

# DENTAL DIASTEMAS: AESTHETIC RESOLUTION COMBINING TEETH WHITENING AND RESTORATIONS WITH DIRECT-APPLICATION COMPOSITE RESIN - CASE REPORT

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## ABSTRACT

Nowadays, physical appearance and self-image are related to individuals' well-being and self-esteem. Any changes that occur can have an unfavorable impact on people's appearance, leading them to seek solutions that restore their aesthetics. Diastemas are spaces or absences of consecutive dental contacts, with ethnic or genetic etiology, which may or may not be well tolerated by individuals. To close or reduce them, direct-use composite resin can be used without causing wear. **Objective:** To report the clinical case of a patient with yellow teeth and anterior superior diastemas, through teeth whitening and diastema closure with composite resin using the direct technique, to improve his self-image. **Clinical case report:** Patient DES, male, sought treatment at the UNIEVANGÉLICA Dental Clinic, complaining that "his teeth are yellow and he finds the spaces between them ugly." The intraoral clinical examination revealed excellent oral hygiene, physiologically yellowed teeth throughout, and diastemas between the anterior superior teeth. The proposed treatment was initially teeth whitening using the in-office technique, followed by the closure of the diastemas with composite resin using the direct technique. In another session, finishing and polishing were performed. **Conclusions:** In the era of minimally invasive philosophy, the use of whitening techniques and closing diastemas with composite resin are conservative procedures that provide aesthetic improvements in a short period of time and at an affordable cost.

**Keywords:** Diastema; Dental Aesthetics; Teeth Whitening; Composite Resins.

## INTRODUCTION

Nowadays, aesthetics is a benchmark for health and social life (BALTUSIS, 2021; PAIXÃO, 2023), and the perfect smile combines white, straight teeth in harmony with the gums (PEREIRA, 2022). The media influences people by valuing aesthetic models that behave as societal standards. For this reason, the pursuit of beauty has reached high levels of demand among people (MALTA, 2022), who today care about aesthetics and good looks as a means of acceptance in society (BALTUSIS, 2021; FERREIRA, 2022; MALTA, 2022; PAIXÃO, 2023).

Aesthetic balance pleases the eye. When changes compromise harmony, people are dissatisfied with their appearance and may become introspective and have lower self-esteem (FERREIRA, 2022). Aesthetic dissatisfaction can arise from discolored teeth, diastemas, among other issues (BALTUSIS, 2021).

When it comes to any disharmony in the front teeth that affects self-image, people have widely sought cosmetic dental procedures that aim to achieve dental harmony in a natural way (MALTA, 2022).

Teeth whitening, with its different techniques, has become popular in recent years and one of the most sought-after cosmetic procedures in dental offices (PEREIRA, 2022; PAIXÃO, 2023). External whitening promotes fast and efficient tooth whitening, increasing the patient's self-esteem by giving them more aesthetically pleasing teeth (PEREIRA, 2022).

Diastemas, which are spaces between teeth, occur frequently and can compromise an individual's self-image (PRIYANKA, 2023) and interfere with aesthetics (MALTA, 2022).

There are several treatment options for closing diastemas, and the most conservative is that which uses composite resin restorations in the direct technique, which also has characteristics of reversibility and financial accessibility and requires less clinical time (FERREIRA, 2022; MALTA, 2022; PRIYANKA, 2023).

## **CASE REPORT**

Patient DES, male, sought care at the UniEVANGÉLICA Dental Clinic, complaining that "his teeth are yellow and he finds the spaces between them

ugly." The intraoral clinical examination revealed excellent oral hygiene, physiologically yellowed teeth throughout, and the presence of a diastema between the anterior superior teeth.

Through clinical and radiographic examinations prior to clinical procedures, periodontal health, the existence and/or condition of restorations, carious lesions, or areas of exposed dentin were evaluated. The teeth were vital, with no restorations or cracks.

The proposed treatment was initially teeth whitening, followed by the closure of the diastemas with composite resin using the direct technique.

The teeth whitening technique was performed in the dental office, using Whiteness HP Blue gel (FGM) in a single session. The protocol indicated in the package insert was followed: prophylaxis, application of a gingival barrier and photopolymerization, application of a desensitizing agent, application of the whitening gel, waiting for the whitening action to take effect, removal of the gel with a surgical suction device, rinsing, removal of the gingival barrier, and application of neutral fluoride.

Fifteen days after the whitening session, the patient returned for the closure of the diastemas with direct-use composite resin. The restorative session began with color selection according to the Vitapan Classical (Vita) scale, and the resins selected were Herculite Esmalte A1 (Dentsply/Sirona) and Z 250 A1 (3M/ESPE) microhybrids. No wear was performed on the teeth involved.

Modified absolute isolation was used. The rubber dam already in place on the young arch was cut with scissors to the extent necessary to expose the teeth to be restored. The edges of the dam were "glued" to the vestibular and palatal gingiva with cyanoacrylate. No clamps were used for absolute isolation.

The protocol for composite resin restorations was followed, as follows: application of the conventional two-step adhesive system Single Bond (3M/ESPE), starting with acid conditioning with 37% phosphoric acid for 30 seconds on the enamel, followed by two coats of primer/adhesive, applying a jet of air between them, then flash curing for 20 seconds. As the restorations were freehand, the composite resin was placed in layers, using polyester strips and wooden wedges on the proximal teeth to help contour the faces and avoid cervical excess, and then light-cured one by one. The final polymerization was

40 seconds. Finally, the absolute isolation was removed, the occlusion was checked, and the initial finishing was performed.

The final finishing and polishing were performed in the subsequent session, using fine and extra-fine diamond tips, followed by abrasive rubber tips for composite resin polishing, discs of decreasing abrasiveness, and finally, a felt disc with Diamond R (FGM) diamond paste, thus restoring the proper shape and size of the teeth.

## **CONCLUSIONS**

Individualized treatment planning is essential for its success, in order to better indicate the techniques that are appropriate for each clinical situation.

Teeth whitening showed efficient and rapid results in whitening teeth, improving the aesthetic appearance and self-esteem of individuals.

Direct-application composite resins, due to their versatility, have shown satisfactory performance and excellent aesthetic results for many dental disharmony demands, including diastema closure, thus leaving a pleasant smile.

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