Dentine-bonded resin composite (Retroplast) for root-end filling: a prospective clinical and radiographic study with a mean follow-up period of 8 years.

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AIM: To evaluate treatment outcome after using a resin composite (Retroplast, RP) in combination with a dentine-bonding agent (GLUMA) as root-end filling material after 1 year as well as after more than 5 years (final examination). Also, the influence of various pre-, intra- and postoperative factors on the treatment outcome was studied. METHODOLOGY: All patients (87) undergoing root-end resection consecutively treated by root-end filling with RP on an incisor, canine, pre-molar, or first molar (87 teeth, 118 roots) were initially enrolled in the study. RP was applied on the entire resected surface that was prepared to a slightly concave shape and after conditioning with EDTA and GLUMA. The treatment outcome involving subjective, clinical and radiographic parameters was evaluated after 1 year and at the final examination. A total of 27 patients (36 roots) were excluded from the study because of unavailability of follow-up (19) and extraction of the operated tooth for reasons other than failed surgery (8). Consequently, 60 patients (82 roots) were included in the final material. The mean follow-up period at the final examination was 8 years (range: 6.5-9 years). RESULTS: The radiographic evaluation at the final examination revealed that 77%, 5%, 7% and 11% of the treated roots were characterized by complete, incomplete, uncertain and unsatisfactory healing, respectively. A total of 95% of the roots classified as completely healed at the 1-year control were also completely healed at the final examination because of displaced or lost RP-filling. Moreover, 60% of the roots with uncertain healing at the 1-year control demonstrated complete or incomplete healing at the final examination. Evaluation of the influence of various pre-, intra- and postoperative factors on the treatment outcome revealed that the radiographic classification at the final examination was exclusively influenced by the radiographic classification at the 1-year control (P < 0.001). CONCLUSIONS: The present long-term study indicates that RP can be used for root-end filling with a successful treatment outcome.

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