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# HEMODYNAMICS OF THE ABUTMENT TEETH PARODONT IN COMBINED DENTITION DEFECTS

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**BACKGROUND.** One of the factors disturbing functional and structural condition of parodont tissues is traumatic overload of the teeth [1, 5, 6]. Methods of instrumental diagnosis, particularly rheography, introduced into dental practice allow us to estimate functional condition of parodont tissues as well as the efficiency of the treatment. There is evidence on significant circulatory disorders in the parodont in traumatic overloads [1, 2. 3]. A.J.Tagiev revealed circulatory changes in the parodont of the teeth-antagonists in restricted defects of the dentition (absence of 1-2 teeth). Little is known on the character of parodont blood circulation in traumatic overload of the frontal teeth region in distal dentition defects. This issue is of great importance for the following prosthesis taking account of compensatory capacity of the parodont that has suffered no mastication load for a time. Analysis of the literature alongside of our clinic observation supported an existing view on the presence of local circulatory disorders in dentition defects. Local functional factors also had great influence on the development of a focal parodontal lesion. Presence of local disorders in the dentition defect region is connected with a prolonged and more frequent rhythm of mastication load and its unidirectional nature. All this is due to progressive changes in blood circulation, occurrence of inflammatory and congestive phenomena in the parodontal tissue. Changed condition of parodontal tissue functioning in a dentition defect region favors a further development of the pathological process in the parodont. The aim of this paper was to study blood circulation of the intact and partially affected dentition, and in functionally dosed loads.

**MATERIALS AND METHODS.** 76 patients aged 17 to 35 years with partial dentition defects and 37 ones with intact dentitions (1 control group) were examined. Defects in the frontal region (2 group) were detected in 32 patients, in lateral one - 25 and defects in the dental curve corner were in 19 subjects (3 group). Condition of the parodontal tissue was judged from clinic and X-ray examination. The group under study included mainly patients without pathologic changes related to the parodont. Examination of parodont functional condition both in dentition defect and antagonists regions was carried out by rheoparodontography using special recording device and electrodes developed by our department co-workers, K.B.Mavlyanov and I.N.Zalevsky (Certificate N689 of 26.09.87). Tetrapolar rheography was conducted with a rheoplethysmograph KPG-202 and a recorder N-338-4m. Simultaneous records OF ECG in the 2n lead and periferal vessels (fingers) rheograms were also taken/ Analysis of rheoparodontography (RPG) curves was made according a technique worked out it CRIS (Central Research Institute of Stomatology) [7]. Test load with a gnathodynamometer (up to 5 kg) was used a functional test. Statistical comparisions were made by Student's t - criterion.

**RESULTS AND DISCUSSION.** The findings showed that rheoparodontography in the control group was nearly indentical to that described in the Literature. In this case vessels tone index (VTI) was equal to 13.8 (2.26%, periferal

resistance index (PRI) - 81.9 (5.03%). Functional tests carried out caused an increase of the curve amplitude in 5-10 sec, and in 5=6 min an initial pattern of this curve was restored. In partial absence of the teeth in the frontal region (2 group) RPG curves were similar to those in tract dentition with rare exceptions. An descending portion of RPG was steep, dicrotic wave of was placed in the middle of the curve. Though dicrotic wave of RPG was placed in the middle of the curve but it was somewhat smoothed compared with control group. VTI was 17.3 (1/8% and PRI - 92.7 (3.8% which pointed to the fact that vascular tone tended to increase as distinct from control group. RPG of 3 group patients took a number of features : an ascending part of the curve became more gentle, peak rounded off, dictrotic wave was smoothed and shifted towards the peak which was indicative of marked local circulatory disorders in parodont tissues as well as hampered outflow and inflow in region under study. Figures also showed significant vascular tension : VTI - 22.1 (2/1%) and PRI - 101 (4.03%). Use of the functional tests in the 3 group resulted in increasing the amplitude in 3-5 min, and in some cases the reaction lasted up to 25-30 min. Complex RPG analysis in partial defects of the dentition clearly traced the functional changes in the parodont vessels, that is, vascular tone was increased. These changes were more pronounced in lateral teeth absence than in defects of the 1 and 2 groups. It is belived that there was under loading in the defect region. Mastication load was a main functional load in this case that caused vessels tone to relax and resulted in functional hyperemia in parodontal tissues.

**CONCLUSION.** So, presence of functional changes in parodont blood supply is undoubtedly an indication for restoration of the partial defect of the dentition. This, in turn, will contribute to timely prevention of the development of distrophic processes in the parodont and secondary deformations in dento-maxillary system.

CAUCASIAN DENTAL NEWS № 5 / 2002

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# FUNCTIONAL CONDITION OF THE PARODONT VESSELS IN PARTIAL DEFECTS OF THE DENTITION

*R.N.Nigmatov*

Hemodynamics of the intact and affected parodont in partial dentition defects in rest and functionally dosed loads was studied by rheography. 76 patients aged 17 to 35 years were examined. 32 of them had partial defects in the frontal region, 25 in the lateral teeth region, 19 in the dental curve corner and 37 patients had intact dentition and orthognatic occlusion. The findings showed that rheoparodontography in the control group was nearly identical to that described in the literature. In partial absence of the teeth in the frontal region the marked local circulatory disorders in the parodont tissue were revealed as well as hampered outflow and inflow in region under study as distinct from control group. A vessels tone increase were more pronounced in the absence of lateral teeth than in defects of the frontal region/ It is believed that there was underloading in the defect region. These results ware confirmed in using functionally dosed loads. Therefore the presence of functional changes in parodont blood supply is undoubtedly an indication for restoration of the dentition partial defect with dental prostheses.