Restoring Class II Cavities in Primary Molars: The Challenges and Choices

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Abstract:
Restoration of class II cavities is a challenge to the clinician as it involves rebuilding of the marginal ridge, one of the strongest areas of the tooth. Today the dental practitioner is confronted with an array of materials from which to select for each situation. The aim of this paper is to highlight the challenges in restoring the class II cavities in primary molars, to highlight the unique features of each restorative material so that the clinician can decide to apply the right material in the right situation.

Restorative decisions for the primary dentitions are taken based on different objectives and expectations than those for the permanent dentition. Various factors such as behavior related problems in children, caries risk, esthetics and anatomy of primary molars should be considered. Dentists should make a careful diagnosis, fully assess caries risk and design plans for management prior to making decisions to restore a tooth. One should remember that primary teeth have limited life expectancies. The restoration needs to be retained until the exfoliation of teeth. By matching the right restoration with expected life span of the tooth, one can succeed in providing a restoration that will never have to be replaced.

Anatomic considerations: The enamel and dentin thickness is lesser and pulp horns are higher resulting in smaller proximal boxes, thereby reducing the bulk of the restorative material. For proximal lesions with minimal involvement, slot or box preparation with minimal occlusal extensions is recommended so as to conserve remaining tooth structure. All restorations of given type placed in first primary molars exhibit a shorter survival time than those placed in second primary molars. The removal of a small carious lesion often compromises the structural integrity of first primary molars due to their size. The contact area is broad in primary molars and a relatively large truncated box is required to place the margins in self cleansing areas. This results in thin buccal and lingual walls with very little supporting dentin. Adequate pulp protection should be done after removal of all the soft caries. Inadequate pulp treatment can result in false failure of the restoration.

Esthetic considerations:
Dentistry has experienced a paradigm shift in the last 20 years. Longevity of restoration is no longer the primary factor in selecting a restorative material. Esthetics is given equal importance as it is often demanded by patients and parents. Adhesive materials due to their ability to bond to tooth structure and hence reinforce it coupled with esthetic properties have been widely used.

Diagnosis and caries risk assessment:
The caries risk of the patient should be considered before selecting the restorative material. High caries risk signifies greater risk for secondary caries. The caries risk indicators are: dmfs greater than child’s age, numerous white spot lesions, low