

A Patient Oriented ‘Aesthetico - Temperamental’ Approach to Treat Dental Fluorosis - A Case Report

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Abstract: Ceramic veneers are a more conservative and cosmetic treatment option for patients with dental fluorosis. Among the various materials used, lithium disilicate produces the thinnest veneers and has superior aesthetic characteristics. The concept of visagism is an aesthetico - temperamental approach, based on the theory of temperaments and involves designing of smile components with patient’s personality. The case report describes the rehabilitation of a patient with dental fluorosis by incorporating the concept of ‘Visagism’ in digital designing of the veneers.

Keyword: Veneers, Aesthetico - temperamental approach, Visagism

1. Introduction

A common cause of dental fluorosis is chronic ingestion of fluoride during tooth development [1]. According to World Health Organization, standard rate of fluoride of drinking water is 0.5–1 ppm. Fluoride content exceeding 1ppm leads to metabolic alterations in ameloblast leading to defective enamel formation [2]. Mild to moderate cases of fluorosis may be treated by bleaching and microabrasion. Ceramic veneers are the treatment of choice for moderate to severe cases of fluorosis due to their superior aesthetics and wear resistance.

The concept of ‘Visagism’ was introduced by French artist Phillip Hallwell. It involves creating a smile that is personalized and patient friendly. Later propagated by Dr BraulioPaolucci, this concept is based on Hippocrates ‘Theory of temperaments’. A patient’s personality can be incorporated in his smile. This concept is unique in the sense that the patient is equally involved in designing his own personalized smile [4]. This case report describes an, ‘aesthetico - temperamental’ approach to treat dental fluorosis by integrating concept of visagism and using CAD/CAM fabricated ceramic veneers.

2. Case Report

A 26 - year - old patient reported with a chief complaint of discoloured teeth. Clinical examination revealed generalised dental fluorosis (Fig.1). History revealed that he was a resident of Agra where the fluoride content of water was high. His siblings also exhibited the same clinical condition.



Figure 1: Preoperative view

Ceramic veneers were the best choice due to longevity, durability and superior aesthetics. The patient was friendly, exuded confidence and had an extrovert (Sanguine) nature. Considering the patient’s personality and applying the ‘theories of temperaments’ [5], the veneers were designed to have triangular shape to match his extroverted personality. The maxillo - mandibular diagnostic casts were mounted and evaluation of occlusion, over jet/overbite; tooth form and contours were done. The diagnostic wax up was done by designing the triangular shaped teeth according to patient’s personality. This design was further improved on the CAD software.

Tooth preparation

Minimal tooth preparation, involving only enamel, extending upto first premolars in both arches, was carried out as per prescribed guidelines [6]. Shade was selected using the VITAPAN classical shade guide. Finish lines were kept at equigingival margins to ensure correct positioning of veneers during luting of the prostheses [Figure 2 (a)], [Figure 2 (b)].

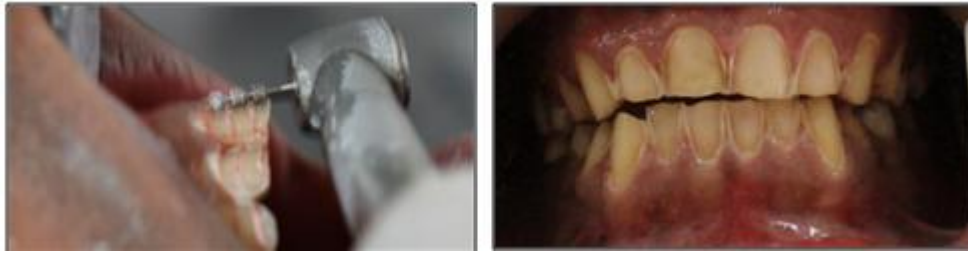


Figure 2: Tooth preparation (a) Lateralview; (b) Frontal view

Recording impression

Gingival retraction was done with ultracord (000). Final impression was made using Polyvinylsiloxane material (Zhermack Elite Hd, Dentsply, Germany).



Figure 3: Full arch impression using polyvinyl siloxane impression material

Temporization

Putty index of designed wax up was used for temporization with acrylic resin veneers of same shade. Temporization was done by spot etching on the facial surface using 37% phosphoric acid, followed by bonding agent application and light curing with LED light for 20 seconds.

Veneer Fabrication

The maxillary and mandibular casts were scanned in the extraoral scanner (Ceramil motion, AmmanGirrbach). Digital designing of the veneers was done with exocad software to conform to the patients personality [Figure 4 (a)]. Milling of the designed prostheses were done from zirconia reinforced lithium disilicate blocks (Vitasuprinity HT) [Figure 4 (b)]



(b)

Figure 4: a) Designing of veneers on CAD software; b) VitaSuprinity HT blocks



(a)

The temporary restorations were removed and tooth surfaces were cleaned with pumice. Then the fitting surfaces of the veneers were etched with 9.6% hydrofluoric acid (Porcelain Etch; Ultradent, South Jordan, Utah) for 1 minute and rinsed. Silane coupling agent was applied and air dried [7]. The prepared teeth were etched using 37% phosphoric acid (Total etch, Ivoclar Vivadent AG, Schaan, Liechtenstein) rinsed, and bonded. Dual cure resin cement (Variolink II, Ivoclar Vivadent, Schaan, Liechtenstein) was used for the cementation of ceramic veneers [Figure 5].



Figure 5: Variolink II resin cement

Residual gingival flash of the resin cement was removed. A flame - shaped fine diamond bur was used to finish the ceramic margins and to contour the embrasure surfaces. Flossing was performed to ensure interproximal contact patency. Ceramic polishing was performed using a series of polishing cups and points. The patient was satisfied with the final result (Fig.6)



Figure 6: Post - operative view

3. Discussion

Visagism, derived from the French word ‘visage’ (meaning - face), was never fully defined until it was explained by the artist Philip Hallawell [4]. Visagism is the process of creating a personalized personal image that conveys a person's sense of self. It allows dentists to determine the emotions and personality qualities patients want to portray through their looks, particularly their smile. It can be used to create a smile that combines the patient's physical appearance, personality, and desires. Uncovering the patient's personality traits to transform them into natural teeth shapes in psychodontofacial harmony is one of the most difficult problems in aesthetic rehabilitation. Tooth preparation for veneers is a minimally invasive technique. Ceramic veneers are the treatment of choice especially when aesthetics is a major concern. Vita suprinity blocks was chosen as the material of choice because of its excellent aesthetic quality and durability. Designing the shape and form of the teeth was done during the wax up. The design was digitally enhanced on the CAD software followed by milling on CAM machine. This has immensely improved the patient's overall aesthetics and made the patient confident and comfortable in his own skin. His teeth were finally in harmony with his personality.

4. Conclusion

Visagism is a revolutionary concept that integrates visual art principles to the creation of a personalised smile. The goal is to produce a smile design that reflects the patient's personality and way of life, while also ensuring that the restorations and the patient's physical appearance, values, and attitudes are ‘in sync’. Ceramic veneers have come a long way since its introduction to dentistry. Their superior strength and aesthetics have made them one of the most popular options for patients. Incorporating this ‘aesthetico - temporal’ approach paves a new path in smile designing and affords the patient a smile consonant with his personality.

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