

**UNIVERSIDADE ESTADUAL PAULISTA
FACULDADE DE ODONTOLOGIA DE ARAÇATUBA**

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**Associação da técnica de clareamento dental com procedimentos
restauradores diretos**

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Dedicatória

D e d i c a t ó r i a

Dedico esta monografia a quatro pessoas Francisco, Zumeire, Éder e Geisa, que em nenhum momento mediram esforços para realização dos meus sonhos, que me guiaram pelos caminhos corretos, me mostraram que a honestidade e o respeito são essenciais à vida, e que devemos sempre lutar pelo que queremos. A eles devo a pessoa que me tornei, sou extremamente feliz e tenho muito orgulho por chamá-los de família.

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“ Hoje, neste tempo que é seu, o futuro está sendo plantado. As escolhas que você procura, os amigos que você cultiva, as leituras que você faz, os valores que você abraça, os amores que você ama, tudo será determinante para a colheita futura ”

Padre Fábio de Melo

Επίγραφε

Epígrafe

"Olho para as minhas mãos, descubro nelas a leveza para alcançar o detalhe. A sensibilidade exata para interferir na dor. A mobilidade necessária para atingir o mais difícil. A vivacidade que percebe o que não pode ser dito. Abre-se um sorriso, descubro nele a perfeição que faz de minhas mãos um instrumento. A simplicidade que torna simples o mais difícil. A sensibilidade que me diz tudo, sem nada dizer. Gestos, sorrisos, expressões que unem dom e desejo, auxílio e agradecimento, Odontologia e arte."

Artista Desconhecido

OLIVEIRA,GS. Recovering the smile through dental bleaching and composite resin restorations. A case report; Araçatuba: Universidade Estadual Paulista; 2011.

Abstract

This article relates the smile recuperation of a patient whose main complaints were the presence of dark teeth and extensive wear on the maxillary and mandibular anterior teeth. After the clinical procedures were analyzed, discussed and proposed to the patient, the dental bleaching was performed with 10% peroxide carbamide (Opalescence - Ultradent Products, Inc., South Jordan, USA), followed by the direct restoration technique with a resin composite in the superior anterior teeth (Amelogen Plus - Ultradent Products, Inc., South Jordan, USA) and inferior anterior teeth (Evolux - Dentsply Indústria e Comércio Ltda, Petrópolis, Brasil). It was concluded that the association of these esthetic techniques provided an enable and satisfactory esthetic appearance.

Key-words:. Resin Composite. Tooth Wear. Tooth bleaching

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Introduction

The patient's smile recuperation has been achieved through the integration of esthetic and restorative techniques. Among them, we can highlight the dental bleaching associated with the recovery of anatomical form and dental function with resin materials, which eliminated the need for dental large wear as well as the need to manufacture prosthetic components, especially for patients presenting wear on the maxillary and mandibular anterior teeth, with or without signs and symptoms of occlusal dysfunction.^{1,2,3,4}

Within this context, the dental market has presented dental bleaching products that collaborate effectively to recover the esthetic of the smile when correctly indicated and employed;^{5,6} likewise among the esthetic restorative materials available for anterior teeth, the composite resin has also been successfully used in cases that would have been indicated for prosthetic treatment in the past; this is due no doubt to the high degree of development of newer composites materials, which have a higher proportion of filler particles per volume. This proportion provides, among other benefits, better mechanical properties.¹

Given these clinical possibilities, we present the achievement of a clinical case of tooth bleaching and esthetic reconstruction in a patient presenting large wear of maxillary and mandibular anterior teeth.

Proposition

Faced these clinical possibilities, we present the achievement of a clinical case of tooth bleaching and esthetic reconstruction in a patient presenting large wear of maxillary and mandibular anterior teeth.

Clinical case

A 40-year-old patient exhibited yellowish teeth and incisal wear of the maxillary and mandibular anterior teeth (Figure 1). The bleaching and restorative procedures were performed at a postgraduate clinic in the Faculty of Dentistry of Araçatuba-UNESP. Initially, after interproximal radiographics and a clinical exam, the dental bleaching was performed in both arches with 10% carbamide peroxide opalescence (Ultradent Products, Inc., South Jordan, USA). The 10% carbamide peroxide dental bleaching custom trays for both arches were made from alginate impressions. The patient was instructed to place a small drop of the bleaching product into each little tooth well in the trays. The patient was told to apply the trays with bleaching product for 4 hours daily for 3 consecutive weeks for the maxilar arch and 4 consecutive weeks for the mandibular arch (Figures 2 and 3). Any patients submitted to the carbamide peroxide bleaching technique should present absence of caries lesions, fractured restorations and periodontal diseases; this technique is also indicated for non-pregnant women, women who are not breastfeeding, non-smokers, non-alcoholics and those who have good systemic conditions and healthy oral soft tissues, as well as for those who have no history of adverse reactions to peroxides. The teeth to be bleached should present no exposed dentinal tissues in the cervical or incisal/occlusal regions while the bleaching treatment is being performed. When faced with this latter clinical possibility, dentinal protection must be performed before the application of bleaching material by means of a conventional adhesive system or a self-etching adhesive system. Undoubtedly, dentinal protection will help to control and even eliminate dental sensitivity during and after the bleaching treatments presented above.⁷

