouth, a decrease in vital interests, taste for food, difficulty in eating, difficulties in communicating with people, difficulties in work due to problems with teeth, cavity mucosa mouth or dentures. Testing was carried out patients with primary examination, after preprosthetic readjustment of the oral cavity in a volume of tooth extraction, installation of implants .

And a study to assess the quality of life of groups of patients with complete adentia of the upper or lower jaws in terms of: before treatment, 1 month, 12 months after orthopedic treatment , to determine the perception of patients of their condition.

Distribution by groups

Group	Type of prosthetic construction		Number of patients	Total
I	Removable structures	Subgroup A	fifteen	thirty
		Subgroup B	fifteen	
II	Conditionally removable structures	Subgroup A	fifteen	thirty
		Subgroup B	fifteen	

Research result :

By differentiating groups of patients according to the use of individual hygiene methods, it was possible to determine significant differences between the indicators in the groups at different periods of the study.

A study of the quality of life before prosthetics in patients of all four groups revealed a low level of quality of life (35.89 ± 6.5 points in group 1-A, 36.82 ± 7.1 points in group 1-B, 35.00 ± 5.9 points in group 2-A, 37.8 ± 7.8 in group 2-B), which averaged 36.38 points. The highest score was noted on issues related not only to functional disorders (difficulty chewing food, impaired diction, soreness when eating), but also in relation to difficult adaptation in society and, in fact, not feeling comfortable.

Table. Indicators of quality of life criteria according to the OHIP questionnaire -14 groups of patients with removable and conditionally removable prostheses supported on implants before orthopedic treatment, points.

	I		II	
	but	B	but	b
function limitation	6.53 ± 0.12	6.43 ± 0.12	4.93 ± 0.11	6.43 ± 0.12
physical discomfort and	4.93 ±	5.48 ±	6.67 ± 0.12	6.48 ± 0.13

pain	0.014	0.14		
psychological discomfort	6.66 ± 0.13	5.32 ± 0.12	3.98 ± 0.14	4.64 ± 0.09
physical disorders	3.36 ± 0.1	5.54 ± 0.12	5.72 ± 0.13	5.9 ± 0.08
psychological disorders	4.76 ± 0.12	4.87 ± 0.11	4.98 ± 0.12	5.09 ± 0.12
social maladjustment	4.66 ± 0.14	4.97 ± 0.13	5.28 ± 0.11	5.59 ± 0.14
Damage	4.98 ± 0.1	4.21 ± 0.14	3.44 ± 0.1	3.67 ± 0.12

One month after prosthetics, we observed a positive dynamics of changes in the quality of life of patients in all four subgroups. In subgroups I- B and II- B, using as tools for maintaining individual oral hygiene and the structure of the complex "toothbrush + intradental brush + irrigator", the indicators of improvement in the quality of life were more pronounced than in subgroups I- A and II - And using only a toothbrush and toothpaste. Thus, in patients of subgroups I- B and II- B after the treatment, the indices of limited functioning decreased to values of 1.97 ± 0.14 and 1.59 ± 0.07 , which is 69% and 75% better than in the first study. , indicators of physical discomfort and pain decreased by 77% and 75%, and psychological disorder by 60% and 78%, respectively. The indicators of social maladjustment also decreased to average values of 1.17 ± 0.13 and 1.01 ± 0.09 points, respectively. However, patients continued to experience dissatisfaction with functions such as chewing and speaking. Smaller changes in the indicators of quality of life assessment 1 month after treatment in the first subgroup I-A indicate a longer stage of adaptation of patients of this group to removable dentures with support on implants. Objectively, this group showed symptoms of inflammation, swelling of the gingival papillae, hyperemia of the gums, and local bleeding. The indices of the criterion of physical discomfort and pain in groups I- A and II- A decreased to average values of 2.98 ± 0.12 and 3.44 ± 0.11 , which is 39.5% and 48.4% less than with the research carried out before the prosthetics.

Table. Indicators of the quality of life criteria according to the OHIP questionnaire -14 groups of patients with removable and conditionally removable prostheses supported by implants 1 month after orthopedic treatment, points.

