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Case Report

Improving teeth appearance from the impact of unhealthy lifestyle: a case report

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ABSTRACT

Background: *Tooth discoloration in one or more anterior teeth can cause significant aesthetic problem for patients because it affects the smile that relates to a person's self-confidence. Thus, external bleaching is a viable treatment alternative. Discoloration stains on teeth are caused by smoking and the consumption of pigmented beverage such as coffee.* ***Purpose:*** *This case reports an external bleaching caused by an unhealthy lifestyle.* ***Case:*** *A 26-year-old female television presenter wanted to treat yellowish dark shade of her teeth and this made her feel less confident due to the yellowish dark shade teeth.* ***Case Management:*** *Teeth discoloration was managed with external bleaching using hydrogen peroxide 40%. After the treatment, the teeth shade increased from yellow-brownish to A2 with Vita Classic shade guide.* ***Conclusion:*** *The case report shows that external bleaching treatment produces brighter shade and increase self-confidence of the patient so she feels very satisfied.*

Keywords: *discoloration, external bleaching, hydrogen peroxide, case report, lifestyle.*

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INTRODUCTION

Discoloration can cause aesthetic problems that can have a considerable psychological impact, such as impairing appearance and self-confidence.[1] Tooth discoloration can be broadly divided into three categories, they are extrinsic, intrinsic, or combination of both. Extrinsic tooth discoloration can be caused by poor oral hygiene, consumption of chromogenic foods and beverages such as wine, coffee, tea, mouthwash, and tobacco use. On the other hand, intrinsic tooth discoloration included aging, dental restorative materials (amalgam), dental trauma, caries, medication (tetracycline and large doses of fluoride over many years), disorders during pregnancy, genetic factors and hereditary diseases that affect enamel and dentin development as well as systemic diseases during tooth formation.[2] Tooth discoloration can be managed totally or partially by bleaching. Aside from bleaching, other techniques can serve as an alternative to treat teeth discoloration, such as direct restorations, veneers, and crown procedures.[3]

Teeth bleaching is a usual dental procedure for cosmetic reasons, using hydrogen peroxide material. Bleaching material can be applied directly or produced from a chemical reaction originating from carbamide peroxide or sodium perborate.[4] Teeth bleaching is grouped into two general categories: external and internal. External bleaching treatment is done using an at-home method or in- office method, and this will require different levels and types of bleaching materials.[5]

External bleaching procedures are minimal invasive than the restorative methods, this treatment is relatively simpler, less expensive, and provides satisfactory results to patients. These methods have been proven effective in returning the natural shade of teeth discoloration.[6] This article discusses aesthetic management with external bleaching without irradiation.

CASE

A 26-year-old female television presenter came to Universitas Airlangga Dental Hospital complaining of low self-esteem caused by the yellowish dark shade of her teeth in the upper jaw teeth from 14-24 and lower jaw teeth from 34-44. The patient reported with daily habit of smoking and consuming one cup of coffee for 5 years. Nevertheless, this patient is not confident caused the yellowish dark shade of her teeth. This patient informed that she has no systemic diseases or disorders. In intra oral exam, the patient reported no pain. Based on the clinical exam, the patient's diagnosis was normal gingiva, intact anterior teeth (normal pulp), good oral hygiene, and no debris or calculus.

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CASE MANAGEMENT

At the first appointment, the operator did anamnesis, objective examination, and supporting examination. Dental health education together with the communication, information and education are important to ensure that the patient is informed with the planned procedures. Informed to consent and informed consent are obtained from the patients before receiving any treatment. Diagnosis is built on the patient's test results and symptoms, and then the patient's teeth are cleaned with a brush and pumice to take away any stains or debris (Figure 1). An Optragate and cotton roll are put to get the teeth and surroundings for good visibility, and initial teeth shade were determined 3L2 with Vita 3D Master shade guide (Figure 2).

Figure 1. Tooth cleaning using pumice and brush.

Figure 2. Initial Shading (3L2).

Figure 3. Application of Gingival Barrier.

Lip balm and mucosa protecting gel are applied to cover patient's mouth during bleaching procedure. Isoblocks and Optragate are used to keep the patient's teeth still in position. The teeth which will be bleached are cleaned and dried for bleaching material adhesion, and a gingival barrier is applied in gingival margin to protect the patient's gums during bleaching procedure (light curing with scanning motion) (Figure 3). The bleaching material, Opalescence® Boost 40% containing hydrogen peroxide, is combined and mixed following the manufacturer's instructions (Figure 4A) and applied with a micro brush with thickness 0,5 -1 mm in labial surface every 5 minutes for a sum of 15 minutes (Figure 4B).

