

Orthodontic brackets removal: morphological in vitro evaluation

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Debonding procedure is a fundamental stage in the orthodontic treatment (1). Adhesive removal should lead to a complete polished enamel in order to prevent the plaque accumulation and enamel injures (2). Aim of this study is to evaluate in vitro by use of Scanning Electron Microscopy (SEM) the enamel surface after the bracket removal and the enamel polishing with four different techniques. Two groups of teeth, group A (n=12) and group B (n=12) were evaluated. The images were analyzed by the Image J software. After the debonding procedure the two groups were sub-categorized in four groups (1A, 1B, 2A, 2B 3A, 3B and 4A, 4B, n.=3). The discriminant between the two main categories was the use of a magnification system (Group A) during the polishing stages. From the qualitative and quantitative images analysis the most conservative technique resulted to be the use of tungsten carbide bur, followed by the final polishing using the soft-polisher tip for composites. In group A, the percentage of the residual adhesive resulted 8% and the damages on the enamel surface showed to be 7%. In group B the percentage of the residual adhesive resulted 35% and the damages on the enamel surface showed to be 15%. This analysis showed how the use of a magnification system aids in significant way during the debonding procedures in the enamel surfaces' preservation.

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References

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Keywords

Dental debonding; Scanning Electron Microscopy (SEM); enamel surface.