



Management of Acquired Enamel Hypoplasia Involving the Incisors and Molars: A Case Report

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ABSTRACT:

Molar and incisor (MIH) hypoplasia is a condition that effects permanent teeth. The dental tissues once formed and matured cannot be remodeled and thus hypoplasia gets evident on tooth surfaces. The patients presenting with MIH are mainly concerned with the aesthetic issues and the known prevalence of 3.9%¹. No significant local data available on MIH. Early diagnosis is important to detect the suspected cause of the disease at the time of formation of the dental tissues; signs and a symptom are different in each age group and also depend upon the underlying cause. Many treatment options are available for MIH. The present case report demonstrates a cost effective management using directly placed composite restorations. Patient was kept on a regular follow up.

KEYWORDS: Acquired enamel defects, Enamel hypoplasia, Molar incisal hypoplasia.

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INTRODUCTION

Enamel hypoplasia refers to a developmental disorder of tooth enamel that is characterized by an abnormal matrix formation. Clinically it presents as manifestation of yellow pits in the cervical and middle third of the teeth. Discoloration may also be evident. Compromised tooth structure causes sensitivity and rough surface favors retention of plaque. Research shows not only quality but the quantity of the tooth substance is also affected^{2,3}. According to the development there are two varieties of Enamel hypoplasia; hereditary and acquired. Both can affect either set of dentition. Ectodermal disturbance during embryonic period contributes to the hereditary type defect. This type of defect mainly confined to enamel. Acquired hypoplasia usually affects both enamel and dentin. Infections, exposure to chemicals, birth defects and medications are listed factors. The disturbance in nutrition (vitamin A, C and D) and viral infection are contributory to this variety of Enamel hypoplasia. Clinical

hypoplasia can be categorized as hypoplastic type or hypocalcified type.

Hypoplastic teeth show a rapid breakdown of the enamel, which can be extremely sensitive. This could manifest in few months while the tooth is still erupting. The hindrance in cleaning in a partially erupted tooth may be further complicated by hot and cold sensitivity. This often causes plaque retention and more prone to carious tooth decay. Usually first permanent molars are affected, exfoliation of primary molars does not precede their eruption, so children and parents are often unaware of their presence and thus they do not seek treatment until it is symptomatic. The sensitivity is not common among incisors as it is on molars, however they frequently affected esthetically⁴.

FEATURES OF ENAMEL HYPOPLASIA

- 1) Easy wear of enamel due to abnormal quantity.
- 2) Incisal edges and occlusal surfaces of molars may be discolored because of extrinsic staining.

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- 3) Fluorosis also damages the enamel during tooth development and exhibits tooth discoloration.

CASE REPORT

A 23 year old otherwise healthy female presented to our institution with the complaint of transient hot and cold stimuli in tooth 16 and 46. However, she was more concerned with the appearance of her front teeth and reported their form as unpleasing. For the presenting complaint of pain in 16 and 46, the patient was suggested RCT for both teeth. Root canal treatment was performed for the teeth and amalgam restoration placed. All records of the procedure were maintained. Her maxillary incisors and molars showed surface pitting associated with dark brown stains at incisal edges. A similar pattern was observed on the molars, where the buccal surfaces were pitted and loss of enamel has resulted in the formation of sharp cuspal edges. Mandibular arch was also involved which showed staining of incisors and molars similar to maxillary arch. History of the patient revealed extended use of medications in early childhood (around the age of 3 years) for fever. Her parents did not remember the condition or the name of the medicine given at that time. For management of her current problem of dental esthetics, various treatment options were discussed. Those include:

- 1) Full ceramic crowns for incisors and molars
- 2) Ceramic veneers for anterior and cast (or PFM) crowns for molars
- 3) Direct composite restoration for anterior and cast (or PFM) crowns for molars

All options were discussed with the patient and her family. Discussions led to adoption of direct composite veneers in the aesthetic zone while molars would be restored with PFM. Photographs were taken preoperatively. Teeth were scaled and polished to remove stains and to get the proper shade match of composite. Rubber dam was applied. Teeth were etched with 37% phosphoric acid for 20 seconds, washed with water, dried with air and universal adhesive (3M ESPE) applied. Then light curing composite (shade A-2 ;3M ESPE, NANOHYBRID) was placed in increments on the facial surface of teeth. Curing was done for 60 seconds as per manufacturer's instructions. The composite facing was polished using a polishing disc (3M ESPE). Post-operative photographs were taken to assure the quality of treatment. Patient was advised for PFM crowns for molar restorations. The patient was satisfied with the outcome and was kept on three months follow-up visits.

DISCUSSION

The causes of MIH are not well defined. Multiple factors have been associated with the condition. Children who are born, prematurely and those with poor general health or systemic conditions in their first three years may develop MIH⁵⁻⁶. While clinical evaluation revealed that mineralized structures are compromised as surface irregularities on defected parts favor the plaque retention which create hindrance in the management of esthetically compromised teeth⁷. Minimally invasive restorative techniques provided a conservative approach towards the management of compromised tooth substance⁷⁻⁸. Various approaches like: Enamel abrasion, Dental whitening/bleaching, composite veneering may be performed to manage MIH depending upon the on severity of disorder⁹⁻¹⁰. Tooth colored restorations are esthetically pleasing, as they match closely with the natural tooth shade¹⁰. Composites are not only the affordable modality but gives natural appearance. No patient discomfort is reported when using composites direct veneers. The rationale of restoring the hypoplastic defects is to redirect the forces during mastication (occlusion) and also to give patient self confidence in terms of aesthetics.



Pre operative



Post operative

Fig. (1).

CONCLUSIONS

The conservative rehabilitation of the enamel hypoplasia involving the incisor and molars, the direct composite veneers seems to be the most reasonable option to restore the esthetics. This is an acceptable and affordable treatment modality.

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