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CHANGES IN PERIODONTAL MICROCIRCULATION IN PATIENTS WITH ARTIFICIAL CROWNS

Pardayev D. S.

Rashidov R. A.

Said Kamil K.

Dadabayeva M. U.

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It is the circulatory system that first adapts to the new conditions of functioning of the homeostatic system, which is manifested by the development of vascular reactions at the level of the microvasculature. Among the early signs of the presence of pathological processes are metabolic changes resulting from disturbances in the supply of tissue as a system of arterioles, venules, capillaries, arteriolo-venular anastomoses, and lymphatic structures. One of the most frequent complications that directly affect the result of prosthetics is gum recession. According to different authors, its prevalence ranges from 45.5% to 85.1% in the adult population[3;4]. Researchers agree that the frequency of gum recession increases with age, which requires a special approach when planning orthopedic treatment. A similar situation is observed in patients already on orthopedic treatment with non-removable orthopedic structures. The frequency of periodontal complications in prosthetics with artificial crowns, the initial manifestation of which is gum recession, reaches more than 50%[6]. In this regard, the purpose of our study was to study the indicators of microcirculation in patients with gum recession as an independent form of periodontal disease and in patients wearing artificial crowns.

To identify patterns characterizing tissue circulation in the studied clinical settings, 30 patients (10 men and 20 women) aged 26 to 67 years were examined. There are systemic periodontal diseases. A total of 77 teeth were examined. Studies of periodontal microvasculature indicators were conducted both in teeth with clinically healthy periodontal tissue, teeth with gum recession, and in teeth with artificial crowns. In addition, each patient recorded the presence or absence of inflammatory periodontal diseases in the form of focal or systemic periodontitis. As a method for assessing changes in the microvasculature, we used laser Doppler flowmetry as one of the most informative and modern diagnostic methods, which allows us to obtain the most complete data on the perfusion indicators of uriferic tissues. Microcirculation studies were carried out using the laser analyzer of capillary circulation LACK-01, which is based on the Doppler effect that occurs when registering the races The signal of the helium-neon laser reflected from the tissue under study. To study the blood supply to the periodontal tissues, the parameters of perfusion inside were recorded by the oral method. At the same time, the boron sensor was fixed to the next section of the tooth by clamping with a soldered tube. The result of the measurements was a rotation of the graphic images of the microcirculatory processes and indexamemicrculation in the study area.

Thus, based on the study of the obtained histograms, it can be concluded that the distributions of the values of the microcirculation index in all groups differ from the normal ones, especially

by the pronounced asymmetry of the poly modality. Such heterogeneity of the variable series can be associated with individual features of the structure of both the microvasculature and the mucous membrane as a whole. In particular, the recorded indicators of tissue perfusion may depend on the degree of angiogenesis, the number of arteriolar anastomoses and the level of the vascular network relative to the surface of the mucous membrane. In this regard, non-parametric statistical methods using the non-parametric W-criterion Of Wilcoxon-Mann-Whitney were used to analyze the data. Descriptive statistics for each group were summarized and charted.

Analysis of the data obtained showed that, on average, the value of the microvailatory index for the group of teeth with gum recession in the presence of localized periodontal disease (median45.3) was generalized to the remaining groups. with gum recession in periodontal disease (median36) was lower than in other groups. A pairwise comparison of groups using the nonparametric W-test of Wilcoxon-Mann-Whitney was carried out. The significance level $p=0.05$ was considered significant. Therefore, the significance level of $p<0.05$ indicates that the probability of incorrect acceptance of the hypothesis of group differences is less than 0.05.

According to the data of the result 5-10, it can be concluded that the values of the microvailculatory index for groups 2 and 3 are statistically different at the level of significance $p<0.05$, while the remaining groups with the selected equal significance are indistinguishable from the Value of the microvailing index on average were lower in the 3rd group (median of the 2nd group-45.3, median of the 3rd group-36). that in patients with focal periodontitis, the progression of gum recession leads to the activation of compensatory mechanisms, increased nutrition and an increase in the degree of tissue angiogenesis.Patients with systemic parodontitis inflammatory changes are manifested by vasodilation, increased permeability with the development of perivascular edema, which leads to disorders of trans capillary metabolism and the subsequent development of tissue hypoxia. These changes are characterized by a decrease in tissue perfusion and a decrease in microcirculation.

Thus, the patterns identified in the study allow a more complete assessment of the etiology of the development of gum recession: on average, 1.26 times higher in individuals with gum recession, while the presence of systemic forms is associated with a decrease in microcirculation rates. .