RESTORATION OF ANTERIOR TEETH WITH DIRECT COMPOSITE VENEERS IN HEREDITARY ENAMEL DYSPLASIA

1MUHAMMAD SALMAN RASHID, BDS, FCPS-II (Trainee)
2ALI ALTAF, BDS, FCPS-II (Trainee)
3USMAN SHAHID, BDS, FCPS-II (Trainee)
4BADAR MUNIR, BDS, MCPS, FCPS

ABSTRACT

Amelogenesis imperfecta (AI) is a collection of inherited diseases that exhibit quantitative or qualitative tooth enamel defects in the absence of systemic manifestations. Also known by varied names such as Hereditary enamel dysplasia, Hereditary brown enamel, Hereditary brown opalescent teeth. This defect is of ectodermal in origin. The AI trait can be transmitted by either autosomal dominant/recessive, or X-linked inheritance. Genes implicated in autosomal forms are genes encoding enamel matrix proteins, namely: enamelin and ameloblastin, tuftelin, MMP-20 and kallikrein – 4. This report shows the less invasive treatment modality for the disease.

Key Words: Composit, Veneers, hereditary enamel dysplasia.

INTRODUCTION

Amelogenesis imperfecta is a hereditary disorder that affects the enamel of the dental enamel structure. This disease affects both the primary and permanent dentition resulting in poor development or complete absence of the enamel of the teeth.1,2

Amelogenesis Imperfecta include quantitative and qualitative enamel defect, sensitivity, unaesthetic appearance, reduced vertical dimension, multiple impacted teeth, congenitally missing teeth and root malformation.3 The disorder address with unaesthetic appearance, dental sensitivity and attrition.4 There are various classification systems for different amelogenesis Imperfecta type. The most commonly used of these are hypocalcified, hypoplastic, or hypomature.5

CLASSIFICATION AND FEATURES

Hypoplastic form of AI is characterized by thin enamel with yellowish-brown color, rough/smooth and glossy, square-shaped crown, lack of contact between opposing teeth. While histology of hypoplastic type is defect in enamel matrix formation.6-8 Hypocalcified form is the most common entity and is characterized by normal size and shape of clinical crown, softer enamel which wears down rapidly and can be removed by an instrument. Histologically defects in matrix structure and mineralization are seen.5,8

Hypomaturation type has normal thickness of enamel but it is softer than normal, while harder than hypocalcified type. Histologically, the studies show the alterations in enamel rod and rod sheath structures.6-8 Hypoplastic-hypomutation is associated with taurodontism in molars; the enamel is thin, mottled yellow to brown, and pitted. Teeth have enlarged pulp chambers.9

CASE REPORT

A female patient of 18 years old reported to the restorative department with the chief complaint of unaesthetic teeth. On clinical examination she had a moderate form of amelogenesis imperfecta with absence of the enamel. The teeth were stained dark yellow, had no deep carious lesions and the exposed dentine was relatively softer than the normal dentine. The teeth were vital, firm, and not tender to percussion. The periodontal tissues were not healthy.

Treatment objectives for this patient were set to be a) prevention of caries and gingivitis, b) improvement of esthetics, c) prevention of further deterioration of the remaining dentition and d) patient education and motivation. The patient demanded minimal cost for the restoration. The OPG showed enamel of similar thickness as dentine, which showed hypomaturation type of defect. The patient was first referred to periodontology department for scaling and advised to come back after 2 weeks. Preoperative pictures were taken at every stage. Now the less invasive plan was direct composite laminate veneers on anterior teeth.

A 1mm tooth was prepared for both maxillary and mandibular anterior teeth and the finish line was
extended interproximally. All the preparations were made without sharp line angles. A self etch composite bonding (3M ESPE) was used. Postoperative pictures were taken and patient was advised follow up after every three months.

DISCUSSION

Amelogenesis Imperfecta is an inherited disorder that mainly affects the form and amount of enamel formation. As both the primary and permanent dentition is affected, preventive measures should be started, even before the teeth erupt. The case mentioned showed teeth discoloration and no pulpal involvement. Surface pitting was also not evident. There are many treatment options depending on the several factors. Many clinicians suggest the full mouth porcelain crowns which may be aesthetically reasonable but may cause severe damage to periodontal health. Surrounding tooth structure is also compromised when preparation is made. Moreover, porcelain veneers, full coverage crowns, metal crowns all cause the food impaction and compromise the gingival health.

Direct composite veneers allow minimal tooth tissue removal and less invasive treatment. In addition to that, composite veneers have the advantage of being repaired at the chair side and require no laboratory support. Placement of these veneers provide the more acceptable results as various shades and opacifiers are available. Discoloration was the concern for composites as the use of small particle size generation reasonably mask the issue. After the review of literature, one can say that the direct composites veneers are also a very significant esthetic option in comparison to prosthetic replacement.

CONCLUSION

Cosmetic replacement from direct composite veneers allow less time on chair side. Reasonable results are achieved, moreover less tooth structure is compromised and periodontal health is also maintained.

REFERENCES