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Реферати

ОПТИМІЗАЦІЯ МЕТОДІВ ДІАГНОСТИКИ І ПРОГНОЗУВАННЯ ХІРУРГІЧНОЇ КОРЕКЦІЇ ВИКРИВЛЕННЯ НОСОВОЇ ПЕРЕГОРОДКИ
Шушляпіна Н.О.

У роботі пропонуються підходи до оптимізації методів діагностики і прогнозування хірургічної корекції викривлення носової перегородки. Вводиться метод оцінки впливу повітряного потоку на стінки носової порожнини на мікрорівні. Пропонується метод комп'ютерного планування хірургічної ендоназальной пластики, заснований на побудові об'ємної аеродінамічної моделі носової порожнини за даними комп'ютерної томографії та ріноманометрії. Розглядаються питання, пов'язані з діагностикою та хірургічним лікуванням респіраторно-нюхових порушень.

Ключові слова: відхилення носової перегородки, хірургічна ендоназальна пластика, аеродинамічна модель носової порожнини, комп'ютерна томографія, ріноманометрія.

Стаття надійшла: 4.05.18 р.

ОПТИМИЗАЦИЯ МЕТОДОВ ДИАГНОСТИКИ И ПРОГНОЗИРОВАНИЯ ХИРУРГИЧЕСКОЙ КОРРЕКЦИИ ИСКРИВЛЕНИЯ НОСОВОЙ ПЕРЕГОРОДКИ
Шушляпина Н.О.

В работе предлагаются подходы к оптимизации методов диагностики и прогнозирования хирургической коррекции искривления носовй перегородки. Вводится метод оценки влияния воздушного потока на стенки носовй полости на микроуровне. Предлагается метод компьютерного планирования хирургической эндоназальной пластики, основанный на построении объемной аеродинамической модели носовй полости по данным компьютерной томографии и риноманометрии. Рассматриваются вопросы, связанные с диагностикой и хирургическим лечением респираторно-обонятельных нарушений.

Ключевые слова: отклонение носовой перегородки, хирургическая эндоназальная пластика, аэродинамическая модель носовой полости, компьютерная томография, риноманометрия.

Рецензент: Безшапочний С.Б.

DOI 10.26724/2079-8334-2018-4-66-136-140
UDK 616.314-089.843-085-039.77

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EFFICIENCY OF DIFFERENTIATED LONG TERM MAINTENANCE TREATMENT IN DENTAL IMPLANT SURGERY PATIENTS

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Purpose of this study was to evaluate the effectiveness of the proposed differential maintenance treatment in patients who underwent dental implantation, based on the results of the clinical dynamic observation and the data of laboratory tests (microbiological, immunological and rheological), depending on the initial level of the Green-Vermillion's HI after the implant prosthetics stage, according to the clinical and radiologic control in the long-term (1 year).

Key words: dental implantation, oral hygiene, differential treatment.

The present study is a fragment of the research project "Restoration of dental health in patients with major dental diseases and their rehabilitation" (state registration No. 0116U004191).

In present day, dental implantology as a science is developing rapidly. [1-2]. Despite undoubted achievements, an important problem of dental implantation is the risk of complications in the implants' functional period [3-4]. With the active functioning of the created biotechnical system, problems and complications can occur with both the biological and the technical component. The most common complication affecting the tissue surrounding the implant is peri-implantitis [5]. The leading cause of peri-implantitis of actively functioning implants is a compromised barrier function of the implant's gingival cuff, as a result of unsatisfactory oral hygiene. In this period, an important component of the hygienic measures is the regular professional hygiene of the oral cavity, whose task is to carefully remove the biofilm, plaque, supra- and subgingival calculus from all surfaces of the crown and root parts of the tooth, including furcations. Therefore, with careful individual and professional hygiene, one can count on the continued successful functioning of prosthetic structures with the support of implants [6]. However, despite a number of existing recommendations on the timing of hygienic examinations, up to the present time there are no scientifically substantiated approaches to support treatment with concrete practical recommendations for any of the stages of dental implantation, taking into account the condition of periodontal tissues and the level of the oral hygiene. Considering the above, we think it is advisable to posit

the multiplicity of professional hygiene at the implants' functional period, taking into account the state oral hygiene [7-8].

The purpose of the study was to evaluate the effectiveness of the proposed differential maintenance treatment in patients who underwent dental implantation, based on the results of the clinical dynamic observation and the data of laboratory tests (microbiological, immunological and rheological), depending on the initial level of the Green-Vermillion's HI after the implant prosthetics stage, according to the clinical and radiologic control in the long-term (1 year).

