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Veneers, Crowns, and Inlay Bridges after Orthodontic Therapy: a Three Year Prospective Study

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Composite veneers, crowns, and inlay bridges after orthodontic therapy can reshape the dental arch. The main emphasis is given on esthetic appearance of the patient and protection of healthy teeth. The aim of the study was to evaluate the long-term treatment stability.

49 composite veneers, crowns and inlay bridges (20 patients) were inserted on the frontal teeth as a part of reshaping and reorientation of teeth after orthodontic therapy; diasthemic closure, microdontia of lateral incisors, reshaping of canines, anodontia of lateral incisors, etc. Based on ADA recommendation a special card was prepared containing relevant information on the patients. Used materials were: Charisma, Artglass, (Kulzer) Ribbond, (Sigma Dental Systems) Targis, Vectris, (Ivoclar). Baseline examination was made one week and three years after therapy. Clinical assessments were carried out in accordance with the US Public Health Service System. The follow-up included: marginal ridge, marginal adaptation, anatomic form, caries presence, color match, cavo surface margin discoloration, surface smoothness and postoperative sensitivity.

In the three year period, marginal ridge contour and adaptation were excellent (100% alfa). Anatomic form was destroyed in 18.7%. The general contour of the restoration followed the overall contour of the teeth in 81.3%. In our study no evidence of caries was found. The color match was darker and translucent in 31.2 %, and marginal discoloration was seen in 12.5%. The entire surface of each restoration was smooth with marked spot relief in 62.5%.

The results demonstrate that composite resin and reinforced polymers are an effective method for long-term stable treatment.

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Comparison of Tearing off and Impact Load Resistance of Selected Phosphate and Glassionomer Cements

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Cements used for seating fixed dentures are expected to have some definite resistance to tearing off and impact loads. It seems that these features may significantly influence the effective adhesion of a crown or bridge. For final seating of dentures both phosphate and glassionomer cements, which are a more recent invention, are used.

The aim of this work was to compare two cements from the phosphate group with two cements from the glassionomere group with respect to their tearing off resistance and resistance to impact loads.

The experiment was conducted in vitro. In the test for tearing off resistance Osteopant implant was used as the abutment. The crown was a cast chrome-nickel substructure. The Raustein FM 250 was used for registration of this phenomenon. Six tests for tearing were conducted for each cement.

A special device was constructed to test resistance to impact loads. The abutment was made of brass. After coating with a layer of varnish the substructure was contoured as a wax pattern and then cast in Remanium CS alloy. This metal substructure had additional handles for easier manipulation. Six tests were made for each material.

When analyzing the results we found significant differences between the values of tearing resistance of the cements from the two groups (the average tearing resistance for 1. Harv. Phosp. 183.3 N; 2. Poscal 273.5 N; 3. Rely X 27.8 N; 4. GC Fuji I 19 N). Significant differences were also observed when impact load resistance was tested.