

Esthetic Rehabilitaion of Discoloration of Teeth and Depigmentation of Gingiva: A Case Report

P. Karunakar¹ Umrana faizuddin² Basa Srinivas Karteek^{3*} Indira Panugothu⁴

¹Professor and Head, Department of Conservative Dentistry and Endodontics, Panineeya Institute of Dental Sciences & Research Centre, Hyderabad, India.

²Professor, Department of Conservative Dentistry and Endodontics, Panineeya Institute of Dental Sciences & Research Centre, Hyderabad, India.

³Senior Lecturer, Department of Conservative Dentistry and Endodontics, Panineeya Institute of Dental Sciences & Research Centre, Hyderabad, India.

⁴PG Student, Department of Conservative Dentistry and Endodontics, Panineeya Institute of Dental Sciences & Research Centre, Hyderabad, India.

ABSTRACT

Background: Excessive tooth discoloration and gingival pigmentation is a major esthetic consideration for people. Dental fluorosis is the most common cause of intrinsic tooth discoloration. In case of gingival pigmentation, it is caused by deposition of melanin granules within the gingival epithelium. Though these are not medical pathology, many people complain of tooth discoloration and gingival pigmentation as unesthetic. A case is reported in this article of tooth discoloration treated with power bleaching followed by veneers and gingival pigmentation by scalpel method.

Keywords: Fluorosis, Power bleaching, Gingival pigmentation, Scalpel technique.

INTRODUCTION

The aesthetic appearance of teeth has an important role in physical attractiveness of each person. Discoloration of teeth is a more critical factor for many individuals to achieve an aesthetic smile than restoring normal alignment of teeth within their arch. According to a recent study by Samorodnizky-Naveh, 37.3% of subjects were dissatisfied with their dental appearance, and tooth color was the main reason for about 90% of them. Brown or dark gingival pigmentation often also presents an esthetic problem because it may be apparent during smile or speech.²

Fluorosis is a major health problem in India with over 65 million people at risk and 6 million children seriously affected. Dental fluorosis is a type of intrinsic discolouration where esthetic concern is utmost important. The most frequent reason of hyperpigmentation is melanin deposits mainly located in basal and parabasal layers of the

epithelium. This type of melanin pigmentation is mostly located in the anterior facial gingiva, affecting females more than males, and is persistent without altering normal architecture. Other etiologic factors of oral melanin pigmentation include endocrine disturbance, Albright's syndrome, malignant melanoma, antimalarial therapy, Peutz-Jeghers syndrome, trauma, Hemochromatosis, and Chronic pulmonary disease.

Therefore, it is crucial for dental practitioners to have an understanding of the etiology and clinical presentation of tooth discoloration and gingival pigmentation in order to make a diagnosis and select the most appropriate treatment for each case.

CASE REPORT

A patient came with chief complaint of discolored upper front teeth and gingiva [Figure 1] reported to department of conservative dentistry in our hospital. He gave a history of discoloration since his childhood. No other relevant medical and dental

Received: Mar. 8, 2019; Accepted: May. 5, 2019

*Correspondence Dr. Basa Srinivas Karteek.

Department of Conservative Dentistry and Endodontics, Panineeya Institute of Dental Sciences & Research Centre, Hyderabad, India.

Email: drkarthik.basa@gmail.com



Fig 1: Pre Operative Image Showing Both Tooth And Gingival Discoloration.



Fig 2: Power Bleaching.



Fig 3: Gingival Depigmentation Pre Op And Post Op.



Fig 4: Tooth Preparation For Venners

history was elicited. On examination he had mild grade of fluorosis according to Dean's Fluorosis index in his teeth 13 – 23. All other teeth were present, no dental caries was found. His oral hygiene was poor. The first phase of treatment

involved oral prophylaxis. This was followed by the second phase of treatment, for in- office vital bleaching using power bleaching. Isolation was done using rubber dam from 14 to 24 followed by application of gingival barrier. Bleaching agent was mixed and applied followed by light curing.



Fig 5: Impresssions Made With Putty.



Fig 6: Mock Up Done .



Fig 7: Etching And Bonding Of Porcelain Veneers

Bleaching procedure was done for three sittings. Patient was unsatisfied with beaching treatment hence, the other treatment option was advocated. Ceramic veneers was planned from right lateral incisor to left lateral incisor as stains were reduced on canines. Before the treatment with ceramic venners, gingival esthetic correction was planned and carried. Presence of depigmented areas was

surgically removed by conventional method(Scalpel method). After 2 weeks of treatment healing was satisfactory.



Fig 8: Showing Pre Operative And Post Operative Images

Treatment procedure summary:

Selection of the Shade

The shade selection can be challenging due to the thin and translucent nature of the veneer. The final colour is a result of the underlying tooth colour, the luting resin and the opacity/translucency of the porcelain used. The shade selection was done using vita shade guide.

Teeth Preparation

The tooth preparation has been done within enamel and provided a finished preparation, which is smooth and free of any sharp internal line-angles. Provided a margin from which the dental technician can create a normal emergence of the veneer from the gingival margin.

The preparation of the buccal plane of the incisors needs to be addressed in three planes with incisal, middle and cervical planes. A careful labial reduction was carried out to provide a minimum of 0.5 mm, followed by incisal preparation that was carried over the incisal edge from buccal to palatal, with up to 1.5-2 mm of incisal reduction. [Figure 4].

Interproximally the preparation stopped before the contact area because there is no need to change tooth contour. The cervical preparation for a veneer is recommended to be a chamfer design with a maximum depth of 0.4 mm. Retraction of gingiva done using gingival retraction cord. Maxillary and Mandibular impressions were made with additional silicone in putty consistency. Impressions was sent to lab for mock up and final preparation of veneers done.

