Comparative Analysis of Hawley and Essix Removable Retainers: Impact on Streptococcus and Lactobacillus Tooth Plaque Levels in Orthodontic Patients

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ABSTRACT

Introduction: The retention phase of orthodontic treatment is crucial for maintaining the achieved results. Removable appliances are commonly used during this stage, with vacuum-formed devices such as the Essix appliance gaining popularity recently. This study aimed to explore the impact of both Hawley and Essix removable retainers on Streptococcus mutans and lactobacillus levels in dental plaque among orthodontic patients.

Methods and Materials: This retrospective cross-sectional investigation involved 20 patients who had completed their fixed orthodontic treatment and needed retention appliances. Plaque sampling was performed from the removable appliance and enamel surface of the first molar at debonding and 15, 30, and 60 days after debonding. T-tests were used to analyze the data obtained.

Results: The research revealed a notable initial increase, followed by a significant decrease in Streptococcus mutans and lactobacillus in both cohorts. At any designated study time points, no considerable variance was observed between the Hawley and Essix groups ($p > 0.05$).

Conclusion and Discussion: Hawley and Essix appliances showed similar Streptococcus mutans and lactobacillus loading levels. However, the Essix appliance offers advantages such as ease of construction, better aesthetics, and lower cost. Therefore, it can be considered the preferred choice during the retention phase, as it performs similarly to the Hawley appliance in stabilizing treatment results.

Keywords: Lactobacillus, Orthodontics, Removable orthodontic appliances, Streptococcus mutants

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