

Amelogenesis Imperfecta – Teeth for Life ?

Conservative Management of Amelogenesis Imperfecta

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Amelogenesis imperfecta (AI) affects the structure and appearance of enamel(1). Its clinical presentation varies from a mild form (Case 1) where there is some discolouration, roughness and pitting of the enamel to more severe forms (Case 2) where there is significant loss of enamel and extensive toothwear resulting in interdental spacing and loss of interocclusal space.

Patients with AI mainly complain of poor aesthetics. In more severe forms of AI, patients also complain of loss of function and sensitivity.

The biggest challenge restorative dentist face in rehabilitating these patients is trying to restore aesthetics and function whilst keeping the treatment as conservative as possible. The mainstay of treatment should be to prolong the life of the patient's own teeth and delay the need for extractions and subsequent replacement with conventional fixed, removable or implant retained prostheses. In order to achieve this goal a stepwise approach to treatment planning is required starting with the most conservative but aesthetically acceptable treatment.

The literature regarding treatment options is abundant with case reports which predominately describe the use of removable prosthesis and full coverage crown and bridgework. Complete crowns represent a predictable and durable aesthetic option, however, the disadvantage of this approach is that it is highly destructive. In milder forms of AI, porcelain veneers have been advocated to restore aesthetics and in more severe cases overdentures or overlay dentures have been advocated. Whilst veneer preparation is usually minimal it still requires preparation of a structurally compromised tooth at a young age. Placement of veneers during adolescence when gingival maturation is not complete can result in marginal exposure of the veneer in the future as the gingival tissues mature leaving an unaesthetic appearance. This subsequently results in the need for early replacement of the veneer which can further damage the tooth structure.

There is very little evidence regarding the use of composite resin in the management of AI(2, 3). With advances in composite bonding techniques this is one option that

should be considered earlier in the management of these cases. This still leaves the opportunity to consider more invasive treatment options at a later date.

This poster presents two cases of AI, which have both been restored conservatively using composite resin. Case 1 is restored with direct composite veneers and treatment for case 2 involved crown lengthening surgery of the upper anterior teeth, restoration of upper and lower premolar to premolar with direct composite at an increased occlusal vertical dimension and restoration of the molars with indirect composite onlays with a minimal preparation. The final result shows good aesthetic result and stable occlusal relationship with minimal tooth destruction.

Whilst initial results are promising further research is required into the longevity of composite restorations in Amelogenesis Imperfecta affected teeth. Turkun (2005) showed that 1 year post restoration with composite, only one tooth showed partial fracture of the composite(2). In both of the cases shown here the anterior direct composites have been in situ for at least three-six months with no signs of failure and good patient acceptance.

References:

1. Crawford PJ, Aldred M, Bloch-Zupan A. Amelogenesis imperfecta. Orphanet journal of rare diseases. 2007;2(17).
2. Turkun LS. Conservative restoration with resin composites of a case of amelogenesis imperfecta. Int Dent J. 2005 Feb;55(1):38-41.
3. Sabatini C, Guzman-Armstrong S. A conservative treatment for amelogenesis imperfecta with direct resin composite restorations: a case report. J Esthet Restor Dent. 2009;21(3):161-9; discussion 70.