Figure 6:

Try-in of Veneers:

Seating of veneers without bonding agent and visualization of margins was done. The patient was satisfied and had approved the final aesthetics, the restorations were prepared for cementation.

Bonding Veneers

The inner surface of veneers (being silica-based restorations) was etched with 9.5% hydrofluoric acid 60 seconds. The acid should be thoroughly cleansed with air-water spray. Silane primer was applied to the fitting surface, which helps provide a chemical covalent bond to the ceramic. This was allowed to remain on the veneer for 1 minute and after that the veneer should be gently blown with air to evaporate any remaining solvent.

Isolation was done followed by etching of teeth with 37% phosphoric acid for 15-20 secs. Then teeth were rinsed thoroughly with water and dried with cotton. Application of bonding agent and curing was done upto 30 secs. Composite was placed on inner surface of veneers followed by seating of veneers and light cured for 5 seconds and checked high points and final curing of 30 seconds was done

Figure 7.

Finishing and Polishing

A fine diamond bur can be used to adjust the porcelain that was then carefully polished. Occlusion is carefully checked initially with centric occlusion followed by other excursive movements.

DISCUSSION

The importance of dental aesthetics for patients has seen a dramatic increase in the number of products and procedures over recent years⁵. Mild fluorosed teeth can be treated by in-office or at-home bleaching or a combination of both. Hydrogen peroxide (35%) and carbamide peroxide (10%) are the commonly used bleaching agent. Although bleaching causes hypersensitivity and time taking procedure. In some cases patients are not satisfied with bleaching, and another alternative method for the immediate treatment of fluorosis stains is the veneers.

In this case veneers was planned from right lateral incisor to left lateral incisors. A study conducted by Goldstein and Lancaster showed that patients would readily accept shorter restoration life expectancy (five to eight years) if enamel could be saved by not reducing the tooth for a full crown.⁶

Outcome of porcelain veneers depends upon minimal preparation within enamel, and type of bonding agent. In this case, preparation was done within enamel followed by etch and rinse, application of bonding agent was used rather than self-etch. After two weeks of bleaching crown preparation for veneers was started, so there was no effect on bonding of veneers.

Along with teeth aesthetic correction gingival depigmentation was done by conventional surgical method. Scalpel surgical technique is highly recommended in consideration of the equipment constraints and economical factors. However, scalpel surgery has shown better healing property with minimal pain and discomfort.⁹ Medications were prescribed for a week and the periodontal pack dressing was done after a week. On clinical examination there was no signs of inflammation and bleeding to the gingiva. Although advanced methods like electrosurgery can be implicated but it causes heat accumulation and adverse effects on the tissues. Overall, smile of the patient had improved with gingival depigmentation and veneers placement.

CONCLUSION

The cosmetic dentistry achieved aesthetic smile by veneers and gingival depigmentation. The veneers are technique sensitive and proper maintenance achieves a better functional outcome.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

REFERENCES

1. Dummett, C. O.: Oral pigmentation. First symposium of oral pigmentation. J Periodontal 31: 356, 1960.
2. Successful Gingival Depigmentation With Laser-Patterned Microcoagulation: A Case Report Edward P. Allen,* Natalia D. Gladkova,† Yulia V. Fomina,† Maria M. Karabut,† Elena B. Kiseleva,† Felix I. Feldchtein,‡ and Gregory B. Altshuler‡. Clinical Advances in Periodontics, Vol. 1, No. 3, November 2011.
3. Tooth discolouration and staining: a review of the literature. Watts A¹, Addy M. Br Dent J. 2001 Mar 24;190(6):309-16.
4. Fluorosis varied treatment options. I Anand Sherwood. J Conserv Dent. 2010 Jan-Mar; 13(1): 47-53.
5. The bleaching of teeth: A review of the literature. Andrew Joiner. Unilever Oral Care, Quarry Road East, Bebington, Wirral, CH63 3JW, UK. Journal of dentistry 34 (2006) 412-419.
6. Esthetic rehabilitation by porcelain laminates - A case report. Romesh Soni, Rajul Vivek. International Journal of Applied Dental Sciences 2015; 1(4): 98-100
7. Effect of Power Bleaching on the Fluorosis Stained Anterior Teeth Case Series. Parinitha M S1, Anna Poorna B M2, Sunil teja Swi3, Suneeth Shetty4, Sowmya h K5. Journal of Clinical and Diagnostic Research. 2014 Aug, Vol-8(8): ZJ01-ZJ03.
8. Tooth discolouration and staining: a review of the literature. A. Watts,¹ and M. Addy,². BRITISH DENTAL JOURNAL VOLUME 190 NO.6 MARCH 24 2001.
9. Kaushik N, Srivastava N, Kaushik M, Gaurav V. Efficacy of Different Techniques of Gingival Depigmentation: A Comparative Evaluation with a Case Report. Int J Laser Dent 2013;3(2):68-72.
10. The effect of polishing & bleaching on the color of discolored teeth in vivo. Journal of Oral Rehabilitation. 2001;28(11):1080-84.
11. Successful Gingival Depigmentation With Laser-Patterned Microcoagulation: A Case Report Edward P. Allen,* Natalia D. Gladkova,† Yulia V. Fomina,† Maria M. Karabut,† Elena B. Kiseleva,† Felix I. Feldchtein,‡ and Gregory B. Altshuler‡.

- Clinical Advances in Periodontics, Vol. 1, No. 3, November 2011.
12. Tooth discolouration and staining: a review of the literature. Watts A¹, Addy M. Br Dent J. 2001 Mar 24;190(6):309-16.
13. Fluorosis varied treatment options. I Anand Sherwood. J Conserv Dent. 2010 Jan-Mar; 13(1): 47-53.