

Up to 27-years clinical long-term results of chairside Cerec 1 CAD/CAM inlays and onlays.

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Abstract

The objective of this follow-up study was to examine the performance of Cerec 1 inlays and onlays in terms of clinical quality over a mean functional period of 25 years. Out of 200 Cerec 1 inlays and onlays placed consecutively in 108 patients in a private practice between 1989 and early 1991, 141 restorations could be reevaluated in 65 patients after up to 26 years and 10 months. All ceramic inlays and onlays had been generated chairside using the Cerec 1 method, and had been seated adhesively using bonding composite. At follow-up examinations, the restorations were classified based on modified United States Public Health Service (USPHS) criteria. According to the Kaplan-Meier analysis, the success rate of Cerec 1 inlays and onlays dropped to 87.5% after up to 27 years. In 19 patients, a total of 23 failures were found. Of these failures, 78% were caused by either ceramic fractures (65%) or tooth fractures (13%). The reasons for the remaining failures were caries (18%), and endodontic problems (4%). Three-surface restorations had a significantly higher failure risk ($P < 0.05$) than one-, two-, and four-surface restorations, and restorations in premolars presented a lower failure risk than those in molars. The survival probability of 87.5% after up to 27 years of clinical service of Cerec 1 computer-assisted design/computer-assisted manufacturing (CAD/CAM) restorations made of Vita Mark I feldspathic ceramic proved to be highly acceptable in private practice.

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