

Importance of Pre-Fabricated Stainless-Steel Crowns on Permanent Molars: A Case Report

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Introduction:

In America, 21% of children between the ages 6 to 11 and 59% of adolescents between the ages 12 to 19 have had dental caries in their permanent dentition [1,2]. If left untreated, these lesions will eventually progress and compromise the remaining tooth structure and pulp, which may require subsequent endodontic therapy. These large carious lesions in the permanent dentition are of major concern due to the chances of restoration failure, with secondary caries being the most common cause [3]. The type of restoration is important for the predictability of tooth survival [4]. Stainless-steel crowns (SSCs) have been shown to be an effective restorative material for large carious lesions in permanent molars, when compared to amalgam and composite [5,6]

Case Report:

A 6 year-old female patient presented to the pediatric dental clinic at University of Nevada, Las Vegas for a limited exam. Her chief complaint was that she was having tooth pain that has been keeping her up at night crying for the last month, pointing to tooth #19. Patient's mother denies any significant medical history. Patient has no known drug allergies and reports taking no medications. On examination, #19 had a large carious lesion in close approximation to the pulp and had no periapical pathology. The tooth was not sensitive to percussion nor palpation. There was no mobility present. The limited treatment plan for #19 was a MTA direct pulp cap and composite core build-up. Treatment was performed the same day, and then the patient was rescheduled for a comprehensive exam. Other caries were noted throughout the patient's dentition. #30 was in similar condition to #19. #30 was treated using an MTA direct pulp cap and composite core build-up, after the comprehensive exam. The patient's next appointment was scheduled for her other restorative treatment needs, which included SSCs on #19 and #30. The patient failed to show-up and would not return for another 5 years for more limited treatment followed by a comprehensive exam.

Discussion:

The transient nature of the patient did not allow for completion of treatment and adequate follow-up. On examination the core restorations on #19 and #30 failed over the 5 year period with most of the composite restoration missing on both teeth. It was observed that the primary teeth with the full coverage were still intact. This higher restorative success rate for SSCs is observed in the literature [5,6]. Secondly, #19 and #30 were still vital on pulp vitality testing. Radiographs revealed root formation was complete for both #19 and #30, as seen by the closing of the apical foramen. Dentin bridge formation was also detected on radiographic examination in close approximation to the MTA plugs.

Summary:

This case stresses the importance of continuity of care and use of full coverage restorations for teeth missing large amounts of tooth structure. It also demonstrates a successful case of vital pulp therapy.



Figure 1: #19 Immediate Post-op and 5 year follow-up radiographs



Figure 2: #30 Immediate Post-op and 5 year follow-up Radiographs

References

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