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IN-OFFICE VITAL BLEACHING USING POLA OFFICE - A CASE REPORT

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Abstract:

A pleasing appearance and captivating smile greatly enhance one's personality. Discoloration or staining of the teeth reduces the self esteem of the individual. Tooth discoloration is due to extrinsic and intrinsic stains. Dental fluorosis, tetracycline staining , hypoplasia produce the unaesthetic dentition. The most non invasive and conservative treatment for these stains is tooth bleaching. As patient demands quick results, so in-office bleaching techniques are getting popular. Numerous in office bleaching agents like plasma arc, laser are used. Also self activated bleaching agents are equally effective with minimal adverse effect on tooth structure. This case report show the remarkable change of the colour of fluorosed teeth using in office bleaching.

Keywords: In office bleaching, Pola-office, Fluorosis

1. INTRODUCTION

An attractive smile is a prime assest to a patient's appearance as it contributes immensely to a positive self image. Teeth are considered as the most important feature of an attractive face. It is generally said that whiter teeth enhance the beauty of person's smile.[1] As a result of which the demand for the whiter and brighter teeth is increasing nowdays among the patient's. To achieve this teeth whitening ,dental bleaching is a common procedure in dentistry. There are two types of bleaching-vital and non-vital bleaching.[2] Non –vital bleaching is done in anterior teeth that have discoloured due to increased intrapulpal haemorrhage or pulp necrosis. Vital bleaching is done on the teeth with mild to moderate fluorosis, tetracycline stains or stains of foods, beverages, tobacco etc.[3]

Vital bleaching is performed in-office and at home also. In-office bleaching procedure use high concentration of hydrogen peroxide (25-35%) which is applied on the tooth surface . but it has few disadvantages as it lead to soft tissue burns. So nowdays one can use light enhanced bleaching techniques ,or a laser activated bleach.[4] In-office , light system is based on a plasma arc high-intensity photopolymerization device that can be used for in-office whitening and for resin photopolymerization. Advantages of in-office bleaching is that it is faster procedure and tooth sensitivity reduced due to use of desensitizers such as potassium nitrate and fluoride.[5]

2. CASE REPORT

A 22 year male patient came to the department of conservative dentistry and endodontics with chief complaint of discoloration of teeth. History of the patient showed the presence of yellowish brown and white patches on the teeth since childhood. Clinical examination showed the presence of yellow and brown patches on maxillary incisors and white patches on the facial surface of all teeth. So the diagnosis of dental fluorosis was made. (Figure 1).

FIGURE 1. PRE-OPERATIVE

In office, bleaching procedure was then decided for the patient. Tooth vitality was carried out using electronic pulp tester (EPT) and all teeth found to be vital. Radiographic examination was done to check for the presence of periapical pathologies. After that tooth color shade was verified using a color shade guide (Vita Classical). Oral prophylaxis and polishing were done before commencing the treatment. After that gingival barrier was applied and light cured for 20 seconds (Figure 2).

FIGURE 2. PLACEMENT OF GINGIVAL BARRIER

In this we use Pola-office which contain 35% hydrogen peroxide and potassium nitrate which acts as a desensitizer (Figure 3). Contents of the syringe were taken and mixed until the homogeneous mix was obtained and it was applied over the teeth using applicator tips and left for 8 minutes (Figure 4). Curing light was used according to manufacturer's instructions (Figure 5).

FIGURE 3. POLA OFFICE BLEACHING AGENT

FIGURE 4.APPLICATION OF BLEACHING AGENT

FIGURE 5. LIGHT CURING

After the last application, left bleaching agent was removed using water and final polishing was done. Patient noticed marked improvement in tooth color with more enhanced smile.(Figure 6)

FIGURE 6.POST OPERATIVE

3. DISCUSSION

Nowadays there are multiple esthetic treatment options available in the field of dentistry, bleaching is one them. Before starting the bleaching procedure, proper clinical evaluation and history taking is important to know the etiology responsible for tooth discoloration and the degree of discoloration.[6] There are various brands of bleaching agents with various concentrations are available in the market. Here in this case Pola office bleaching used and it has the most promising outcome. Along 35% hydrogen peroxide Pola office consist of potassium nitrate, so patients post operative sensitivity got reduced.[7]

There are many factors known to increase sensitivity such as high concentration of H2O2, high enamel permeability, prolonged use of bleaching agents, heat during the application of accelerator LED light and differences in the structural morphology of enamel and dentin with pores which facilitate the infiltration of bleaching agent. Sensitivity issues have led some manufacturers to release bleaching gels with lower concentrations of H2O2 and desensitizing agent in order to minimize the side effects produced by peroxide radicals.[8]

Hanks et al. concluded that bleaching agent penetration into pulp chamber depends on the original concentration of the bleaching agent and duration for which it has been exposed to the tooth surface, he also concluded that it took around 15 mins for bleaching agent to reach into the pulp chamber.As molecular size and weight of peroxide, molecule is very low and has the ability to denature the protein present in dentin that's why it moves easily through dentinal tubules and reach to the pulp chamber.[6] But in vivo studied shows a reverse result of in vitro studies. In vivo studies by Cohen and Robertson shows either no or very minimal inflammation of pulp when exposed to 35% hydrogen peroxide. The protective mechanism of pulp against bleaching agent is by breakdown of peroxide molecule by enzyme peroxidase and catalase. Another factor responsible for the diffusion of bleaching molecule into the pulp chamber is positive pressure within the pulp chamber and osmotic pressure of the bleaching agent.[9]

Heat and light application may initially increase whitening due to greater dehydration which reverses with time. Actual color change will not be evident until 2-6 weeks after bleaching treatment. The average number of in-office visit for maximum whitening is 3, with a range of 1- 6 visits, so the patient should be prepared for additional in-office treatments. Hence Pola office has been preferred in the above case for better results in the stipulated time.[10]

4. CONCLUSION

Vital tooth bleaching is an effective, conservative and esthetic treatment modality to change the appearance of teeth. It has gained a lot of popularity among the general public due to its fast and immediate change in teeth color. As per newer bleaching material evolution into the field of conservative dentistry, in-office bleaching is safe without any adverse effect on tooth structure when proper concentration of bleaching agents is followed.

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