Seven days after the conclusion of the bleaching treatments, the reconstruction of the maxilar anterior teeth was performed after anesthesia and dental prophylaxis with pumice and water. The enamel cavosurface margins of the buccal surface were beveled using a diamond tip 1190F (KG Sorensen Ind & Com Ltda., Alphaville, São Paulo, SP, Brazil) (Figure 4). The enamel conditioning was performed 2 to 4 mm beyond the cavity margin in the dental enamel with 35% phosphoric acid (Ultra Etch- Ultradent Products, Inc., South Jordan, USA) for 60 seconds in the enamel and 20 seconds in the dentin

(Figure 5), rinsed with water spray and then air dried. The enamel surface should be completely dry before any restorative procedures, whereas the dentin should appear moist. A two-step etching adhesive system Adper Scotchbond Plus (3M ESPE Dental Products St Paul, MN, USA) was applied to enamel and dentin surfaces under pressure with a microbrush. After this application, the surface was gently air-dried for 5 seconds and light cured for 20 seconds using a Valo Led light appliance (Ultradent Products, Inc., South Jordan, USA) with a power of 1000 W/cm² (Figure 6).

All maxilar teeth were restored with the composite resin Amelogen Plus (Ultradent Products, Inc., South Jordan, USA) with the colors B1 and EN, which was applied with a metal spatula following the incremental technique (2 mm-thick layers). Each increment was light polymerized for 10 seconds using a Valo Led light-curing unit (Ultradent Products, Inc., South Jordan, USA) with a power of 1000 mW/cm² and finalized with a complementary light polymerization for 40 seconds. A wedge and a plastic matrix were used to confine and contour the restorative material (Figure 7). All maxilar restorations received finishing with the application of diamond burs with the high-speed point 1190F (K.G.sorensen Ind & Com Ltda., Alphaville, São Paulo, SP, Brazil) and the low-speed point #850 - Jiffy Regular Brushes 10pk (Ultradent Products, Inc., South Jordan, USA) (Figures 8 and 9).

The restorative procedures of the mandibular anterior teeth were performed with the composite resin Evolux (Dentsply Indústria e Comércio Ltda, Petrópolis, Brasil) with the colors B1 and A1 in the same manner as the procedure for the maxilar anterior teeth. After reconstruction of the anterior maxilar and anterior mandibular teeth, two lateral guidances via the canines and an anterior guidance were provided in order to allow the disocclusion of the posterior teeth during eccentric movement. The patient was given an maxillary acrylic resin bite plate to protect the restorations, which the patient used for nighttime protection, especially during periods of greater stress (Figure 10). Thus enabling a satisfactory result after 6 months of clinical follow-up (Figure 11 and 12).

Discussion

The success of restorative treatment of patients with large wear incisal, as described in this case report, is directly related to the development of an adequate treatment plan, which is able to reestablish the aesthetic and functional dental characteristics.

The case report was initiated by the dental bleaching technique with carbamide peroxide 10%, emphasizing that the protection of exposed dentin with adhesive system, prior dental bleaching, allows the formation of hybrid layer and resin tags, which prevented direct contact of peroxides with exposed dentin⁸ and avoided the appearance of dental sensitivity.^{7,9}

Even with the literature showing the possibility of using a prosthesis^{10,11} in similar clinical conditions, the resin composite was selected in this case to allow a relatively conservative procedure with short working time, immediate outcomes, low cost, no biological involvement of tissues, easy repair if required, and the possibility of achieving favorable esthetics.^{1,12,13}

For large dental reconstruction with direct restorations, the intrinsic characteristics of resin composite, the clinical observation and the field of restorative technique may influence on the aesthetic/functional result, being of extreme importance that this restorative material reproduces the dental characteristics, especially those related to their optical and functional properties. Also, it must remember that after any dental bleaching it is necessary to wait at least 1 week for any restorative procedure because in this period, there is the presence of residual oxygen, which could hamper the proper curing of the adhesive system and interfere in adhesion and longevity of restorations.¹⁴

The resin composite Amelogen Plus (Ultradent Products, Inc. Salt Lake City, UT, USA), used in the reconstruction of incisal of maxillary teeth, has 61% filler by volume², which gives it good wear resistance,¹⁵ making it capable of supporting the masticatory forces. Also, the size of its particles (microhybrid) allowed a high degree of brightness and polishing¹⁵ as dental enamel and, the barium in its composition, it is the responsible for its radiopacity and contributes significantly to its fluorescence; allowing the clinician, to achieve the desired aesthetic and functional results.² On the other hand, the anterior mandibular teeth were restored with resin composite EvoluX (Dentsply Ind and Com Ltda,

Petrópolis, Brazil), which has nanohybrid particles filler and also allows a high degree of polishing as well as good wear resistance,¹⁶ which is of extreme importance in patients with incisal wear.

