

# A Case Report of treatment of a 16-year old girl with Amelogenesis Imperfecta

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## I. CASE REPORT

Amelogenesis Imperfecta is a developmental disturbance that interferes with normal enamel formation in the absence of a systemic disorder. In general, it affects all or nearly all of the teeth in both the primary and permanent dentitions<sup>1</sup>. A 16-year old patient with a history of brown-stained teeth reported to the Dental office. She complained of stained teeth ever since it erupted and parents noticed similarly stained teeth with her deciduous teeth as well. On clinical examination the teeth were found to have yellowish to brown stains (internal) that did not remove with gentle probing. She was found to have Amelogenesis Imperfecta Hypoplastic Type (Witkop's classification)<sup>2</sup> with pitting and flakes of enamel chipping off on probing. The enamel exposed the underlying whitish dentine in some areas and made it sensitive to the patient. In terms of investigation, there was no DNA analysis done to isolate the defective gene, due to non-feasibility and non-compliance of the patient with regards to drawing blood. The condition was analyzed purely of the basis of clinical analysis. Since she had no other systemic abnormality, any syndrome(s) was ruled out. Her dental age was corroborated to her chronological age and she had complete set of 28 permanent teeth erupted with a Class I occlusion and no orthodontic anomaly recorded.

## II. TREATMENT

Since the patient was 16 years old and had complete set of permanent teeth with 2<sup>nd</sup> molars erupted and Class I Molar relation, Porcelain fused to Metal (PFM) crowns were chosen to provide respite to the patient in terms of aesthetics, masticatory abilities, relief of sensitivity and comfort and happiness<sup>4,5</sup>. The shade was chosen based on the skin tone of the patient<sup>6</sup>. The treatment was carried out in a phased manner- First, preparing the upper anterior teeth from canine to canine<sup>6</sup>, after injecting the required nerve blocks and then a coat of varnish was applied with cotton wool sticks to prevent sensitivity. Within 24 hours a 6-unit PFM crown and bridge was fabricated in the laboratory and cemented. This gave adequate psychological advantage to the patient and motivated her for further appointment(s). Then this was followed by the required nerve block, preparation of crown structure and cementation of the lower anterior segment with PFM crown and bridge and occlusion was established with the upper and lower 6-unit PFM bridges. Thereafter, the upper left posterior segment was prepared and cemented with PFM

crown and bridge followed by lower left posterior segment and occlusion was established. Followed by, upper right and lower right posterior segments and occlusion established. Within two weeks the entire set of PFM's were cemented. Occlusion was established, with good aesthetics and patient satisfaction was seen. Follow up was done for nearly up to 8 months post operatively and patient was given oral mouth rinses and was reiterated with the oral hygiene measures especially brushing technique and brushing frequency. After which patient moved to another location and was not in touch.

## III. DIFFERENTIAL DIAGNOSIS

This condition can be easily diagnosed as a fluorosis lesion but they can be clearly differentiated since AI cases have discoloration at random points or on all areas of the tooth as compared to teeth with fluorosis and family history wherein only one or few specific members of the family may phenotypically exhibit this condition whereas fluorosis is seen with all members of the family who may or may not be genetically linked, it is geographical. AI will affect all teeth similarly and can have a familial history. Fluorosis can mimic AI, but usually the teeth are not affected uniformly, often sparing the premolars and second permanent molars. A history of fluoride intake can aid in the diagnosis<sup>1</sup>.

The treatment for such conditions is best recommended after occlusion is properly established after eruption of all the permanent teeth.

## IV. COMMENT

Patient's oral condition was good due to adequate oral hygiene measures that was stressed and impressed upon periodically during the follow up of 8 months post operatively. There were instances of gingival inflammation due to non-compliance on part of the patient in maintaining oral hygiene but was rectified soon with adequate oral hygiene measures. The point to be learned from this case is that since multiple crowns and bridges have tendency for accumulation of food and can cause halitosis if not properly maintained and since they require quite a lot of maintenance and compliance from the patient, it would be better if individual crown(s) be given to the teeth which would be easier to maintain and would cause less accumulation of food and lesser tendency to cause halitosis and deterioration of oral health in general.

#### ACKNOWLEDGMENT

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#### ABBREVIATIONS

1. AAPD: American Academy of Pediatric Dentistry
2. AI: Amelogenesis Imperfecta
3. PFM: Porcelain fused to metal

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**Figure 1:** Pre operative image



**Figure 2:** Intra operative image



**Figure 3:** Post operative image