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Esthetic Correction of Smile in Cases of Severe Gingival Margin Misalignment

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At various moments in the clinical life of every dental surgeon, cases of high complexity appear not only due to their technical difficulty, but also to patient's expectation. The example of the clinical resolution of the case described in this edition shows how important it is that the professional who performs Aesthetic Dentistry is always surrounded by professionals from areas related to the restorative part, respecting the biology and desires of each patient.

DESCRIPTION OF THE CLINICAL CASE

The clinical case described in this issue is a female patient who wished to change her smile. She presented reports of unsuccessful dental

treatments that left her unsatisfied when smiling. After the careful analysis of the case, always based on the clinical history, radiographs, photographs and the patient's expectations, a planning that involved a high degree of professional responsibility was carried out.

The patient had a poorly positioned implant of the # 22 element performed more than 15 years ago, which impaired all the harmony of the gingival architecture. In addition, there was a microtooth in element # 12, poorly made resins and a horizontal inclination in the upper arch that contributed to the disharmony of her smile. It was possible to note the large discrepancy that

How to cite: Arbex Filho J, Dias KG, Carvalho VM. Esthetic Correction of Smile in Cases of Severe Gingival Margin Misalignment. J Clin Dent Res. 2017 Apr-June;14(2):28-33.

DOI: <https://doi.org/10.14436/2447-911x.14.2.028-033.cli>

Submitted: May 02, 2017 - **Revised and accepted:** May 10, 2017.

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existed at the zenith of element # 22 in relation to element # 12, which limited the conduction of the case only with restorative procedures.

PLANNING

After a careful analysis by our multidisciplinary team, always listening and trying to fulfill the wishes and desires of the patient, surgery was proposed in order to correct the gingival zenith. Despite the poorly positioned implant, its periimplant condition was stable and healthy.

Thus, it was decided to maintain the implant and plan the surgery according to the gingival margin of element # 22 and the dynamics of the upper lip, obeying the limits of the width / height ratio of the crowns. The treatment proceeded with the increase of the clinical crown of elements # 11, # 12, # 13, # 21 and # 23, with gingivectomy, full thickness flap elevation, osteotomy and osteoplasty on the buccal surface of the teeth. The flap was repositioned and sutured with 6-0 polypropylene. The estimate for suture removal was



Figure 1: A) Frontal smile photograph before the restorative treatment, showing the severe misalignment of the gingival margin. The degree of complexity was high, due to the presence of an implant in the region of element # 22. B) Periapical radiograph showing dental implant replacing of element # 22 - which was maintained, due to the possibility of damage to the bone tissue if removed.



Figure 2: Initial intraoral photograph with retractor, prior to the restorative treatment and gingival aesthetic correction.



Figure 3: Initial intraoral photograph showing details of the dental characteristics and gingival architecture.



Figure 4: Postoperative image showing 7 days postoperative after aesthetic surgery for correction of the gingival level.



Figure 5: Postoperative: frontal photograph of the smile three weeks after aesthetic gingival surgery.



Figure 6: For the patient's comfort, avoiding pain during the healing phase, composite resin restorations were performed, covering and protecting the cervical region exposed by gingival correction surgery. Note: due to the presence of radicular dentin in some teeth, composite resin placement during the healing phase minimizes patient discomfort, and should be performed as a routine procedure whenever necessary.



Figure 7: After a period of 45 days of gingival plasty, preparations were made for ceramic restorations. Note the color variation of the substrates, making preparations with a little more wear needed for the homogenization of the ceramics. Even so, there was predominance of enamel on all teeth after tooth preparation.

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Figure 8, 9: After the preparation, the molding procedure and the installation of provisionals with bisacrylic resin was carried out. This step can be seen both in the intraoral photo and in the extraoral photo.



Figure 10: Ceramic restorations positioned in the rigid model, which serves to evaluate the proximal contacts and general anatomy of the case.



Figure 11, 12: Images showing the ceramic restorations photographed on top of a mirror: it is possible to visualize the thinness of the restorations, even in the full crowns (full veneer type).



