

From a Dark Past to a Bright Future: Cosmetic Dentistry

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Dental esthetics, also known as cosmetic dentistry, is concerned with improving the appearance of smile and has become a popular topic among all disciplines in dentistry. Any kind of esthetic problem in childhood and adolescence can have a significant effect on psychosocial development and interaction with peers [1]. So, creating a perfect smile is one of the important objectives of the field. Esthetics in Dentistry is a philosophy concerned especially with the appearance of a dental restoration, as achieved through its color or form. In our dentistry, we come across several conditions that require aesthetic concerns such as white spot lesions, dental trauma, irregularly spaced or crowded arch. Dental caries can significantly alter the shape, color and structure of the teeth to cause esthetic problems. Restorations of such lesions have been an age old procedures which restores their form, function and appearance of teeth. Use of dental restorative material that would be identical to natural tooth structure, in strength adherence and appearance. These both factors should be complimentary to each other; only then the goal of restoration becomes successful. While functionality helps individual to use it in proper way while esthetics let him/her live confidently in society [2].

Restoration of teeth travelled a long way to reach in today's fast experimenting path of changing types and technologies in restorative materials to ensure proper function and best aesthetic in restored tooth. In earlier ages many primitive things like bamboo sticks, lead pieces were used to fill the defects. Later with the advent in metallic science, different metals find their way in restorations such as iron pieces. Gold restoration was a boon in this field. Dental amalgam has long been accepted as a most versatile restorative material owing to its low technique sensitivity, self sealing ability, longevity and cost effectiveness. However, cavity preparation for dental amalgam requires removal of significant amount of tooth structure in order to achieve a good retention and resistance form [3].

Esthetically, amalgam restorations are unsatisfactory and can cause dark staining of the tooth and a tattoo of the gingiva and buccal mucosa [4]. At the same time concerns were also raised regarding its safety due to potential mercury toxicity.

Owing to these concerns and ever increasing importance of esthetics and preservation of healthy tooth structure, there has been a constant demand for alternative materials that are esthetically pleasant and also follow the principle of maximum preservation of healthy tooth structure.

The first direct esthetic material was formulated in 1871 as silicate cement. This was the first direct semi esthetic restorative material. It had the advantage of high fluoride release but was also highly soluble in oral fluids [5].

In early 1970's, the newly introduced Glass ionomer cements offered several advantages as restorative materials such as ability to release fluoride and to chemically adhere to dental hard tissues which made them most suitable for primary dentition as these dentitions already have considerably less amount of hard tissues as compared to permanent dentition. However, in spite of their fluoride releasing abilities, GICs also had some inherent limitations like susceptibility to brittle fracture, moisture sensitivity, less wear resistance, flexural strength and less final finish. Giomers were discovered by *Matis et al in 2004*. This group of materials is more correctly described as composites with active filler particles. The material is composed of pre-reacted GIC particles within a resin matrix. It unites the chemistries of composite and GIC in an effort to combine the advantages of both materials, whilst minimizing the limitations of each. Based on the properties of Giomers, recent introduction of an "Alkasite" bulk fill restorative material, commercially available

by the name of Cention N has also marked its significance in the esthetic field [6]. With physical and mechanical properties comparable to amalgam and composite, it will soon be one of the most sought after restorative material by dentist's world over. Recently, nanotechnology got its place in dentistry. Dentistry also is facing a major revolution in the wake of this technology having already been targeted with novel 'nano-materials [5].

Over the years, various in vivo and in vitro studies have demonstrated the advantages & disadvantages of different esthetic restorative materials. While waiting for a unique and ideal esthetic restorative material, dentists still have to deal with a wide range of materials and techniques.

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