

## CLINICAL EVALUATION OF THE USE OF PACKABLE COMPOSITES IN CLASS II SANDWICH RESTORATIONS

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Development of modern dentistry promoted application of new groups filling materials. In this research we present results of our own experience with packable composites.

**The aim of this research** is improvement of efficiency of treatment of caries of permanent teeth.

### **Materials and methods.**

Design of the research: simple randomized trial in parallel groups according to the clinical report of ADA instruction of research of composite materials for restoration of a lateral group of teeth (1989).

### Criteria of inclusion:

- age of patients - 20-25 years;
- permanent vital molars;
- Class II;
- presence of all molars with occlusal and proximal contacts
- good mental and physical health

### Criteria of exception:

- deep subgingival edges of carious cavities (impossibility of full isolation of an operational field);
- noncarious diseases;
- acute inflammatory processes of soft tissues of an oral cavity and a periodontal membrane;
- patients with allergic reactions on methacrylate and other components of composite materials;
- decompensated general diseases.

The procedure of treatment, its positive sides and possible complications were accounted for patients. The informed consent have been received before the beginning of the research.

The patients have been distributed on groups by the procedure of randomisation with the help of tables of casual numbers. 60 carious cavities were filled (20 cavities in each group).

### The reasearching groups of filling materials:

- 1 group - QuixFil (Dentsply DeTrey),
- 2 group - SureFil (Dentsply DeTrey),
- 3 group - Solitaire (Heraeus Kulzer).

### The research report included:

- complaints, the anamnesis, the examination; radiographic examination; the diagnosis; criteria of inclusion and exception; the informed consent; randomization;
- anesthesia, professional hygiene
- preparation of carious cavity;
- using of section matrix system;
- final finishing and polishing procedures by using fine- and ultrafine – granulation burs and finishing points with polishing paste.

Two examiners, whose technique had been calibrated, re-evaluated the restorations 6, 12 months later.

The examiners assessed each restoration according to modified U.S. Public Health Service (USPHS) criteria for anatomical form, marginal adaptation, marginal staining, axial contour, proximal contact and secondary caries [1]. Alfa and Bravo scores indicate clinically acceptable and successful restorative treatment. Restorations receiving Charlie and Delta scores, which indicated clinically unacceptable and unsuccessful restorative treatment, had to be replaced.

**Results.** After follow-up of 12 months the results of re-evaluation showed the absolute frequency of clinical success (Alfa and Bravo scores). SureFil showed 100% successful results (Alfa) in all criterions. This material was hard in condensation. Solitaire showed good (Alfa) marginal integrity in 85% of restorations and 15% of Bravo results; all Alfa scores of other criterions. The material is poorly polished. Also it possesses excellent ability to condensation. Dentsply DeTrey has offered QuixFil as SureFil's replacement. But QuixFil showed 100% Bravo scores of all criterions.

### **References:**

1. Cvar JF, Ryge G. Criteria for the clinical evaluation of dental restorative materials. U.S. Department of Health. Education and Welfare. Washington: U.S. Government Printing Office; 1971. U.S. Public Health Service publication 790-244.