Figure 13: Frontal smile after the conclusion of the case.



Figure 14: Intraoral photography with the retractor after the restorative treatment with surgical correction of the gingival margin.



Figure 15-18: Intraoral photographs obtained after the completion of the multidisciplinary aesthetic treatment.



Figure 19: Image showing the result obtained when planning and clinical sequence are performed in a way that respects the biology and aesthetics of the case in question.

7 to 10 days. The patient was released for initial restorative work after 8 weeks. Under conditions such as this, in which it is desirable not to interfere with the implant region, flap elevation does not involve the distal and mesial surfaces of the teeth adjacent to the implant. In this region, we opted for a flapless osteotomy in order to preserve the most of the periimplant tissues.

After preparation and with previous wax-up, custom mock-up / provisional was done, being this an important guide for the execution of the definitive porcelains.

This step in planning became fundamental in our clinical protocol, not only in complex procedures like this, but also in all our cases of ceramic rehabilitation in the anterior upper hemi-arch. After the insertion of the bisacrylic resin in the mouth, the enamel adhesive is applied over the entire surface of the provisionals and the teeth are sculpted in composite resin, modifying very important details for the predictability of the final result. After all this work and with subtle modifications made, we molded the patient again and sent the model to the laboratory; the model served as a guide for the prosthetist at the time of making the ceramics. It is important to highlight the importance of this clinical stage to obtain predictability in the final result. Through it, we can observe the patient's desires and longings to achieve the perfect smile.

With the laminates in hand, we go to the cementing phase. First, the dry test with adjustments in the proximals, if necessary, and observing the margins and color of the porcelains in the mouth. An important step in this phase is the choice of the cement color to be used in cementation. Due to the very thin thickness of the laminates, the cement color becomes an important point for the success of the restorative work. We made the so-called try-in and selected the cement to be used.

We believe that these clinical steps are fundamental to the success of the restorative work, respecting the harmony of the smile and the biology of the gingival tissues.

CONCLUSION

What is important in this case is not only the final resolution; it is necessary to analyze, from a technical point of view, the decision making about the maintenance of the dental implant. Currently, it is common to opt for removing the dental implant (explantation) when it is not in proper positioning. This is perfectly acceptable from a scientific point of view, showing excellent results with guided bone regeneration and tissue techniques; however, in our view, every clinician should, whenever possible, seek solutions that fit within the patient's wishes and desires, avoiding unnecessary and invasive procedures only to obtain a better positioning of the implant. We agree that there are cases where the implant needs to be removed, but this decision should only be made if all other options are discarded.

The resolution of the present case illustrates the importance of multidisciplinary planning in Aesthetic Dentistry.

Suggested Bibliography:

1. Arbex Filho J. Direct composite resin x ceramic laminates: the choice. *J Clin Dent Res.* 2016 July-Sept;13(3):45-52.
2. Arbex Filho J. The timing of transition from composite resin to ceramic laminate veneers and "contact lenses". *J Clin Dent Res.* 2017 Jan-Mar;14(1):30-7.
3. Henriques PH, Carvalho VM. *Cirurgia plástica periodontal e estética em Periodontia.* 1a ed. São Paulo: Ed. Santos; 2003.
4. Henriques PH, Carvalho VM. *Cirurgia plástica periodontal e estética em Periodontia.* 2a ed. São Paulo: Ed. Santos; 2004.
5. Becker W, Ochsenbein C, Becker BE. Crown lengthening: the periodontal-restorative connection. *Compend Contin Educ Dent.* 1998 Mar;19(3):239-40, 242, 244-6 passim; quiz 256.
6. Garber DA, Salama MA. The aesthetic smile: diagnosis and treatment. *Periodontol* 2000. 1996 June;11:18-28.
7. Carnevale G, Sterrantino SF, Di Febo G. Soft and hard tissue wound healing following tooth preparation to the alveolar crest. *Int J Periodontics Restorative Dent.* 1983;3(6):36-53.