The restorations were established in order to adequately receive and transmit the forces on the skull base, maintaining the function and integrity of the involved structures and restoration. To achieve that, the scheme for esthetic and functional recovering was based on mutually protected occlusion.^{17,18,19,20,21} The canine tooth guided the lateral excursion of the mandible in the working side. All anterior teeth guided the protrusive movement without occlusal contact in the posterior dentition.²¹ This was established because the patient showed a very compromised occlusal relation between arches in view of severe wear of the anterior dentition.

At the end of the restorative procedure, an acetate bite plate with 3mm of thickness was immediately placed for overnight use. This allows an enough time to prepare an acrylic resin bite plate to be used accordingly. It must be emphasized that our patient was asymptomatic. So, the use of an acrylic plate was indicated only to protect the restorations during an unspecific period of time sufficient for the patient establishes functional habits without structural risks to the restored teeth and without induction of deleterious habits. The immediate final results were considered adequate for both clinicians involved and the patient.

Conclusion

The association of dental bleaching techniques with peroxide carbamide and hydrogen peroxide and the performing of direct restorative procedures with composite resin were able to reestablish the function, form and aesthetics of anterior maxilar and mandibular teeth, restoring to the patient a harmonious and nice smile.

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Figura 1 – Foto inicial do paciente, com a presença de dentes amarelados e incisais dos dentes da maxila e mandíbula com desgaste.



Figura 2- Realizado o clareamento dental de moldeira, com peróxido de carbamida nos dentes da maxila e mandíbula por um período de 3 e 4 semanas, respectivamente.



Figura 3- Clareamento dental com moldeira a base de peróxido de carbamida



Figura 4 – Bizele na superfície vestibular com uma ponta diamantada.



Figura 5 – Condicionamento com ácido fosfórico a 35%.



Figura 6- Aplicação do adesivo

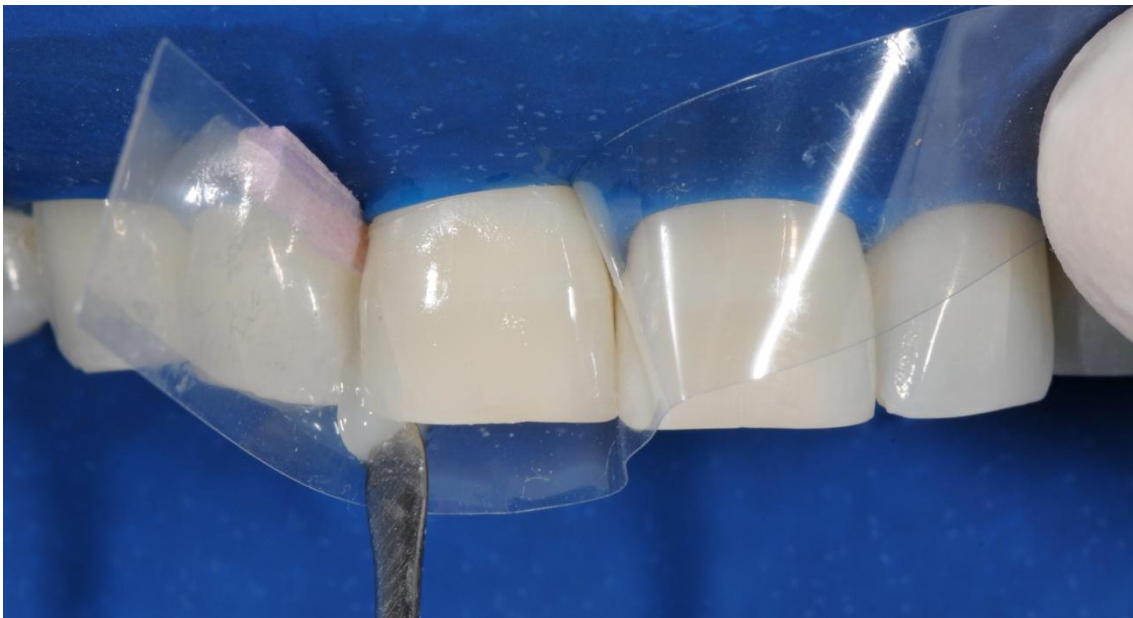


Figura 7 – Com uma cunha de madeira e tira de poliéster para limitar e contornar, foi aplicado material restaurador.



Figura 8 – Resultado do procedimento restaurador



Figura 9 – Resultado do procedimento restaurador



Figura 10 – Placa de mordida maxilar de resina acrílica



Figura 11 – Resultado após 6 meses



Figura 12 – Resultado após 6 meses