

THE EFFECT OF TEMPORARY SPLINTING OF TEETH ON THE FUNCTIONAL STATE OF THE DENTAL SYSTEM IN PARODONTAL DISEASES

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In parodontal diseases, functional and morphological changes develop in all elements of the dental system.

The purpose of our study is to identify the possibility of restoring the functional state of the dental system in chronic generalized periodontitis at the stage of temporary splinting.

Material and methodology. The study of the functional state of the periodontal vascular system and masticatory muscles was carried out in 60 patients aged 25 to 55 years suffering from generalized chronic periodontitis accompanied by grade I — II and grade I dental mobility.

The examination was carried out according to the usual method, electromyography of the masticatory muscles and reparodontography modified by V. N. Kopeikin were used among the functional methods [!]. The biopotentials of the chewing and temporal muscles were recorded simultaneously from the right and left sides using cutaneous electrodes fixed to the motor points with a Band-Aid.

Electromyograms (EMG) were performed with the interelectrode resistance of the identity of their placement during repeated studies, a coordinate grid made of transparent plexiglass was used.

The study was performed with arbitrary chewing of a hazelnut kernel weighing 800 mg. The EMG analysis determined the number of chewing movements and the time of one chewing period, bioelectric activity (BEA) and bioelectric rest (BEP), coefficient (K) — the ratio of BEA to BEP, and the

amplitude of biopotentials. The background condition of the masticatory muscles was studied, on the day of temporary splints and every 20 days in the morning, Periodontography was performed on a bipolar basis using a rheographic keyhole, the rheoparticle of the lateral incisors of the upper dried silver teeth, the elbow incisors of the upper jaw, the periodontal area was fixed for examination of the mucous membrane. the vascular system, at the time of the actual loading, as well as the patch patch. The background time was studied for 2 and 5 minutes after the nce. The force load was placed along the top of a special device. When analyzing the RPG of the tical axis of the tooth for 10 seconds, the weight of the kg was reduced.

The shape of the caviar, the rheography of the mouth was calculated, the cutting and waves were calculated, the PTS amplitude was calculated). Indian index (Vascular tone index (PTS), (IE), dicrotic index (DI), diastolic elasticity index (DS). The study was performed before temporary splints were applied, and then after 20 days and 1.5-2 months of use. To register biopotentials during phi and rheoparodontography an electroencephalograph from the company "Medicor" was used with an 8-channel scanning speed of 30 mm/s.(Hungary)

Temporary splinting was carried out with removable plastic tires of their own design, which allow simultaneous stabilization of the arc, both vertically and parasagittally with a slight increase (within 1 mm) of the occlusal height.

The control group consisted of 16 practically healthy people with orthognathic bite, intact dentition and periodontal disease.

The results of the study. When registering arbitrary chewing in patients of the control group on EMG, a clear, synchronous alternation of the phases of BEA and BEP was revealed. In this case, BEA occurs in the rhythm of chewing movements and corresponds to them, the chewing period is 150.3 s, the number of chewing

movements is 18.52.6. BEA and BEP for temporal mice are 0.330.2 and 0.40 = 0.04 s, respectively, for chewing - 0.33 #0.02 and 0.39-0.03 s, the amplitude of biopotentials of temporal mice is 55062 MV, chewing - 48748.6 MV, K for temporal mice 0.8000.020, for chewing mice—0.859.0032.

Analysis of electromyographic data Studies in patients with periodontitis before the imposition of temporary splints showed that there are functional disorders in the masticatory muscles, which are expressed in a significant predominance of BEP over BEA, a violation of the synchronicity of the alternation of phases of BEA and BEP, the occurrence of additional activity during periods of rest is observed.

There is a decrease in the amplitude of the biopotentials of the chewing muscles corresponding to the side on which the teeth are most mobile or there is a defect in the dentition. The amplitude of the left temporal muscle is 103.2=10.8 MV, right — 94.77.2 mkB, left chewing 154.8+20.6 MV, right - 154.3=+18.0 MV. K has the following values: for the left temporal muscle 0.6220.028, for the right - ,5090.018, for the masticatory muscles — respectively 0.5910.026 and 0.547 0.031.

Rheoparodontographic examination in periodontitis revealed significant violations of the functional state of periodontal vessels:

RI was reduced by 29.4% ($P<0.05$) compared with the data of the control group, PTS was increased by 53% ($P<0.01$), IE — by 11% ($P<0.05$), CI was reduced by 20.4% ($P<0.05$), DS – by 14.6% ($P<0.05$) The shape of the RPG was different, we reduced it to three types: a) hypotonic (42.1%) - a steep ascending part, a rounded top, a dicrotic notch and a wave are pronounced and located in the lower third of the descending part, sometimes they can shift to the level of the iso-electric line;

b) hypertensive (44.7%) - steeply ascending part, rounded top, dicrotic notch and wave are weakly pronounced and located in the upper third of the descending part, they can also be located directly on the top, giving it a two-humped shape. With these types of curves, additional venous waves may appear on the descending part; d) sclerotic (13.2%) - a gentle ascending part, a rounded top, a gentle descending part, a dicrotic notch and a wave are slightly outlined.

A functional load of 1 kg directed along the axis of the tooth causes, compared with the initial level, a decrease in RI by 25.5% ($P<0.05$), an increase in PTS by 19.8% ($P<0.01$), a decrease in IE by 2.1% ($P>0.2$), an increase in CI by 3.3% ($P<0.01$), a decrease in DS by 8.6% ($P<0.05$)

The shape of the curve changes roughly, numerous venous waves appear on both the ascending and descending parts of the RPG, the top flattens, may become double-humped or resemble a rooster's crest in shape.

Under the influence of functional chewing load, spatial displacement of teeth occurs. In the presence of pathological mobility, the degree of such displacement increases significantly in the direction of least resistance, as a result of which there is a constant uniform compression of periodontal vessels and fibers in certain areas of the periodontal fissure, in other areas the periodontal fissure expands, which leads to tension of vessels and periodontal fibers.

The qualitative and quantitative characteristics of RPGs do not return to their original values by 5 minutes of the recovery period. RI remains increased by 12.5% ($P<0.05$), PTS — by 14.8% ($P<0.01$), IE increased unreliably, DI - by 17.9% ($P<0.01$), and DS decreased by 9.5% ($P<0.05$). This fact indicates a decrease in the compensatory mechanisms of the vascular system.

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