



Enamel hypoplasia in left maxillary permanent central incisor in a 8 year old female - A case report

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Abstract: Quantitative or qualitative defect in the synthesis of enamel is termed as enamel hypoplasia, clinically seen as depressions or grooves on the surface due to layer reduction. Pathognomonic features include symmetric manner and ring like defects. Early detection of these lesions would prevent further breakdown in enamel and thus providing better outcome in terms of esthetics and function. The complexity of the treatment procedures to be reduced before the lesions multiply and attain severity, thereby reducing the morbidity associated with the disease. In this scientific article, we highlight a clinical condition of enamel hypoplasia in relation to left maxillary central incisor 21 in a 9 year old female. The condition was managed in conservative manner of tooth colored restoration thereby restoring esthetics and function.

Keywords: Enamel, restoration, diagnosis, morbidity, hypoplasia

Introduction

Enamel is the hardest substance in the body due to its calcification or mineralization rate. Quantitative and qualitative enamel is produced by interaction between genetic and environmental factors. Hypoplasia might result due to any interruption in the above mentioned event. Etiology of hypoplasia includes malnutrition, deficiency in relation to vitamins/calcium, systemic conditions such as renal disease, hypoparathyroidism and hypothyroidism, fluoride or heavy metals intoxication and medications such as tetracycline [1, 2]. Clinical features include symmetric isolated or multiple ring like defects involving the teeth surface, differing from amelogenesis imperfecta which is of genetic origin [3,4]. Defects in the enamel has to be repaired as soon possible in order to

avoid permanent defect. Quality of life of the individual should be improved by elimination of such defects. Various factors such as etiology, patient age and disease severity play an important role. Chief complaints include mechanical stimuli, dental caries, sensitivity to cold and warm air and difficulty in mastication [5, 6]. In this scientific article, we highlight a clinical condition of enamel hypoplasia in relation to left maxillary central incisor 21 in a 9 year old female. The condition was managed in conservative manner of tooth colored restoration thereby restoring esthetics and function.

Case report

A female child aged 9 years, reported to the Department of Paediatric Dentistry and Orthodontics, with a complaint of irregular, ring like, whitish brown coloured surface in relation to left maxillary central incisor 21. Patient was conscious, oriented and afebrile. On history, it was noted that similar change was not present in the primary counterpart. Prenatal, post natal, past medical, dental, drug allergy and personal history were not relevant. Intraoral examination revealed whitish brown ring like depressions (hypoplastic lesions) on

the labial surface of 21 covering the incisal and middle third (see Fig 1). Complete and detailed oral examination was done. Oral prophylaxis done followed by oral hygiene instructions. Regarding the complaint, the affected surface was removed by bur, followed by proper isolation, application of all in one (etchant, primer, bonding) solution, drying after 20 seconds, light curing, incremental layers of shade matched composite and subsequent light curing, finishing, smoothing and finally polishing done (see Fig 2). The patient was also informed of subsequent follow up.



Figure 1. Preoperative clinical view (arrowhead)



Figure 2. Postoperative clinical view (arrowhead)

Discussion

Tooth sensitivity, dental caries, malocclusion, defective esthetics and function can occur due to enamel hypoplasia(7,8). Factors such as early detection, risk factor identification, dental caries anticipation, posteruption defect, remineralization, desensitization, restorations, extractions and follow-up maintenance. Formation of such lesions occur during pre and post natal period (9). Prevention of these lesions depend on the preventive measures. Cessation of the tooth breakdown and carious process is regulated by tooth regenerative agents such as calcium phosphate and fluoride, pit and fissure sealants, preventive resin restorations, tooth coloured restoration such as glass ionomer, composite, full coverage restorations such as stainless steel crowns, ceramic crowns, removable partial dentures, extractions followed by space maintainer if needed, acrylic blocks or custom made blocks for attrition followed by oral hygiene procedures and diet counselling [10, 11]. Genetically related enamel defects differ from the enamel hypoplasia. Restoration evaluation should be done periodically. Correct interception at the proper duration decreases the deleterious effects thereby restoring the lost esthetics and function.

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