

Title: Evaluation of surface roughness and bacterial adhesion After finishing procedures in temporary crown materials

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Received Date: December 30, 2022 Accepted Date: January 02, 2023, Published Date: May24, 2023

It is important to use a temporary restoration until the treatment is finished in order to protect the prepared teeth and ensure the patient's comfort during the construction of fixed restorations. Today, polymethyl methacrylate, polyethyl methacrylate, urethane dimethacrylate and bis-Acryl resins are used as permanent temporary restoration materials. Polymerization in these materials can be activated chemically, by light or by both chemical and light. In recent years, temporary restorations have also been produced by forming pre-polymerized resin blocks industrially with Computer Aided Design/Computer Aided Manufacturing (CAD/CAM) technique. The aim of this study is the ideal finishing process of temporary crown materials; it is to prepare restorations in the most ideal way by detecting surface roughness and bacterial adhesion parameters. It is planned to prepare 144 samples from 6 different temporary crown materials that will be used in the study. Samples from each group of temporary materials were divided into two subgroups (n=12). After finishing the samples, surface roughness values were measured using an optical profilometer. Surface roughness values were measured and compared after applied surface treatments. Scanning electron microscope (SEM) analysis was performed for one sample from each group. A bacterial adhesion test was performed to determine whether there was bacterial involvement on the surfaces of the samples. As a result of our study, it was observed that there was less bacterial involvement in the polishing samples. The most bacterial involvement was observed in the polyethylmethacrylate control and bis acrylic composite control group. In addition, intra-group surface roughness was increased after polishing in all groups except polymethylmethacrylate.