

POSTER

Minimal invasive CAD/CAM hybrid-ceramic restorations: Preliminary clinical results

Area: Dental Materials

University/Department:

Center for Dental Medicine, Freiburg/Department of Prosthetic Dentistry

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Presenter:

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Objective:

Preliminary-evaluation of a 5-year prospective clinical investigation on survival-rate and long-term behavior of CAD/CAM hybrid-ceramic minimal invasive restorations on premolars and molars. The clinical procedures and results of the present study will be displayed in an extensive representative case.

Materials:

103 posterior teeth of 33 patients were restored with hybrid-ceramic (VITA ENAMIC, Vita Zahnfabrik) minimal invasive restorations (45 inlays and 58 fullveneers/onlays). All hybrid-ceramic restorations were fabricated with the Sirona CAD/CAM system (Cerec AC Bluecam/InLab, Sirona). Minimal invasive defect-oriented preparation designs were applied. All restorations were adhesively luted with a dual-polymerizing composite (Syntac*/Variolink II*, *Ivoclar Vivadent). Clinical reevaluations were performed at baseline and 6, and 12 months after insertion of the restorations according to the modified USPHS-criteria. Absolute failures were demonstrated by Kaplan-Meier survival-rate.

Results:

After an observation time of 1 year, survival rate of hybrid-ceramic inlays, fullveneers and onlays was 100%. Secondary caries did not occur. Marginal adaptation and marginal discoloration of all restorations were clinically satisfying. Color match and the anatomic form were predominantly rated as Alpha for both restoration forms for the given observation period. All hybrid-ceramic restorations demonstrated a significant increase of Bravo ratings in the criteria surface roughness ($p < 0.001$) after 12 months.

Conclusion:

Within the limitation of the present clinical study the tested CAD/CAM hybrid-ceramic material revealed promising results for inlays, onlays and posterior fullveneers. Due to the high edge stability of the hybrid-ceramic its use is particularly indicated for minimally invasive restorations with thin restoration margins. Clinical long-term data is needed to confirm the present results