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TITLE: Clinical Evaluation of Chair-Side Fabricated Posterior Partial-Crowns - 36-Months Results

PREFERRED PRESENTATION TYPE: Oral

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ABSTRACT BODY:

Objectives:

Zirconia-containing lithium silicate (ZLS) ceramics are a new material group, characterized by a high mechanical capacity and good optical properties. Up to now, data on the clinical performance of this type of restorations are sparse. Based on this background, CAD/CAM-fabricated monolithic partial ZLS crowns were evaluated in a practice based prospective study.

Methods: Between October 2013 and August 2014, 71 patients (45 female/26 male, age: 49.0±13.0 years) were restored with 92 partial crowns. All abutment teeth were vital or sufficiently endodontically treated and asymptomatic. The patients did not show any signs of craniomandibular dysfunctions. The monolithic restorations were fabricated chair-side (Cerec SW 4.2/Cerec MC XL) from a ZLS ceramic material (Celtra Duo, Dentsply Sirona Restorative, Konstanz, Germany). The restorations were milled, glazed after intra-oral try-in and adjustment of the occlusal and proximal contacts. Adhesive cementation was performed in the total-etch technique with one of two dual-curing composite materials (Celtra Duo Cementations System, Dentsply Sirona, Konstanz, Germany vs. Variolink, Ivoclar/Vivadent, Schaan Liechtenstein). The following modified USPHS parameters were evaluated during annual follow-up examinations: retention, color match, marginal discoloration, secondary caries, anatomic form, marginal adaptation, surface texture. Moreover, the parameters "time-dependent survival" (in situ criterion), and "success rates" (event-free restorations) were evaluated according to Kaplan-Meier.

Results:

68 patients with 17 premolar and 71 molar partial crowns (80 vital/8 endodontically treated abutments) attended annual follow-up examinations (observational period: 36.8±2.4 months. At the 36 months follow-up examination, 86 restorations were in situ (survival rate: 97,7%). Two restorations failed completely (1 tooth fracture, 1 fracture of a restoration). No masticatory problems or thermal sensitivity were reported. One clinical intervention was necessary (endodontic treatment) to maintain function (overall success rate (complication-free restoration): 96.6%).

Conclusions:

Chair-side fabricated ZLS crowns show a good initial clinical performance. However, for a final evaluation of this new material, clinical data from studies with longer observational periods are required.

TABLE TITLE: (No Tables)

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TABLE FOOTER: (No Tables)

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KEYWORDS: ceramics, partial crown, survival, success, cad/cam.

AWARDS:

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