Materials and methods. Considering, on the one hand, the essential role of the oral hygiene in the processes of alveolar bone remodeling due to the influence of lipopolysaccharide of parodontopathogens on osteoclasts and, on the other hand, the revealed correlation of the initial level of the oral hygiene state with the degree of damage to periodontal tissues, we have posited the expediency of different multiplicities of professional hygiene in patients after the implant prosthetics stage.

We examined 124 somatically healthy people (54 men and 70 women) aged 18 to 34, including: 25 people with intact periodontium, 35 patients with chronic catarrhal gingivitis (CCG), 30 patients with generalized periodontitis (GP) of initial-I, I degrees, 34 patients with GP of I, I-II degree of severity. CCG, GP were diagnosed based on clinical examination data, radiography, periodontal indices in accordance with the International Classification of Diseases (ICD 10).

In patients with healthy periodontium, who had a "satisfactory" (1.38 ± 0.14) level of oral hygiene by Green-Vermilion's HI, the hygienic measures were maintained with traditional multiplicity - every three months in the first year.

In patients with CCG, in which the level of oral hygiene by Green-Vermilion's HI (OHI-S) corresponded to the lower limit of the "unsatisfactory" (1.88 ± 0.19 points), hygienic measures were maintained with the following multiplicity: every two months in the first year.

In patients with HI of the I degree, in which the level of oral hygiene according to the Green-Vermilion's HI (OHI-S) corresponded to the upper limit of the "unsatisfactory" (2.34 ± 0.22 points), and in patients with GP of II degree, in whom the level of oral hygiene Green-Vermilion's HI (OHI-S) corresponded to the "bad" (2.81 ± 0.20 points), the hygienic measures were carried out with the following multiplicity – every month in the first year.

Clinico-radiological monitoring was performed 1 year after the prosthesis. At the same time, the condition of the mucous membrane (color, consistency, presence of fistula and granulation) and bone tissue loss in the area of functioning implants were assessed, since the most frequent complications during the implant surgery are peri-implantitis and pathological loss of bone tissue.

Results of the study and their discussion. Considering the fact that the leading role in the normal functioning of the implant belongs to the hygienic state of the oral cavity, we evaluated the dynamics of the Green-Vermillion's HI in patients with chronic catarrhal gingivitis within one year after implant prosthetics. The results of the revealed dynamics of Green-Vermillion's HI in 2 weeks, 1.5 months, 3 months, 6 months and 1 year after prosthesis are presented in table 1.

Table 1

Dynamics of Green-Vermilion's HI in patients with CCG in the long term after dental implantation (M ± m, points)

	2 weeks after prosthesis	1.5 months after prosthesis	3 months after prosthesis	6 months after prosthesis	1 year after prosthesis
Main group (n=18)	1,54±0.26*	1.48±0.24*	1.50±0.25*	1.52±0.26*	1.48±0.24*
Control (n=17)	2.38±0.25^	2.16±0.22^	2.20±0.25^	1.92±0.20^	1.90±0.22^
Comparison group (n=25)	1.52±0.18	1.48±0.14	1.44±0.15	1.38±0.16	1.40±0.14

Note: * - p <0.05 - in comparison with the control; ^ - p <0.05 - with respect to the comparison group.

As it is evident from the table, in patients with chronic catarrhal gingivitis, during the first year after implant prosthetics, professional hygiene was performed taking into account the initial hygienic state of the oral cavity (at the initial level of IG 1.88 ± 0.19 points - 2 weeks after the prosthesis, later every two months), a significantly better level of hygiene is observed in comparison with the control (patients with CCG who underwent progfessional hygiene in the first year after the prosthesis with a traditional multiplicity - 1 month after the prosthesis, then every three months), on average, 1.40 times (p <0.05). The IG values in the main group were in the range from 1.48 ± 0.24 to 1.54 ± 0.26 points, which corresponds to a "satisfactory" level of hygiene, in the control group - from 1.90 ± 0.22 to 2, 38 ± 0,25 points, which corresponds to the "unsatisfactory" level of oral hygiene. It should be noted that the values of the group

Green-Vermilion's index in the main group in patients with CCG and in those with healthy periodontium were commensurable (p> 0.05). The differences in the dynamics of Green-Vermilion's HI in the study groups indicate the effectiveness of the proposed multiplicity of professional hygiene in patients with CCG in the first year of implant function.

This was confirmed by clinico-radiographic data on the number of complications detected 1 year after implant prosthetics (table 2). It should be noted that in cases with healthy periodontium, no cases of detection of peri-implantitis or pathological loss of bone tissue in the area of the functioning implant were observed in this period.