The bleaching material residue is removed with cotton pellet and metal suction tips, syringes filled with water, and suction tips (Figure 5). Teeth shade is arranged to the desired shade level, such as 2L1,5 shade guide Vita tooth guide 3D Master, and bleaching material is reapplied for the second time. The residue of bleaching material is cleaned once more, gingival barrier material is carefully taken with dental tweezers to minimize irritation or discomfort, and the tooth shade is adjusted to the final level, from 3L2 to 2L1,5 Vita shade guide 3D Master (Figure 6).

After the bleaching procedure, application of potassium nitrate and fluoride gel desensitizers (Figure 7), it is important to analyze the results to ensure that the result are met. This includes photos taking of the patient's teeth for documentation and before-after comparison. Fluoride gel and potassium nitrate can be applied onto the teeth to promote oral health and maintain bleaching result. After-bleaching instructions are given to warrant the best possible result and for patient comfort. The instructions are: to wait for one hour after the bleaching procedure before consumption, quit smoking, using a sensitive toothpaste, avoiding strong colored foods, and avoid using colored mouthwash. The patient is told to come for a follow-up appointment a week after bleaching treatment to evaluate the efficacy of treatment and to make required alterations.

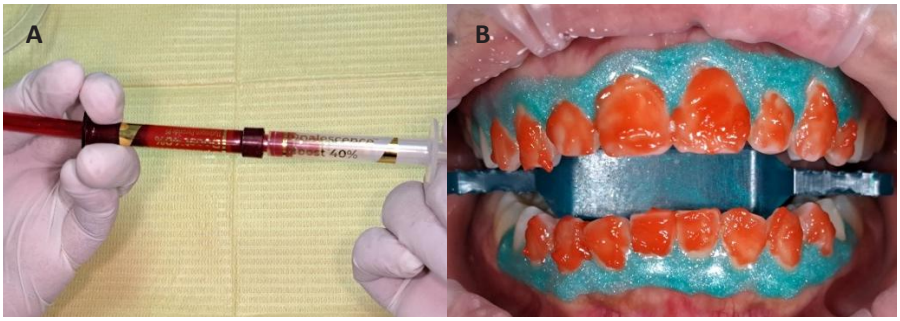

Figure 4. Mixing of Bleaching agent (A), Application of bleaching agent (B).

At the second visit, 7 days after bleaching procedure. Anamnesis is taken, and the patient reported no complains. A detailed examination showed no irregularities. Intraoral examination showed that the teeth and gingiva appeared normal.

DISCUSSION

Dental bleaching is the most common procedure option today, safe and effective when supervised by a dentist.[7] Tooth discoloration is a consequence of lowered enamel mineralization. Normally enamel appears creamy white opaque and if it has yellowish dark shade, it can be determined as discoloration.[1] Staining or teeth discoloration can be instigated by what we consume or drink, trauma, habits, ageing, and drug or medications. The usual causes in our daily lifestyle are tea, cola, coffee, and cigarettes.[6] In this case, taken from the anamnesis, this patient has drinking tea habit in the morning, and she never had dental procedures in the past.

Figure 5. Cleaning of bleaching agent residue using surgical suction tip.

Before deciding a bleaching treatment planning, the causation of discoloration must be known, because this will affect the treatment success. The available treatments are external bleaching, at-home bleaching, in office bleaching, the abrasion techniques, light activated, internal bleaching or walking bleach, thermo-catalytic bleaching, and the last option is restorative procedures involving resin composite restorations or crowns or ceramic veneers.[5] Based on this patient's case and the discoloration was induced by long consumption of tea and the location is external, the choice of treatment was in-office bleaching procedure.

The commonly used bleach material is hydrogen peroxide with concentration of 20-40%, this material can be combined with a light activation. Maximum of four sessions with hydrogen peroxide exposure from 15 to 20 minutes in a session are allowed.[2] In this matter, the operator used hydrogen peroxide 40% and done in 2 sessions, 15 minutes exposure per session of application. For optimum results, bleaching procedure can be performed in more than one visitation.

During external bleaching procedures, 40% hydrogen peroxide-based materials are applied, this have the advantage of being directly controlled by professionals, so there is no contact with soft tissue and can be done in just one visit so that this technique is indicated for patients who want fast, effective and stable results. In conclusion, external bleaching procedure is a preferred treatment because this procedure is considered safe, meaning the dentist can supervise and handle the bleaching procedure directly, making it efficient with instant result.

Figure 6. Color matching after bleaching cycle (From 3L2 to 2L1,5 shade guide Vita 3D Master).

Figure 7. Application of desensitizing agent.

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