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Bacteremia induced by acrylic and clear removable orthodontic retainers

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Introduction: Wearing orthodontic retainers after comprehensive orthodontic treatment is a regular practice. This makes an opportunity for the bacteria to enter the blood stream during the procedure. The fact behind the bacteremia is that the wires of acrylic removable retainer causes trauma to the buccal mucosa, gingival or even the alveolar mucosa and may introduce bacteria and subsequently bacteremia may occur. Other explanation is that when inserting removable retainer, bacterial deposits on the tooth surface may be pushed into the gingival sulcus by the pushing effect of the retentive clasps of removable retainer.

Aim of study: This study is aimed to investigate the incidence of bacteremia in orthodontic patients after inserting clear and acrylic removable retainers and to compare the colony forming units between both types of retainers.

Materials & methods: Forty-one subjects with an age range between 8-18 years from both genders were included in this study. Only 34 subjects were suited to this research. Eighteen subjects received acrylic retainer and the other sixteen received clear orthodontic retainer. For each subject blood sample were taken before and immediately (within one minute) after the insertion of the retainer. Blood Broth cultures were done on the samples to assess the presence of bacteremia. Post-insertion bacteremia was found in regarding the acrylic retainer, 12 cases (66.67%) acrylic retainers, whereas only 2 cases (12.5%) was found in clear retainer. There was highly significant difference (P-value=0.001) in the colony forming unit per ml of blood between both groups, being higher in acrylic one.

Conclusion: Removable retainer used in orthodontic retention presents a significant cause of bacteremia.

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