Table 2

Complications 1 year after prosthetics on implants in patients of the study groups (absolute number/%)

		Peri-implantitis in the area of functioning implants	Pathological bone loss in the area of implants
Chronic catarrhal gingivitis (n=35)	Main group (n=18)	-	-
	Control (n=17)	1/5.88	1/5.88
Generalized periodontitis of I degree (n=30)	Main group (n=15)	-	-
	Control (n=15)	1/6.67	2/13.33
Generalized periodontitis of II degree (n=34)	Main group (n=17)	-	-
	Control (n=17)	1/5.88	4/23.53

As it can be seen from this table, the same situation was observed in patients with chronic catarrhal gingivitis of the main group. One case of peri-implantitis, which was clinically manifested by hyperemia, swelling of the mucosa and the presence of a bone pocket with a granulation tissue in the area of the functioning implant, was recorded in the control. In addition, one case of pathological loss of bone tissue was detected during the first year after prosthetics, which was characterized by bone resorption with a depth of 2.6 mm in the implant area.

Table 3

Dynamics of Green-Vermilion's HI in patients with GP of I degree in the long term after dental implantation (M±m, points)

	2 weeks after prosthesis	1,5 months after prosthesis	3 months after prosthesis	6 months after prosthesis	1 year after prosthesis
Main group (n=15)	1.54±0.22*	1.50±0.24*	1.49±0.23*	1.44±0.20*	1.46±0.24*
Control group (n=15)	2.40±0.25^	2.38±0.22^	2.42±0.24^	2.39±0.23^	2.44±0.26^
Comparison group (n=25)	1.44±0.15	1.40±0.12	1.42±0.15	1.46±0.20	1.43±0.16

Note: * - p <0.05 - in comparison with the control; ^ - p <0.05 - with respect to the comparison group.

The results of Green-Vermilion's IG dynamics' evaluation in patients with GP of I degree of severity one year after prosthetics on implants, which were carried out with professional hygiene of the oral cavity taking into account the initial hygienic state are presented in Table 3. As can be seen from this table, at all observation times, starting from two weeks after implant surgery, and then after 1.5 months, 3 months, 6 months and 1 year, in the main group (patients with GP of I degree with initial IH 2.34 ± 0.22 points, with professional hygiene in the first year starting with 2 weeks after implant prosthetics, then every 1.5 months) had significantly better level of health care according to the values of the group Green-Vermillion's HI, on average, 1.62 times compared to the control (p <0.05). Patients with GP of the first degree with the same initial level of hygiene served as control, but in these patients professional oral hygiene was performed with a traditional multiplicity - 1 month after the prosthesis, then every three months, respectively; the values of the Green-Vermilion HI were within 2, 38 ± 0,22 to 2,44 ± 0,26 points ("unsatisfactory" level of hygiene). In individuals with healthy periodontium (the comparison group) professional hygiene was conducted with a traditional multiplicity at the initial HI of 1.38 ± 0.14; in the observed long terms Green-Vermilion's HI was in the range from 1.40 ± 0.12 to 1.46 ± 0.20 points, which corresponds, as in the main group, to a "satisfactory" level of hygiene (p> 0.05). The differences in the dynamics of Green-Vermilion's HI in the study groups indicate the effectiveness of the proposed multiplicity of professional hygiene in patients with GP of the I degree of severity in the first year of implant

functioning, which is confirmed by the results of clinical and radiologic control one year after implant prosthetics.

As it can be seen from table 3, in the main group's patients with GP of I degree there were no cases of detection of peri-implantitis or pathological loss of bone tissue in the region of the functioning implant. One case of peri-implantitis, which was clinically manifested by hyperemia, swelling of the mucosa and the presence of a bone pocket with a granulation tissue in the area of the functioning implant, was recorded in the control. In addition, two cases of pathological loss of bone tissue were detected during the first year after prosthetics, which was characterized by bone resorption with a depth of 2.8 mm and 3.4 mm in the implant area.

The results of evaluation of Green-Vermilion's HI dynamics in patients with GP of II degree of severity one year after prosthetics on implants, in which professional oral hygiene was carried out taking into account the initial hygienic state, are presented in Table 4. As can be seen from this table, in patients with GP of II degree with the initial HI 2.81 ± 0.20 points, in which professional hygiene in the first year was carried out 1 week after implant prosthetics, then every month (the main group) at all observation times, starting from two weeks of functioning and then 1.5 months, 3 months, 6 months and 1 year later, the level of hygiene was significantly better than the control, on average, 1.61 times ($p < 0.05$). Patients with GP of the II degree with the same initial level of hygiene served as control, but in these patients professional oral hygiene was performed with a traditional multiplicity - 1 month after the prosthesis, then every three months, respectively; the values of the Green-Vermilion HI were within 2,44±0,25 to 2,44 ± 2,54±0,28 points ("unsatisfactory" level of hygiene). In individuals with healthy periodontium (the comparison group) professional hygiene was conducted with a traditional multiplicity at the initial HI of 1.38 ± 0.14; in the observed long terms Green-Vermilion's HI was in the range from 1.40 ± 0.12 to 1.46 ± 0.20 points, which corresponds, as in the main group, to a "satisfactory" level of hygiene ($p > 0.05$).

