EVALUATION OF ORTHOPEDIC TREATMENT EFFICIENCY OF PATIENTS WITH POST-TRAUMATIC DEFECTS OF THE UPPER JAW BY THE INDICATORS OF QUALITY OF LIFE

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ABSTRACT

Acquired maxillofacial defects are most often accompanied by pronounced functional and aesthetic disorders, which lead to limitation of life, social maladaptation and deep sociopsychological problems of the patient's existence. Therefore, the purpose of our study was to monitor the effectiveness of orthopedic treatment of patients with post-traumatic and postoperative defects of the maxillofacial system by quality of life. The period of adaptation, fixation of the structure in the oral cavity, presence of inflammatory processes under the prosthesis, breakage and correction, convenience of use, diction, hit of food residues under the prosthesis and oral-nasal test were determined and analyzed. The study showed that the improved technique had a positive effect on each of the parameters and made it easier to adapt to dentures and improve the quality of life of patients in general.

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Introduction. An important aspect of the specialized dental care system is the provision of adequate comprehensive rehabilitation measures. Acquired maxillofacial defects are most often accompanied by pronounced functional and aesthetic disorders, which lead to limitation of life, social maladaptation and deep sociopsychological problems of the patient's existence. At the same time, it is

extremely important not only to carry out qualitative and adequate prosthetics, but also the necessary rehabilitation measures [1, 2, 10, 11].

At orthopedic treatment it is necessary to consider that the acquired maxillofacial defects lead to reduction (or absence) not only of vital functions, but also significantly affect the social and psychological sphere of the patient. Recovery of defects in the maxillofacial region is of different importance for patients and depends on gender, age, social status, type of employment and other characteristics. In some cases, the presence of the acquired maxillofacial defects of the dental rows leads to extremely pronounced social maladaptation, reduces or eliminates the possibility for the patient to perform his or her daily routine. Patients' needs also vary greatly: from recovery of chewing function to aesthetic requirements and psychological comfort. It is from these positions that the study of quality of life in patients with acquired maxillofacial defects is an extremely important scientific task [5, 8].

In view of the above, the aim of our study was to monitor the quality and effectiveness of orthopedic treatment of patients with post-traumatic and postoperative defects of the dento-mandibular system, which made removable prostheses with the obturating part, according to clinical and psychological indicators.

Materials and methods of research. The study was conducted at the Department of Orthopedic Dentistry, University Dental Center, Kharkiv National Medical University.

The effectiveness of orthopedic treatment with the use of a two-layer base of material "PM-SN" and by the advanced method was investigated by such indicators of quality of life of patients with post-traumatic defects of the upper jaw as the period of adaptation, fixation of the structure in the oral cavity, the presence of inflammatory processes under the prosthesis, the floor of the prosthesis, ease of use, diction, prosthetic food residue and oral-nasal test.

The study was conducted at the Department of Orthopedic Dentistry, University Dental Center, Kharkiv National Medical University.

Orthopedic treatment of 25 patients with post-traumatic defects of the upper jaw, aged 39 to 56, was examined and performed to achieve this goal. All of them were divided into 2 groups: I - control group (n = 12, 8 - men, 4 - women), whose patients were made removable prostheses with a obturating part made of ordinary basic plastic; II - the main (n = 13, 10 - men, 4 - women) - patients made two-layer removable prostheses with the obturating part.

Analyzing the literature data, we have found that there is no classification of patients' adaptation periods to removable plate prostheses with obturating part, therefore, considering the practical experience and own observations, we believe that the best time for this type of construction is a period - 7 days, II - 1 month, III - 2 months.

The study of quality of life indicators was conducted by the method of questioning by self-filling by the respondent (patient) of a specially designed questionnaire, which reflects an objective assessment of the patient's state of health. The data obtained were subjected to a scaling process, turning into points to facilitate statistical analysis. The answers to the questions were evaluated using a 5 point system.

The questionnaire consists of 22 questions and is a multidimensional tool that allows you to receive both the life's quality of the respondent as a whole and private assessments in particular areas and subspheres of his life.

Formation of the database on the results of the research was carried out in Microsoft Excel, 2007. Statistical processing of the research results was carried out using the software package Statistica v. 8.0. The arithmetic mean of the quantitative indicators presented in the text ($M \pm m$) was calculated, where "M" is the sample mean and "m" is the error of the mean. The results of the description of qualitative indicators (frequency of withdrawal) were expressed in percentage. In all statistical analysis procedures, the achieved significance level (p) was calculated, with the critical significance level in this study assumed to be 0.05. The hypothesis of the equality of the general averages in the two groups compared was tested using the nonparametric Wilcoxon-Mann-Whitney criterion for independent samples, and the percentages using the χ-square criterion [12, 13].