	I		II	
	but	B	but	b
function limitation	3.66 ± 0.1	1.97 ± 0.14	3.28 ± 0.12	1.59 ± 0.07
physical discomfort and pain	2.98 ± 0.12	1.21 ± 0.11	3.44 ± 0.11	1.67 ± 0.08
psychological discomfort	3.30 ± 0.14	1.45 ± 0.1	2.60 ± 0.14	1.75 ± 0.09

physical disorders	3.62 ± 0.09	1.69 ± 0.12	2.24 ± 0.1	1.17 ± 0.06
psychological disorders	2.94 ± 0.08	1.93 ± 0.12	2.08 ± 0.12	1.09 ± 0.09
social maladjustment	2.26 ± 0.12	1.17 ± 0.13	2.92 ± 0.08	1.01 ± 0.09
Damage	2.58 ± 0.11	0.41 ± 0.14	2.76 ± 0.09	1.93 ± 0.08

By the end of 1 year of the study, we noted a noticeable increase in the quality of life of patients, after 12 months the average numerical indicator for the groups was reduced to "good". So the values of the quality of life in subgroups I- A, I- B, II- A, II- B were equal to 6.43 ± 0.03 , 2.72 ± 0.02 , 6.37 ± 0.02 , 1.29 ± 0.03 points, respectively.

Considering the criteria of quality of life the best indicator was identified in patients group II of - D, using as personal hygiene complex "tooth brush + intro of Dental brush + irrigator ". A decrease in the limitation of function by almost 90% was noted. Complaints of pain and discomfort were noted in isolated cases, the indicator of this criterion decreased by 77% compared to the indicators of the study within 3 months after orthopedic treatment. Dissatisfaction with their own psychological state was reduced by 75%. The median physically disorder decreased to values 0.25 ± 0.01 points. The indicator of the criterion assessing the social maladjustment of the patients of this group also decreased to values of 0.21 ± 0.01 , which is 88% lower than the indicators during the study period at 3 months and 90% lower than during the study period carried out before prosthetics.

Among the studied subgroups of patients, the worst level of quality of life was determined in I- A and II- A, using a toothbrush and toothpaste as personal hygiene for the oral cavity and prosthesis. The indicators of the criterion assessing the limitation of function in patients of subgroup I- A were worse by 26%, physical discomfort and pain - by 31%, psychological discomfort - by 25.6%, physical disorders - by 19%, psychological disorders - by 38%, social maladjustment - by 52%, compared with the average of the same criteria in patients subgroup I -B, using as personal hygiene and oral prosthesis complex "tooth brush + intro of dental brush + irrigator ". Significant differences between the index criteria for assessment of quality of life of these patients subgroups year after the treatment indicates insufficient quality hygiene of the mouth and dentures.

Table. Indicators of the quality of life criteria according to the OHIP questionnaire -14 groups of patients with removable and conditionally removable prostheses supported by implants 12 months after orthopedic treatment, points.

	I		II	
	but	B	but	b
function limitation	1.69 ± 0.08	1.25 ± 0.06	1.75 ± 0.04	0.17 ± 0.12
physical discomfort and pain	1.93 ± 0.09	1.32 ± 0.04	1.17 ± 0.03	0.38 ± 0.13
psychological discomfort	1.17 ± 0.07	0.87 ± 0.03	1.09 ± 0.03	0.34 ± 0.14
physical disorders	0.41 ± 0.06	0.33 ± 0.01	1.01 ± 0.04	0.25 ± 0.01
psychological disorders	0.55 ± 0.08	0.34 ± 0.01	0.68 ± 0.13	0.35 ± 0.02
social maladjustment	0.65 ± 0.05	0.31 ± 0.01	0.45 ± 0.12	0.21 ± 0.01
Damage	0.77 ± 0.06	0.96 ± 0.02	0.22 ± 0.1	0.05 ± 0.02

In the study of patients' quality group life, which were treated with removable or conditionally removable dentures, it was revealed that the level of quality of life criteria in these patients groups is correlated not only with the choice of construction and long term use of orthopedic prosthetic implant, but also with the method of individual oral hygiene. Thus, in groups of patients using conditionally removable dentures, the level of quality of life increased throughout the study and the indicators were higher compared to groups using removable dentures. At the same time performance criteria for evaluating the quality of life in a subgroup of patients, using as personal hygiene complex "tooth brush + interdentalny brush + irrigator ", were significantly better than the performance of patient groups supporting the hygiene of the floor of the STI mouth and dentures only with a toothbrush and toothpaste.

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