Combined in-office and take-home bleaching in vital teeth

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Case Report

Combined in-office and take-home bleaching in vital teeth

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ABSTRACT

The aim of this paper is to describe vital teeth bleaching employing a combination of techniques: In-office and at-home. We applied a 35% hydrogen peroxide with a pen applicator for the in-office process and 16% carbamide peroxide for in-home bleaching. We have concluded that, in-office bleaching in combination with take-home bleaching using hydrogen peroxide is an excellent option for esthetic and conservative treatment of teeth that have been chromatically altered.

Keywords: Esthetic, therapeutics, tooth bleaching, tooth discoloration, vital tooth

INTRODUCTION

The demand for esthetic treatments such as tooth whitening has increased considerably; however, in order for bleaching to be successful, a correct diagnosis is fundamental in reference to the nature of tooth darkening and the technique to be used.[1-4] The pigmentation or darkening of teeth varies greatly in its etiology, clinical appearance, location, severity, and adherence on dental structures; it can be classified as extrinsic, intrinsic, or a combination of both.[5] By differentiating or recognizing the etiological agent, we define all of the planning required to perform the bleaching treatment, the technique, the whitening agent to be used, and the number of sessions. In addition, will provide the highest level of tooth whitening for each tooth without injury to the patient's health.[3]

Dental bleaching agents may be in the form of gel syringes, foil self-adhesives, and varnish, which is applied with brushes or pens. When presented in liquid form, they must be mixed with a thickener gel. Some products used in the office allow mixing system in syringes, which avoids the use of auxiliaries containers and helps to provide the correct ratio of components. Other systems recently introduced are bleaching gels with applicators in the form of pens and brushes. In those products, the bleaching agents are ready to use. In-office tooth whitening is a procedure that utilizes gels with higher percentages of hydrogen peroxide (30-35%) than home bleaching treatments; they provide quicker results. Home bleaching, in turn, uses concentrations of carbamide peroxide or hydrogen peroxide ranging from 10% to 20%, which is sufficient and effective for dental whitening.[6,7]

To obtain results that are less aggressive to the pulp tissue and more durable with respect to the longevity of the bleaching, the current trend is to use a combination of techniques-in-office and at-home.[8,9] The aim of this paper is to describe bleaching treatments in vital teeth, which employ a combination of techniques-in-office and at-home.

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CASE REPORT

A 25-year-old female patient was referred to the dental clinic reporting dissatisfaction with the appearance of her smile [Figures 1-3]. At the initial clinical examination

and anamnesis, it excessive yellowing was observed, indicating that a bleaching procedure might be appropriate. The periodontal health of the patient was satisfactory, and a radiographic examination revealed no abnormalities of the supporting tissues.

The pattern of the enamel stain suggested that a combination of tooth whitening techniques, in-office and at-home, would be a viable option in this case. After careful prophylaxis, the operative area was isolated with a lip retractor (OptiView, KerrHawe, Switzerland). Before starting the bleaching procedure, an appropriate color was chosen, especially for the anterior teeth, using a color scale (Vitapan 3D-master, Vita Germany) [Figure 4]. It was applied using a photopolymerized gingival barrier rounding the cervical area of the teeth for gingival protection (Gingi Dam, Villevie, Dentalville, Joinville, Brazil) [Figure 5].

The in-office bleaching treatment was performed with a 35% hydrogen peroxide via a pen applicator known as Twist Pen (Mix One Supreme, Villevie, Dentalville, Joinville, Brazil). Placing the bristles of the applicator tip to the teeth with a rotation at the rear of the pen performs the application of the bleaching agent. The bleaching material is applied by brushing the pen over the enamel surface of the teeth to be whitened, following the instructions of the manufacturer; it does not require any source of activating light or heat [Figures 6-8].

Two clinical sessions were performed for each arch, with a 1-week interval between sessions. At each visit, three 15-min applications were performed, totaling 45-min of contact with the gel structure at each session. After 15-min of contact, the bleaching agent was gently removed using gauze soaked in water and then the tooth surfaces were washed [Figures 9 and 10]. After drying, another 15-min application was performed. Completed the procedure in the maxillary teeth [Figure 11], bleaching was started in the mandibular arch [Figure 12].

After that, molding was performed using gypsum, and resulting in models [Figures 13 and 14]. Silicone impression trays were made on the models and cut approximately 2 mm beyond the gingival margin, following the gingival contour [Figure 15]. In the continuity with the proposed treatment, the patient also conducted home bleaching with carbamide peroxide 16% (16% Night Mix, Villevie) for 2 h daily for 15 consecutive days [Figures 16 and 17]. The patient was instructed both orally and in writing regarding the use of the tray and the proper handling of the bleaching gel.

