Clinical performance of Class I/Class II restorations with Cention N

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Objective: To evaluate the clinical performance of a new ion-releasing polymer-based powder/liquid material (Cention N) in permanent posterior teeth.

Material & Method: In 61 patients 41 Class I and 20 Class II restorations were placed by a single operator with Cention N without using a dental adhesive thus paying special attention to a retentive cavity preparation design. At baseline (1 week after placement), 6 months and 12 months after placement the restorations were independently evaluated by two calibrated examiners using the FDI criteria for the clinical evaluation of dental restorative materials. Only restorations for which baseline, 6-month and 12-month data were available were taken into consideration.

Results: At the 6-months recall, 12 patients dropped out, and at the 12-month recall another 5 patients, mainly due to inability of the patient to keep the appointment. At the 1-year recall 44 patients could be examined. None of the restorations exhibited caries at the margins, retention loss or material fracture. However, there was one restoration with reversible pulpal pain and one restoration with a cusp fracture. For all parameters that are related to marginal quality (staining, gaps, fractures, irregularities), there was a statistically significant decrease of the gradings from baseline to the 1-year examination (non-parametric Friedman-Test, p<0.05). For each of the aforementioned parameters there was one restoration with a FDI grading of 3 (clinically satisfactory). The other restorations were either rated clinically excellent (grade 1) or clinically good (grade 2).

Conclusions: At the 1-year recall, restorations with Cention N had an acceptable clinical performance although no adhesive had been used.