

OPTIMIZATION OF THE SELECTIVE TOOTH GRINDING PROTOCOL IN PATIENTS WITH GENERALIZED PERIODONTITIS UNDER T-SCAN SYSTEM CONTROL

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Objective. To improve the efficacy of comprehensive treatment for patients with generalized periodontitis by optimizing the selective tooth grinding protocol based on an objective analysis of occlusal relationships using the T-Scan digital occlusal analysis system.

Material and Methods. The study involved 20 patients (aged 35 to 55 years) diagnosed with Stage I–II generalized periodontitis in the remission phase. All patients underwent selective tooth grinding during the supportive therapy phase. The examination protocol included:

Clinical evaluation of periodontal tissue status (PMA index, PI index, periodontal pocket depth).

Identification of premature contacts and occlusal interferences using the traditional method (articulating paper, 40–100 µm).

Digital occlusal analysis (T-Scan Novus).

Occlusal adjustment was performed according to the Jankelson method with modifications, focusing on eliminating traumatic occlusion and normalizing the masticatory load vector.

Results. Primary T-Scan analysis revealed the presence of pronounced hypercontacts in 100% of the subjects, 35% of which were non-detectable using standard articulating paper. The mean occlusion time before adjustment was 1.8 ± 0.4 seconds, indicating instability of the centric relation. As a result of the optimized selective grinding under digital control:

A balanced load distribution between the right and left sides was achieved ($50\% \pm 3\%$ ratio).

Occlusion time was reduced to the physiological norm (< 0.2 seconds).

Elimination of the "lever effect" in the molar region resulted in a reduction of pathological tooth mobility by 1–2 degrees on the Miller scale in 75% of the patients.

At the 6-month follow-up, stabilization of the alveolar crest height (based on radiographic data) and the absence of inflammatory signs in the marginal periodontium were observed.

Conclusions. The application of the T-Scan system within the selective tooth grinding protocol allows for the objectification of the occlusal adjustment process, eliminating operator subjectivity. The optimization of occlusal relationships contributes to the resolution of traumatic articulation symptoms, normalizes microcirculation in periodontal tissues, and significantly prolongs the period of remission in generalized periodontitis. Traditional occlusal indicators must be supplemented with digital monitoring to achieve functional balance within the stomatognathic system.

References

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