

# FACETS CERAMIC COMBINING AESTHETICS AND DENTAL GINGIVAL

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## ABSTRACT

Is suggested the use of ceramic veneers for teeth that have changed the shape and color. The great advantage of this aesthetic restoration are the optical properties, chemical durability and less aggressive preparation compared to the other techniques. This paper reports the case of a patient dissatisfied with her smile, rehabilitated associating periodontal aesthetic treatment with increased clinical and dental crown through indirect facets of lithium disilicate.

**KEYWORDS:** Dental porcelain, esthetics, dental, ceramics.

## 1. INTRODUCTION

Increased social demand for cosmetic dental fosters research in the dental field, for the development and improvement of restorative materials. Among these, those ceramics exhibit various advantageous characteristics before other materials, such as adherence to tooth structure, high strength after cementing, longevity, excellent surface smoothness, low accumulation of plaque, color stability and optical properties similar to dental enamel<sup>1,2</sup>.

The smile should be harmonious, with balance between form, color of the dental element and good proportion between lip and gum. When smiling, gingival exposure should range from 1 mm to 3 mm. This little apparent gingival band ensures a youthful appearance, however, when it extrapolates measures there is a visual imbalance and then characterized the gummy smile<sup>3</sup>.

The presence of small deviations from dental and / or gingival, a certain smile, if not properly diagnosed and treated, condemned compromise the function and balance of the whole, critical to the improvement of self-image patients. One cannot fail to understand that the success of any treatment and / or aesthetic rehabilitation depends on the existence of harmony between the components of the oral and facial region. Also, when achieved harmony

between these components, it is imperative still seek ideal relationship between dental and periodontal parameters<sup>4</sup>.

This article reports a clinical case, which shows the correlation between the red and white aesthetics to achieve the best result of the aesthetic transformation of a smile.

## 2. CASE REPORT

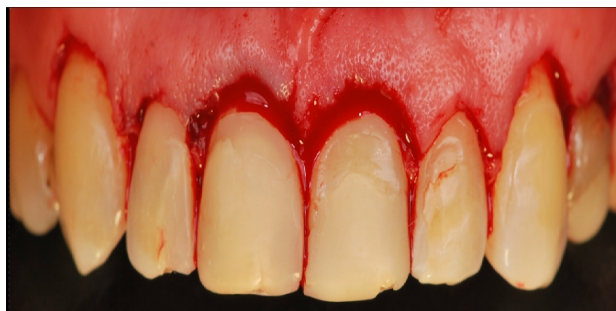
Patient AB, 38, female, admitted to the clinic Inga Faculty - Maringa - PR, unsatisfied with their smile to the disability of the shape of the teeth, staining their composite restorations and gingival exposure when smiling (Figure 1).



**Figure 1.** Smile aspect observe the dental and gingival disharmony

Also presented longing for getting teeth look more natural. After history taking, clinical examination, analyzed the face, smile, gingival contour and dental characteristics. We performed the initial radiographs and clinical photographs. Faced with this protocol was drawn up a treatment plan; proposing, periodontal surgery to correct the gummy smile and fabricating porcelain laminates.

At the opening session, we performed the gingivoplasty (Figure 2). There was the need 1mm removal of alveolar crest using a Fedi micro-chisel, leaving the bone crest at a distance of 2 mm from the cemento-enamel junction. The repositioning of the flap through internal vertical quilter type suture technique. After 60 days, bleaching technique was performed, in which is used a bleaching agent based on hydrogen peroxide, at a concentration of 37%, and this gel applied once only, for a period of 45 minutes, in two sessions clinical with an interval of 7 days between the first and second<sup>5,6</sup>.



**Figure 2.** Crown increase being done.

Following bleaching, after a period of 14 days, the patient was molded with silicone by condensation Need (Dentsply), for making a plaster model which was conducted waxing diagnosis of dental elements 11, 12, 21 and 22. Then it was held guides to preparation and restorative guide. The preparation technique for indirect facet used was wearing the old restorations with diamond points in 2135 (KG Sorensen), and checking with wear guides at all times in preparation to measure the spaces for laminates. Later finishing was done at low speed with the cutters 2135 ff (KG Sorensen) and sanding discs for finishing (Figure 3).



**Figure 3.** Finalizing dental preparations note that there were a lot of composites on vital teeth.

The gingival terms were highlighted by receding gums wired Ultrapack # 00 (Ultradent). For molding was used the technique of double molding, initiated with the addition curing silicone heavy and then the lighter the material used was Virtual addition of silicon (Ivoclar Vivadent) and the antagonist was molded with the same material. Molds sent to the laboratory accompanying their photo of preparation and marking of laminated color (A1). Before dismissing the patient were carried out with the temporary bisacrylic resin Protemp 4 (3mespe) using

the guide for the Mockup. Obtained ceramic laminated lithium disilicate (E-max), the tests were made on the prepared teeth, were first proven tooth for tooth, after all teeth together and then tested with the test folder try-in color A1 and translucent light-curing of the resin cement Allcem Venner (FGM). We opted for the color A1 for cementation for further harmonization with the rest of the healthy elements.

The pieces, etched with 10% hydrofluoric acid Condac porcelain (FGM) for 20 seconds, were washed in phosphoric acid and in sequence applied rubbing micro-bush In order to remove residues left by the first acid. They were then washed and received a Prosil silane layer (FGM) anticipated evaporation and deposited universal adhesive Ambar (FGM) in laminates.