Table 4

Dynamics of Green-Vermilion's HI in patients with GP of II degree in the long term after dental implantation (M±m, points)

	2 weeks after prosthesis	1,5 months after prosthesis	3 months after prosthesis	6 months after prosthesis	1 year after prosthesis
Main group (n=17)	1.58±0.26*	1.59±0.24*	1.55±0.25*	1.50±0.22*	1.52±0.24*
Control group (n=17)	2.54±0.28^	2.54±0.26^	2.46±0.24^	2.49±0.23^	2.44±0.25^
Comparison group (n=25)	1.49±0.18	1.44±0.16	1.48±0.17	1.42±0.18	1.40±0.16

Note: * - $p < 0.05$ - in comparison with the control; ^ - $p < 0.05$ - with respect to the comparison group.

The differences in the dynamics of Green-Vermilion's HI in the study groups indicate the effectiveness of the proposed multiplicity of professional hygiene in patients with GP of the I, I-II degree of severity in the first year of implant functioning, which is confirmed by the results of clinical and radiologic control one year after implant prosthetics.

As evident from table 4, in the main group's patients with GP of II degree, same as in patients with CCG and intact periodontium, there were no cases of detection of peri-implantitis or pathological loss of bone tissue in the region of the functioning implant. One case of peri-implantitis, which was clinically manifested by hyperemia, swelling of the mucosa and the presence of a bone pocket with a granulation tissue in the area of the functioning implant, was recorded in the control. In addition, four cases of pathological loss of bone tissue wwere detected during the first year after prosthetics, which was characterized by bone resorption with an average depth of 3,2±0,56 mm in the implant area.

Conclusion

The analysis of clinico-radiologic control in the long-term follow-up (1 year after implant prosthetics) in patients with CCG, GP I and GP II degree, in which the multiplicity of professional oral hygiene was determined taking into account the baseline hygiene, is indicative of effectiveness of the proposed approach, which is confirmed by a significantly better level of hygiene, confirmed by Green-Vermilion's HI levels and the absence of complications in the form of peri-implantitis and pathological loss of bone tissue in of implants. The clinico-radiologic result can be explained by the fact that more effective hygiene of the oral cavity due to adequate multiplicity leads to timely eradication of parodontopathogens and normalization of the microbiocenosis. This reduces the influence of lipopolysaccharide on osteoclasts, which helps to reduce the intensity of osteoclastic bone resorption in the area of functioning implants.

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Реферати

ЕФЕКТИВНІСТЬ ДИФЕРЕНЦІЙОВАНОГО ПІДТРИМУЮЧОГО ЛІКУВАННЯ ХВОРИХ ПІСЛЯ ОПЕРАЦІЇ ДЕНТАЛЬНОЇ ІМПЛАНТАЦІЇ В ВІДДАЛЕНІ ТЕРМІНИ

Яров Ю.Ю., Силенко Ю.І.

Метою даного дослідження була оцінка ефективності запропонованого диференційованого підтримуючого лікування у хворих, яким була проведена дентальная імплантація, за результатами динамічного спостереження за клінічною картиною і даних лабораторних досліджень (мікробіологічних, імунологічних та реологічних), в залежності від вихідного рівня ІГ Гріна-Вермильйона, після етапу протезування на імплантатах, з використанням даних клініко-рентгенологічного контролю у віддалені терміни (1 рік).

Ключові слова: дентальна імплантація, гігієнічний стану, диференційоване лікування.

Стаття надійшла: 10.04.18 р.

ЭФФЕКТИВНОСТЬ ДИФФЕРЕНЦИРОВАННОГО ПОДДЕРЖИВАЮЩЕГО ЛЕЧЕНИЯ БОЛЬНЫХ ПОСЛЕ ОПЕРАЦИИ ДЕНТАЛЬНОЙ ИМПЛАНТАЦИИ В ОТДАЛЕННЫЕ СРОКИ

Яров Ю.Ю., Силенко Ю.И.

Целью данного исследования явилась оценка эффективности предложенного дифференцированного поддерживающего лечения у больных, которым была проведена дентальная имплантация, по результатам динамического наблюдения за клинической картиной и данных лабораторных исследований (микробиологическиих, иммунологических и реологических), в зависимости от исходного уровня ИГ Грина-Вермильона, после этапа протезирования на имплантатах, с использованием данных клинико-рентгенологического контроля в отдаленные сроки (1 год).

Ключевые слова : дентальная имплантация, гигиеническое состояния, дифференцированное лечение.

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