**Critically Appraised Topic (CAT)**

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| **Project Team:**  |
| **8A-3** |
| **Project Team Participants:**  |
| **Tiffany Huynh, Adam Gottschalk, Steven White, Guillermo Aceves**  |
| **Clinical Question:** |
| **What are ways to manage molar cairies in pediatric patients?** |
| **PICO Format:** |
| **P:** |
| **Pediatric patients with caries** |
| **I:** |
| **Hall crowns** |
| **C:** |
| **Other restorative techniques** |
| **O:** |
| **Managing molar caires** |
| **PICO Formatted Question:** |
| **In a population of pediatric patients with caries, how effective are Hall crowns compared to other restorative techniques for managing molar caries?**  |
| **Clinical Bottom Line:** |
| **Systematic reviews and meta-analyses support the use of Hall crown when indicated to manage molar caries in the pediatric population. Compared to directly placed dental restorations like dental amalgams, composite resins, compomers, and RMGIs, Hall crowns are a promising restorative option with high acceptability, increased longevity, lower failure rates, and are less technique sensitive.**  |
| **Date(s) of Search:**  |
| **11/08/2020** |
| **Database(s) Used:** |
| **PubMed** |
| **Search Strategy/Keywords:** |
| **Limited to meta-analyses; systematic reviews, article publication primarily within last ten years, article suggestions from specialty leader (Dr. Gungor)**  |
| **MESH terms used:** |
| **Hall crowns, primary molars, child** |
| **Article(s) Cited:** |
| Altoukhi DH, El-Housseiny AA. Hall technique for primary molars: A review of the literature. *Dent J.* 2020 Jan 17;8(1):11 Badar SB, Tabassum S, Khan FR, Ghafoor R. Effectiveness of hall technique for primary carious molars: A systematic review and meta-analysis. *Int J Pediatr Dent.* 2019 Sept-Oct;12(5):445-452.Innes NPT, Ricketts D, Chong LY, Keightley AJ, Lamont T, Santamaria RM. Preformed crown for decayed primary molar teeth. *Cochrane Database Syst Rev.* 2015 Dec 31;2015(12):CD005512. |
| **Study Design(s):** |
| Systematic review, systematic review and meta-analysis, and systematic review |
| **Reason for Article Selection:** |
| **Each article had a high level of evidence (systematic review or meta-analysis) and addressed the PICO “Intervention”** |
| **Article(s) Synopsis:** |
| **The study design of Altoukhi et al. was a systematic reviw. The primary objective of the study was to provide an updated search on the Hall Technique definition, indications and contraindicatinos, advantages and concerns, successes and failures, cost effectiveness, and how the technique compares to conventional treatment options. The electronic databases of “Cochrane Database”, “PubMed”, “Science Direct”, and “Google Scholar” were used to locate relevant studies between 1991 and 2018. According to the results, the two year survival rate of the Hall technique and conventional crown technique were 94.5% and 96%, respectively, with no significant difference. The success rate of the Hall technique was 94.5% after one year and 67.6% after five years. In comparision, the three year survival rate of composite restorations and glass ionomer resterations were 78% and 65%, respectively. In addition, the Hall technique was found to be more accepted and preferred by parents and the dentist perfoming the treatment. In conclusion, the Hall technique can be an effective addition to the clinician’s range of treatment options of the carious primary molar.** **In Badar et al., the the aim of the study was to assess the outcome of the Hall technique on primary carious molars compared to conventional dental restorations. The study design was a systematic review and meta-analysis. After the exclusion criteria five and three studies were used, respectively. The systematic review revealed the Hall Technique is equally effective to alterntive treatment optinos that are more aggressive and depend on patient cooperation. Hall crowns also exhibited considerably higher survival rate and success rate compared to directly placed restorations. The meta-analysis revealed the Hall technique is far more successful than comparative treatment modalities (RR: 5.5, p-value<0.001). One main limitation of this study was the study did not look at the patients’ or dentists’ attituedes toward the Hall technique. Overall, it can be concluded that the Hall Technique significantly outperformed the conventional restorative techniques for treating primary carious molars.** |
| **Levels of Evidence:** (For Therapy/Prevention, Etiology/Harm) See <http://www.cebm.net/index.aspx?o=1025>[x]  **1a** – Clinical Practice Guideline, Meta-Analysis, Systematic Review of Randomized Control Trials (RCTs)[ ]  **1b** – Individual RCT[ ]  **2a** – Systematic Review of Cohort Studies[ ]  **2b** – Individual Cohort Study[ ]  **3** – Cross-sectional Studies, Ecologic Studies, “Outcomes” Research[ ]  **4a** – Systematic Review of Case Control Studies[ ]  **4b** – Individual Case Control Study[ ]  **5** – Case Series, Case Reports[ ]  **6** – Expert Opinion without explicit critical appraisal, Narrative Review[ ]  **7** – Animal Research[ ]  **8** – In Vitro Research |
| **Strength of Recommendation Taxonomy (SORT) For Guidelines and Systematic Reviews**See article **J Evid Base Dent Pract 2007;147-150**[x]  **A** – Consistent, good quality patient oriented evidence[ ]  **B** – Inconsistent or limited quality patient oriented evidence[ ]  **C** – Consensus, disease oriented evidence, usual practice, expert opinion, or case series for studies of diagnosis, treatment, prevention, or screening |
| **Conclusion(s):** |
| **Based on the findings of the literature, I would recommend that our patient be treated using the Hall technique. Because the child is not very cooperative in the dental chair and has a fear of needles, it would be challenging to treat the child with a conventional restoration. Therefore, the Hall technique would be indicated in this case. Furthermore, compared to conventional restorations the Hall technique has promising results showing high acceptability and longevity, having low failure rates, and being the most cost effective treatment option.** |