REFINING THE SELECTIVE TOOTH OCCLUSAL ADJUSTMENT PROTOCOL IN GENERALISED PERIODONTITIS MANAGEMENT

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Aim

This study aimed to enhance the clinical outcomes of comprehensive periodontal therapy in patients with generalised periodontitis by optimizing the selective tooth grinding protocol through objective occlusal evaluation using the T-Scan digital occlusal analysis system.

Materials and Methods

The study enrolled 20 patients aged 35–55 with Stage I–II generalised periodontitis in the remission phase. All participants underwent selective tooth grinding during the supportive treatment phase. The diagnostic and therapeutic workflow included:

- **Periodontal assessment:** Evaluation of periodontal status using the PMA index, Periodontal Index (PI), and probing pocket depth.
- **Conventional occlusal analysis:** Identification of premature contacts and occlusal interferences using standard articulating paper (40-100 m).
- **Digital occlusal analysis:** Precision measurement via the T-Scan Novus system.
- **Occlusal adjustment:** Implementation of a modified Jankelson technique aimed at eliminating traumatic occlusion and realigning masticatory force vectors.

Results

Initial T-Scan diagnostics revealed premature occlusal contacts in 100% of participants, 35% of which were completely undetected by traditional articulating paper.

Prior to adjustment, unstable centric occlusion was evident, with a mean occlusion time of 1.8 pm 0.4.

Following digital-guided selective tooth grinding:

- Bilateral force distribution achieved balanced equilibrium (50 % pm 3% weight distribution between the right and left sides).
- Occlusion time decreased to second , reaching physiological norms.
- Elimination of the "lever effect" in the molar region led to a 1-2 degree reduction (Miller scale) in pathological tooth mobility among 75% of patients.
- At the 6-month follow-up, radiographic evidence confirmed alveolar crest height stabilization, with no clinical signs of marginal periodontal inflammation.

Conclusions

Integrating the T-Scan system into selective tooth grinding protocols objectifies occlusal adjustment by eliminating operator subjectivity. Optimizing occlusal contacts mitigates traumatic articulation, normalizes periodontal microcirculation, and extends remission periods in generalised periodontitis. Computerized occlusal analysis should complement traditional diagnostic tools to establish functional harmony within the stomatognathic system.

References

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