Endodontic Spotlight

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Introduction
Happy New Year! As we begin Volume 7 of Endodontic Spotlight, we will continue highlighting previously covered important and interesting articles. In this issue I've gathered together the studies that have focused on the importance of crowns. This research provides strong evidence to show just how critical full coverage is after root canal therapy. Hopefully this information can help convince patients who are uncertain about the recommended treatment plan to proceed with the crown!

Aquilino SA, Caplan DJ. Relationship between crown placement and the survival of endodontically treated teeth. J Prosthet Dent 2002;87:256-63.
This retrospective cohort study evaluated factors that affect the survival of endodontically treated teeth. 203 endodontically treated teeth that met the study inclusion criteria were randomly selected and the records were examined for characteristics that may affect survival. 129 teeth were crowned and 74 teeth were restored with a direct definitive amalgam or composite restoration. The authors found that, when controlling for other variables, endodontically treated teeth that were not crowned were lost at a 6.0 times greater rate than endodontically treated teeth that were crowned. In addition, they also noted that second molars and teeth with preexisting decay at the time of access were lost at a greater rate. *SUMMARY: Endodontically treated teeth that are not crowned are lost at 6 times the rate of teeth that are crowned.*

Nagasiri R, Chitmongkolsuk S. Long-term survival of endodontically treated molars without crown coverage: A retrospective cohort study. J Prosthet Dent 2005;93:164-70.
This retrospective cohort study evaluated the restorative survival of endodontically treated molars that were not crowned. 220 endodontically treated molars that had not received coronal coverage were analyzed and followed for 6 months to 10.2 years. Failure was defined as the tooth requiring additional restoration, tooth repair, or extraction, though teeth lost due to endodontic or periodontic reasons were excluded from this restorative study. The restorative survival rate for decreased dramatically over time with rates of 96%, 88%, and 36%, for 1, 2, and 5 years, respectively. As expected, teeth with greater amount of tooth structure remaining had a higher restorative survival rate. Restorations with direct composite survived better than those with amalgam or IRM. Overall, 6% (14/220) were deemed unrestorable and extracted during the course of the study. This is yet another study showing the importance of crowning teeth after root canal therapy. *SUMMARY: The restorative survival of endodontically treated molars that were not crowned was 96%, 88%, and 36%, for 1, 2, and 5 years, respectively.*

Salehrabi R, Rotstein I. Endodontic Treatment Outcomes in a Large Patient Population in the USA: An Epidemiological Study. J Endod 2004;30:846-50.
This is one of the largest outcome studies in endodontics. The authors measured the 8 year survival rate of 1,462,936 teeth receiving root canal therapy using the Delta Dental insurance

database. They found a survival rate of 97.1% and that, of the teeth that failed, 85% lacked full coronal coverage. These findings suggest that root canal therapy has a very high survival rate and that full coverage improves the likelihood of survival. This study provides strong evidence that justifies the need for a crown on a root canal treated tooth. *SUMMARY: In an insurance database study of 1.5 million teeth, 97.1% of the teeth survived at 8 years, and that, of the teeth that failed, 85% lacked coronal coverage.*

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