

DIAGNOSTICS IN ORTHODONTIC TREATMENT IN PATIENTS WITH DIFFERENT GINGIVAL PHENOTYPE AND MALOCCLUSION

Grudyanov A., Arsenina O., Nadtochiy A., Karpanova A., Popova A.

Central Research Institute of Dentistry and Maxillofacial Surgery – Moscow – Russian Federation

Currently, there is a significant increase in the number of patients seeking orthodontic treatment, and thereafter the number of periodontal complications of periodontal after orthodontic treatment increases. The reason for these situations is defective, or insufficiently correctly carried out diagnostics - the wrong definition of the gingival phenotype.

To improve the quality of orthodontic treatment of patients with different periodontal phenotypes by using clinical and laboratory methods, ultrasonic scanning, cone-beam computed tomography.

60 patients aged 19 - 25 years with malocclusion were divided into 2 groups: 30 – with a thin gingival phenotype (A), 30 – with thick phenotype (B). Clinically phenotype was measured by the colorimetric probe – white, green, blue colors (Hu-Friedy). The thickness of the gingiva was measured by MyLabTwice ultrasonic device (Esaote). The condition of the alveolar bone of the jaws of all patients was assessed using cone-beam computed tomography.

According to the scanning in group A gingival thickness amounted to 0.75 ± 0.3 mm ($p < 0.005$), in group B - 1.9 ± 0.4 mm ($p < 0.005$). Cone-beam computed tomography in addition to the differences of the bone thickness showed that 69% of A group had dehiscence and 17% had fenestrations, in group B – 20% of dehiscence, 3% of fenestrations.

The clinical evaluation of the gingival phenotype does not allow adequate planning of orthodontic teeth movement. Ultrasonic evaluation of gingival thickness minimizes the risk of recessions. Cone-beam computed tomography presents the significantly increased information on the thickness of bone structures on all surfaces. Integrated use of these methods allows to optimize the choice of rational methods of orthodontic intervention and the limits of moving teeth and buccal inclination. This improves the efficiency of orthodontic treatment in general and prevents deep damage to the periodontal structures.