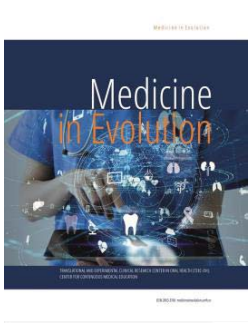
Minimally invasive treatment of dental dyschromia



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Abstract

Dental dyschromia is one of the main reasons why patients request treatment in the dental office. Dental dyschromia represent the alteration of the physiological color of teeth. This paper shows 2 minimally invasive treatment alternatives for dental discoloration – external and internal bleaching. The main purpose of bleaching techniques is to restore the esthetic aspect of teeth. Good knowledge of external and internal bleaching techniques protocol and materials are necessary, in order to obtain a good result.

Keywords: dental dyschromia, minimally invasive treatment, dental aesthetics

INTRODUCTION

Along with the shape of the teeth, their color is one of the important elements of the aesthetics of the smile.

Dental dyschromia represent the alteration of physiological color of teeth, on the whole coronary surface or only on certain parts of it. The discoloration can be localized (it affects a certain number of teeth) or generalized (it affects the whole dentition).

Dental dyschromia can be classified as (1,2):

- intrinsic dyschromia (given by hereditary or acquired factors): amelogenesys imperfecta, dentinogenesys imperfecta, enamel dysplasia, dental fluorosis, Tetracycline dyschromia, post trauma or post infection dyschromia.
- extrinsic dyschromia (given by chromogenic substances, that bind to the tooth surface and modify its colour)
- mixed etiology dyschromia.

Modern treatment alternatives take into consideration the etiology of the dyschromia and are minimally invasive; one of them is represented by external and internal bleaching procedure (3).

Aim and objectives

The purpose of this paper was to emphasize the aesthetic potential of the bleaching materials, by restoring the aspect of smile (correction of teeth discoloration in the aesthetic area).

MATERIAL AND METHODS

This paper presents 2 case reports of intrinsic dyschromia, that were treated with help of bleaching procedures (one with external bleaching and one with internal bleaching).

For the external bleaching procedure (on vital teeth) one used Opalescence Boost 40% and Opalescence PF 16% (Ultradent Products, USA) (Fig.1).

Figure 1. Materials used in external bleaching procedure

For the internal bleaching procedure (for nonvital teeth) one used Opalescence Endo (Ultradent Products, USA). (Fig.2)

Figure 2. Materials used in internal bleaching procedure

First patient (female, 23y) presented a uniform and discrete discoloration (Fig 3), a favourable situation for the external bleaching procedure. The gel (Opalescence Boost 40% Hydrogen Peroxide) was applied on upper and lower teeth (Fig.4,5) for 30 min – in office bleaching.

Figure 3. Initial aspect of smile

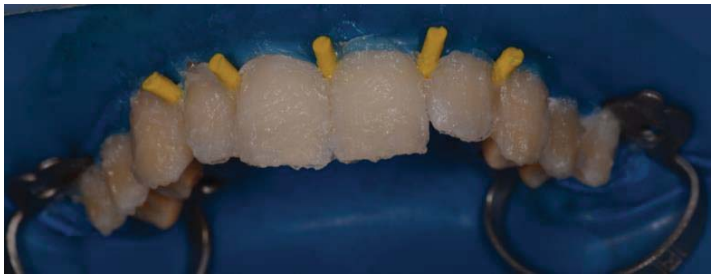

Figure 4. In office bleaching of the upper teeth with Opalescence Boost

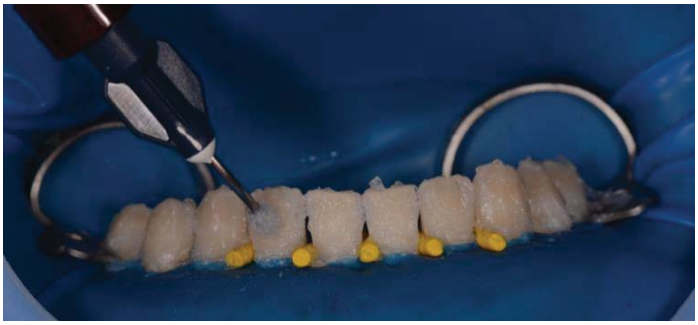

Figure 5. In office bleaching of the lower teeth with Opalescence Boost

The second patient (female, 34y) presented a single tooth intrinsic dyschromia (tooth 1.2), after endodontic treatment,. The treatment option was the internal bleaching, with Hydrogen Peroxide 35 % (Opalescence Endo, Ultradent).

Figure 6. Initial aspect of smile

Before starting the internal bleaching procedure of non vital teeth, it is very important to check the integrity of the root canal treatment and to realize the root barrier. Only then it is safe to apply the gel inside the tooth (Fig.7). The maximum efficacy of the gel is in the first 48 hours. After 72 hours the bleaching gel becomes ineffective.

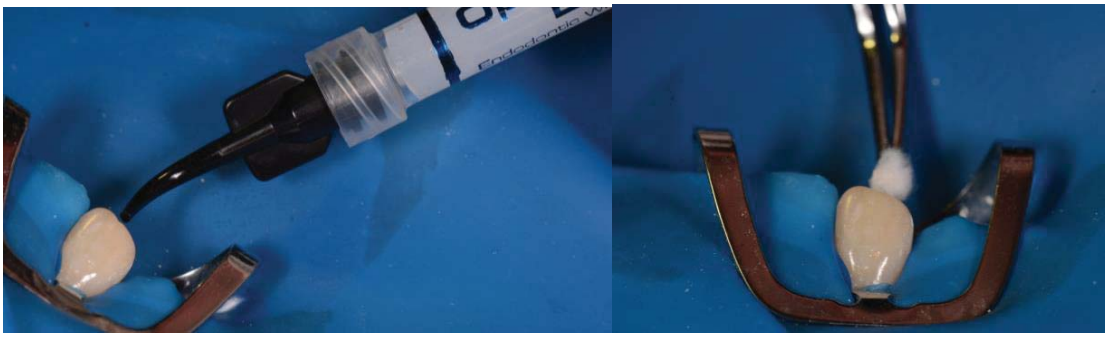

Figure 7. Aspect from the internal bleaching procedure

RESULTS

In case of both patients, the treatment had good results. The patients were satisfied with the new appearance of their smile.

In case of first patient, the results were obtained after 30 min in office bleaching and 10 days home bleaching, in trays.

Figure 8. Aspect of smile at the end of external bleaching treatment

In case of second patient, the results were obtained after 3 sessions of internal bleaching and 7 days home bleaching, in trays.

Figure 9. Aspect of smile at the end of internal bleaching treatment

DISCUSSIONS AND CONCLUSIONS

Bleaching treatments are a minimally invasive therapeutic option for dental dyschromia. The success of the treatment of dental dyschromia depends on the correct diagnosis and etiology of dyschromia, but also on the choice of the right bleaching technique.

The treatment plan must always be correlated with both the etiology of dyschromia and the degree of pigmentation of the dental tissues.

Home bleaching treatment (with Carbamide Peroxide 16%) has more stable results over time (4,5).

The direct restorations does not react to the bleaching treatment and, therefore, they need to be replaced after the treatment. The patient must be informed about that, before starting the treatment. It is safe to do the restoration after 7-14 days from the end of bleaching treatment.

Dental tenderness may occur, but it is reversible.

Possible side effects of whitening gels can be avoided, as long as the gel amount and concentration and mode and frequency of whitening are performed under medical supervision (2,5).

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