Dental elements, etched with 37% phosphoric acid Condac (FGM) for 15 seconds, followed by washing the same time. After drying with absorbent paper, points in order to keep the moist dentin shine. Following was passed adhesive and all teeth, resin cement placed in ceramic pieces, which have been adapted to the preparation at once. Removed the coarse cement excesses with dental floss, resin brush in the cervical and cleaning with gauze on the buccal aspect. After the end of the cleaning was done light curing for 5 seconds in the incisal portion and final removal of excess with explorer. Complemented is then curing the face of each tooth for 40 seconds. Finally removed the remaining excesses and made the occlusal adjustments (Figure 4).



**Figure 4.** Aspect of the new smile.

### 3. DISCUSSION

Has been a growing number of cases, which show the aesthetic efficiency, and high longevity of ceramic restorations, making them the safest option in meeting the expectations of patients<sup>7</sup>. On the other hand, the disadvantages of this type of restoration include biological cost, possibility of sensitivity dentin, irreversibility of preparation, hard repair (in case of fracture), and complexity in the execution of clinical and laboratory steps<sup>8</sup>.

The ceramic used in the clinical case IPS E.max (Ivoclar Vivadent) is different from conventional ceramics, are more resistant to fracture and wear<sup>9</sup>. This ceramic stood out by having a great homogeneity, reduced porosity and optical characteristics similar to natural teeth. However, some authors have indicated that the main reason for failure of ceramic restorations is the fracture, which is usually associated with inadequate tile thickness, the shape of the preparation, the occlusion of the patient, cementing agents and internal defects of the ceramic<sup>10</sup>.

However, the most common laboratory process used is different injected into a feldspathic ceramic which is held in a stratified manner can achieve greater translucency of the incisal edge<sup>11</sup>. The success of any aesthetic treatment depends on several factors: training and expertise on the ceramic characteristics to be used. To make a metal-free porcelain is used a conventional technique from 2.0 mm up to 0.2 mm without needs to wear the tooth enamel.

The gingivoplasty in association with ceramic restorations IPS system (E-max) are shown as an excellent choice in the aesthetic and functional rehabilitation of worn teeth, broken or conoides and gummy smile.

However, the gingivoplasty this contraindicated when the patient has heart disease or uncontrolled diabetes, flabby gum, shallow palate, poor plaque control, small amount of attached gingiva, pronounced external oblique line, use of corticosteroids or anticoagulants, with current acute infection, intraosseous puruses and handbags with different depths<sup>11,12</sup>.

#### 4. CONCLUSION

Should not base the smile esthetics only on the dental elements, but the facial harmony. So a correct facial analysis (bipupilar plan, online media, dynamic lip and teeth), make a better diagnosis, thus improving the correct ratio of red and white aesthetics. Ceramic veneers are an excellent option for cases of chromatic and morphological changes as it mimics intrinsic characteristics of dental elements, ensuring beauty, durability and consequent excellence to the work carried out.

#### REFERENCES

- [1] Magne P, Belser U. Estética dental natural. In: Magne P, Belser U. Restaurações adesivas de porcelana na dentição anterior: uma abordagem biomimética. São Paulo: Quintessence. 2003; 57-96.
- [2] Kelly JR, Nishimura I, Campbell SD. Ceramic in dentistry: History and historical roots and current perspectives. J Prosthet Dent. 1996; 75(1):18-32.
- [3] Dallelaste FL, Corrêa GO, Marson FC, Filho MA, Lolli LF, Silva C. Correção de sorriso gengival pela técnica. PerioNews. 2013; 337-41.
- [4] Marson FC, Favaretto F, Silva C, Michida SMA, Lolli LF, Correa G. Análise da inter-relação entre estética periodontal e dental. Rev Dental Press Estét. 2012; 9(2):58-68.
- [5] Marson FC, Sensi LG, Reis R. Novo conceito na clareação dentária pela técnica no consultório. R. Dental Press Estét., Maringá. 2008; 5(3):55-66.
- [6] Marson FC, Sensi LG, Strassler H, Riehl H, Reis R. In-office bleaching gel application times: clinical evaluation. In: International Association For Dental Research, 86., 2008, Toronto. Proceedings. Toronto: International Association for Dental Research. 2008.
- [7] Fiorini M. Facetas de porcelana. 2004. Tese de Doutorado.
- [8] Kina S, Bruguera A. Invisível: restaurações estéticas cerâmicas. Maringá: Dental Press; 2007.
- [9] Gonçalves AM, Reis JIL, Mandarino F. Facetas laminadas prensadas (IPS Empress). JBC. 1998; 2(9):213.
- [10] Krämer N, Frankenberger R, Pelka M, Petschelt A. IPS Empress inlays and onlays after four years — a clinical study. J Dent. 1999; 27(5):325-31.
- [11] Todescan FF, Pustiglioni FE, Carneiro SRS. Aumento de coroa clínica com finalidade estética e terapêutica. In: Cardoso RJA, Gonçalves EAN. São Paulo: Artes médicas; 2002.
- [12] Stoll LB, Novaes AB. Importância, indicações e técnicas do aumento de coroa clinica. Rev Assoc Paul Cir Dent, São Paulo. 1997; 51(3): 269-73.