Figure 1: Initial aspect of the maxillary and mandibular teeth

Figure 2: Initial clinical aspect of the maxillary teeth

Figure 3: Smile aspect of the patient

Figure 4: Initial color aspect using a vitapan color scale

Figure 5: Photopolymerized gingival barrier applied

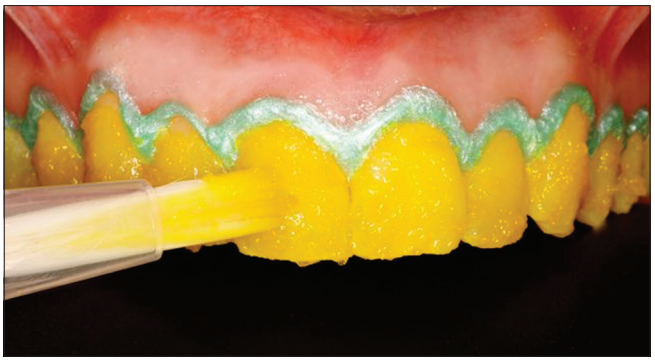

Figure 6: In-office bleaching treatment with a 35% hydrogen peroxide gel

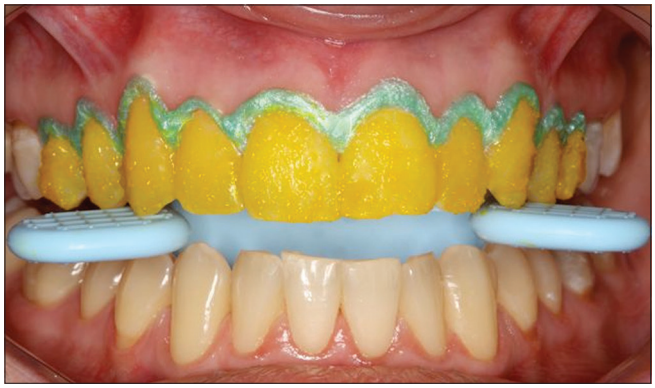

Figure 7: The bleaching gel does not require any source of activating light or heat

Figure 8: Approximate aspect of the initial application of the bleaching gel

Figure 9: Immediate aspect of the first application of the bleaching gel

Figure 10: Remotion of the gingival barrier

At the conclusion of the bleaching procedure, the teeth were evaluated; a favorable change in terms of the chromatic color of the teeth, using as a parameter the Vitapan scale range from A3 to A1, was observed. After application of the bleach, the teeth were subjected to a polishing felt and polishing slurry and then a desensitizer based on sodium fluoride and potassium nitrate was applied (Sensis 2% Villevie, Dentalville Joinville, Brazil) for a period of 10-min [Figure 18]. The patient presented no sensitivity during or after the use of the stain remover and bleaching product. Four months after the procedures, a good final appearance was observed [Figures 19 and 20].

DISCUSSION

Despite the fact that whitening is a conservative alternative to more radical procedures such as veneers or prosthetic crowns, it has the intended effect only if all of the etiologic factors in terms of the nature of tooth darkening are considered in order to understand and to correct this condition when it is thought to be necessary.[1-4,10-13]

Figure 11: Clinical aspect after the two clinical sessions

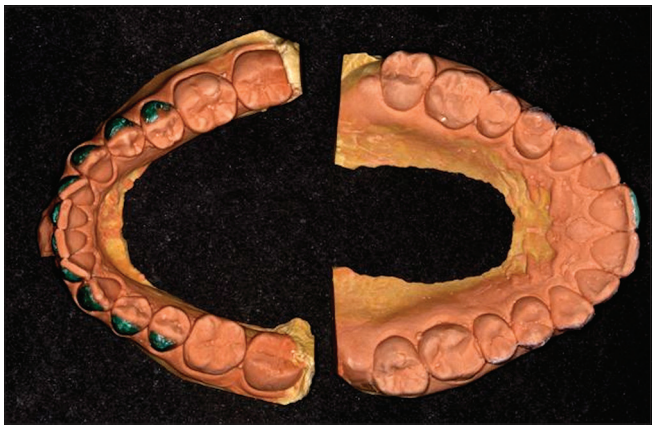

Figure 13: Confecction of the silicone trays in both archs

Figure 15: Silicone trays prepared

Figure 12: Bleaching gel application in mandibular arch

Figure 14: Detailled aspect of the silicone trays

Figure 16: Home bleaching with carbamide peroxide 16%

The combination of the two techniques has provided more durable and predictable results when compared to the use of only the in-office technique.[8,9] It has been recommended that the time of use of the bleach be shortened to reduce side effects such as tooth sensitivity and gingival irritation. Such side effects occur to a lesser extent when the bleaching gel is used for a short period (2 h), independently the concentration of bleaching agents.[7]

In reference to the bleaching procedure without the use of auxiliary sources of light,[7,10] we found that the teeth were satisfactorily cleared of discoloration with excellent clinical results. Nevertheless, the association of this technique in conjunction with supervised home dental bleaching appears to be an excellent therapeutic option.[8] We should be vigilant regarding excessive bleaching, that is, when it reaches the point of saturation, which is the maximum possible amount of bleaching that should be performed. The bleaching reaches the point of saturation when the maximum amount of bleaching has occurred; after beyond this point, no more bleaching

Figure 17: Silicone tray in position

Figure 19: Final aspect of the in-office and home bleaching association

occurs. Clinically, we observed this particularity when patients continued to achieve the same bleach results with the continued application of the whitening agent. At this point, it is necessary to know when to stop the procedure because, at the time that the disadvantages start to become evident, the patients begin to lose all of the aesthetic benefits of the bleaching process.

CONCLUSION

If done in accordance with appropriate diagnosis, in-office bleaching in combination with take-home bleaching using hydrogen peroxide is an excellent option for aesthetic and conservative treatment of teeth that have been chromatically altered.

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Figure 18: Fluor gel application after the bleaching

Figure 20: Smile aspect of the patient

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