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The effectiveness of ozone therapy in splinting teeth.

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Abstract: The purpose of this work is to study the condition of periodontal tissues during splinting of teeth. During the period of immobilization, along with the main treatment, it is necessary to carry out a set of measures aimed at preventing the progression of inflammatory and destructive changes in periodontal tissues. To prevent complications, various general and local drugs are used, in particular antiseptics, antibiotics and sulfonamide drugs. In recent years, various methods of modern physiotherapy have become increasingly used to prevent complications in dentistry, which determined the main content of this study.

Key words: dental splinting, periodontitis, ozone therapy.

Complex treatment of periodontitis includes the use of various methods that improve the quality and effectiveness of therapy. One of these methods is splinting [1,2].

Splinting is carried out on the basis of clinical and radiological examination. The method is based on fixing mobile teeth using various splints. This procedure allows you to evenly distribute the chewing load on the dentition and effectively carry out conservative treatment.

In our work, we used the method of splinting with fiberglass tape, which has excellent moisture resistance and biocompatibility with human tissue [3].

Research objectives

• Treat patients using medical ozone while splinting teeth.

• Compare the study and control groups according to clinical study data after treatment.

Practical significance of the work

Prevention and treatment of complications in the oral cavity after prosthetics. Improving the quality of life of patients.

Material and research methods

The research was carried out at the Department of Orthopedic Dentistry of the Azerbaijan Medical University. A total of 60 patients (23 men and 37 women) aged from 60 to 75 years (average age 66.4±0.7 years) who complained of pain in the gums, bleeding, and tooth mobility were examined.

The subjects were randomized into 2 groups depending on the treatment regimen: main and control. The main group consisted of 34 people (14 men and 20 women).

In it, as an additional measure to prevent complications after splinting, ozone therapy was carried out together with drug treatment. The control group consisted of 26 people (9 men and 17 women). In this group, only medicinal measures were carried out as a therapeutic and prophylactic intervention. Both groups were statistically comparable in terms of age and gender of patients ($p>0.05$).

All patients of the main and control groups were treated according to the following scheme:

• Carrying out professional hygiene

• Removal of supra - and subgingival deposits

• Selective grinding

• Curettage of gum pockets. (after curettage Metrogil Denta and Imudon)

• Splinting ofteeth

In the main group, along with the established protocol, an ozone therapy procedure was carried out. Using a special mouth guard, preventive ozonation of the oral cavity was carried out using an Ozonytron XP-OZ ozonizer. All gum pockets of splinted teeth were also treated with ozone using special nozzles. The procedures were carried out on days 1, 4, 8, 12, 20 and 27 after application of the splint.

Clinical studies included: a patient survey, examination of the oral cavity, assessment of the condition of the gingival margin of splinted teeth.

The assessment was carried out by visual inspection. The color of the gums, its swelling, the

presence of gum pockets and bleeding were noted.

Clinical assessment of the effectiveness of orthopedic treatment was determined by identifying signs of inflammation of the gingival margin.

Statistical data processing was carried out using the statistical analysis software package Statistica v.6.1. using Student's t-tests for unrelated (t) and related (T) samples to compare means, and Pearson's Chi-square ($\chi 2$) test for relative values. Average indicators are presented as the arithmetic mean (M) and standard error (m), relative indicators - as %. The critical level of significance (p) when testing statistical hypotheses was accepted as < 0.05.

procedures. As can be seen from Table 2, the use of ozone therapy in the main group helps to relieve inflammatory processes.

Thus, hyperemia and edema occurred in 5 subjects (14%) of the main group and in 16 subjects (61%) of the control group ($p < 0.001$). Bleeding in 1 person. (2.9%) in the main group and in 10 people. (38%) in the control group ($p < 0.001$). Comparing the data of the indicators of these groups, we can confidently say that the use of ozone therapy reduces the incidence of complications by 4-5 times.

Such positive dynamics of changes in indicators

Table 1

Frequency of occurrence of the main symptoms of periodontitis in the examined patients before treatment, abs. (%)

Symptom	Patient groups	
	Main group (n=34)	Control group (n=26)
Hyperemia	29 (88%)	22 (84 %)
Edema	29 (88 %)	22(84 %)
bleeding	21(62%)	19 (73 %)
Tooth mobility	19 (56%)	16 (62 %)

Research results

When examined in the main and control groups before immobilization of teeth, various symptoms of damage associated with splinting the frontal group of teeth with a glass ionomer splint were revealed (Table 1).

As can be seen from Table 1, the most common symptom was hyperemia and edema (in the main group - 88%, in the control group - 84%). In 62% of patients in the main group and 73% of the control group, bleeding and

in the main group demonstrates the relevance of the preventive use of ozone to prevent the development of complications after splinting.

The influence of ionized oxygen takes energy metabolism in tissues to a qualitatively new level. Microcirculation is normalized, cellular and humoral immunity is activated. In addition, ozone has a detrimental effect on pathogenic microorganisms.

This is due to the antimicrobial and anti-

Table 2

Frequency of occurrence of the main symptoms of periodontitis in the examined patients one month after the end of treatment, abs. (%)

Symptom	Patient groups	
	Main group (n=34)	Control group (n=26)
Hyperemia	29 (88%)	22 (84 %)
Edema	29 (88 %)	22 (84 %)
bleeding	21 (62%)	19 (73 %)
Tooth mobility	19 (56%)	16 (62 %)

tooth mobility were detected in 56% of those examined in the main group and 62% in the control group. It should be noted that before splinting, there were no significant differences in the prevalence of complications between the groups ($p>0.05$).

A clinical study revealed that the reaction to splinting was significantly mitigated after ozone therapy

inflammatory properties of ozone. Today, ozone is widely used in dentistry for the treatment of periodontal diseases and oral mucosa[4,5]. Such properties of ozone make its use in dentistry very relevant.

In our opinion, the use of ozone therapy will significantly improve the results of splinting and will have a beneficial effect on the condition of the gum pockets.

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Ефективність озонотерапії при шинуванні зубів.

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Метою роботи є дослідження стану тканин пародонту при шинуванні зубів. У період іммобілізації поряд з основним лікуванням необхідно проводити комплекс заходів, спрямованих запобігати прогресуванню запально-деструктивних змін у тканинах пародонта. Для запобігання ускладнень застосовують різні засоби загального та місцевого застосування, зокрема антисептики, антибіотики та сульфаніламідні препарати. В останні роки для профілактики ускладнень у стоматології все ширше використовують різноманітні методи сучасної фізіотерапії, що й визначило основний зміст даного дослідження.

Ключові слова: шинування зубів, пародонтит, озонотерапія.

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