

Republic of Iraq
Ministry of High Education
University of Baghdad
College of dentistry



Evaluation of the influence of preformed metal crown ((Hall Technique)) on the managing of carious primary molars((a retrospective study))

A Thesis

Submitted to the Council of College of Dentistry
At the University of Baghdad, in partial Fulfillment of the
Requirement for the Degree of Master of Science in
Pediatric Dentistry

By

Waraf Muhsin AL-Yaseen

B.D.S

Supervised by

Prof. Dr. Ban Ali Salih

B.D.S. M.Sc.

Iraq- Baghdad

2014A.D

1435A.H

Abstract

Background: When prevention of dental caries fails, and a child is exposed to the risk of pain and infection, the disease must be managed to reduce this risk. There is a growing evidence supporting more 'biological approaches' for managing dental caries in primary teeth. The Hall Technique is one of the biological approaches for managing caries in primary molars which involves sealing caries beneath preformed metal crowns (stainless steel crowns). The crown is cemented over the tooth without the use of local anesthesia, caries removal, or tooth preparation. The clinical steps for the Hall Technique are straightforward but, as with all dental care provision, appropriate treatment planning for the procedure requires skill. The Hall Technique offers another method of managing early to moderately advanced, active carious lesions in primary molars, with good evidence of effectiveness and acceptability.

Aims of the study: This study was conducted to assess the possible local factors that might happen along with using this novel technique regarding the possible adverse effect of the increased occlusal-vertical dimension and the condition of the surrounding tissues. Also to assess the correlation between the rate of the successful outcome with the caries extension towards the pulp. In addition to evaluate the cost- effectiveness of the Hall Technique in comparison with the conventional restorations. Finally to estimate whether this technique can be performed efficiently by both the specialized dentists and general practitioners in terms of putting the appropriate treatment plan based on the radiographic assessment.

Material and methods: A retrospective research was conducted, standardized bitewing radiographs of 100 patients between 3-9 years old were evaluated for marginal bone changes. The distance between the cemento-enamel junctions and the alveolar bone



crest was measured. The dentine was evaluated as well regarding the existence of clear band of dentine and the extension of the caries towards the pulp of the tooth.

- The cost effectiveness was conducted by creating a scenario of the possible outcomes for the treatment decision whether it was Hall preformed metal crown or traditional restoration. Incremental cost-effectiveness ratio was calculated to find the saving amount value.
- A panel consisting of five general practitioners and three specialized dentists was asked to evaluate twelve bitewings radiograph presented to them and give their opinion whether these radiographs are suitable for Hall Technique or not.

Results: The result of this presented study showed that there is decreasing in the distance between the cemento-enamel junction and alveolar bone level at the Hall PMCs treatment side between the before and after insertion periods. It also showed that there's no different bone level changes between the Hall preformed metal crown treatment side and its contra-lateral side regardless of its condition (Hall preformed metal crowns, no Hall preformed metal crowns).

- A high rate of successful treatment is highly associated with observing a clear band of dentine but it is not associated with the carious extinction toward the pulp as long as a clear band of dentine can be seen.
- The Hall Technique is more cost-effective by making more cost saving and more gained teeth. The Hall Technique can be performed efficiently by both the general practitioners and the specialized dentist.

Conclusion: according on the results of this research it can be settled that there are no adverse effects of using Hall preformed metal crowns regarding the increase of occlusal-vertical dimension and the periodontal condition also the Hall Technique is more cost-effective and can be performed by specialized dentists as well as the general practitioners.