Research results. Table 1 shows that the period of adaptation to removable plate prostheses with the obturating part and the two-layer base in the main group was significantly shorter than in the patients of the control group. So, within 7 days 2 patients (15.4%) were able to adapt from the first group, and 11 (84.6%) ($p < 0.05$) were able to adapt in a month, while 7 patients (58.3%) the second group took a month and 5 (41.7%) took two months.

Improved technique and the fixation of the prosthesis in the mouth. The generalized data were divided into three levels – «Bad Fixation», «Satisfactory», and «Excellent». According to the results of the research, it was found that there were no dissatisfied patients in the main group, 4 patients (30.7%) answered that the fixation was satisfactory, and the other 9 (69.3%) stated that it was excellent. As for the control group, 16.7% of the respondents (2 patients) had poor prosthesis fixation ($p < 0.05$), 75% (9 patients) stated that the fixation was at a satisfactory level and only 1 ($p < 0.05$) a patient from across the group noted an excellent level for this indicator.

The presence of inflammatory processes under the prosthesis was investigated in three stages − after 1 day, 7 days and after 14. In the first stage in the main group of all 13 patients, only 2 (15.4%) had inflammation, whereas in the second group it was 91.7% of cases (11 people) were observed ($p < 0.05$). In the following stages, there were no complaints of patients in the main group, and in the control group − in 66.7% (8 people) ($p < 0.05$). The third stage of observation of this indicator − 33.3% of patients (4 men) of the control group had inflammatory processes, ie after two weeks of their complete elimination could not be achieved.

Patients in the main group noted the absence of getting food residue under the prosthesis, but there were those who sometimes had food poisoned (1 patient) and rarely (2 patients). In the control group, the results showed the following: frequent hits in 25% (3 patients), sometimes − 58.3% (7 patients), rarely − 16.7% (2 patients).

The study showed that only 3 patients (23%) of the main group and 12 (100%) of the control group needed adjustments or corrections.

One of the generalized and subjective, but perhaps most important, indicators of quality of life for a given group of patients is convenience. 13 patients (100%) of the main group were satisfied with this parameter. 92.3% (12 patients) of the main group and 58.3% (7 patients) of the control group are satisfied with another indicator - diction.

Table 1. The results of the study of the quality of life of patients after treatment

Life's quality indicator	Observation period	Main group, n=13		Control group, n=12	
		absolute	%	absolute	%
Adaptation period	7 days	2*	15,4%	-	-
	1 month	11*	84,6%	7	58,3%
	2 months	-	-	5	41,7%
Fixation of the prosthesis in the mouth	bad	-	-	2	16,7%
	satisfactory	4	30,7%	9	75%
	excellent	9*	69,3%	1	8,3%
The presence of inflammatory processes under the prosthesis	1 day	2	15,4%	11	91,7%
	7 days	-	-	8	66,7%
	14 days	-	-	4	33,3%
Getting food residue under the prosthesis	often	-	-	3	25%
	sometimes	1*	7,7%	7	58,3%
	rarely	2	15,4%	2	16,7%
Breakage / correction	2 months	3	23%	12	100%
Ease of use	satisfactory	12	92,3%	8	66,7%
	unsatisfactorily	-	-	4	33,3%
Diction	satisfactory	12	92,3%	7	58,3%
	unsatisfactorily	1	7,7%	5	41,7%
Oral-nasal test	positive	-	-	9	75%
	negative	13*	100%	3	25%

Note: * the difference is significant between the indicators ($p<0,05$).

The main purpose of applying the prosthesis with the obturating part is to differentiate between the oral and nasal cavities and / or sinus. The oral-nasal test was negative in 100% of the patients in the main group and only in 25% of the control group, which indicates a significant functional superiority of the prostheses made by our advanced technique.

Conclusions. Having analyzed the results of the conducted research, we came to the conclusion that the use of the questionnaire we created is appropriate and relevant. It can be used as a prognostic criterion for evaluating the dynamics of treatment in patients with post-traumatic upper jaw defects. As research has shown, the dependence of quality of life on orthopedic treatment in this group of patients is not just significant, but vital, because it covers the most urgent medical and social problems. The use of this questionnaire in the daily practice of orthopedic dentist gives an opportunity to assess the significance and level of its assistance in the complex treatment of patients with post-traumatic defects of the upper jaw.

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