A contemporary view on Dentistry. Accurate diagnosis guiding functional and aesthetic results

Luis Calicchio[1], Marcelo Kyrillos[2], Marcelo Moreira[3], Ertty Silva[4], Gustavo Giordani[5], Fernanda Meloti[6], Fabio Cabral[7], Wagner Nhoncance[8], Sandro Souza[9], Josias Silva[10]

Dental surgeon, Universidade Estadual de Campinas (UNICAMP), School of Dentistry (FOP/UNICAMP), Piracicaba, São Paulo, Brazil. 2) Dental surgeon, Universidade de Mogi das Cruzes (UMC), São Paulo, São Paulo, Brazil. 3) Dental surgeon, Universidade de Mogi das Cruzes (UMC), São Paulo, São Paulo, Brazil. 4) Specialist in Orthodontics, Pontifícia Universidade Católica do Rio de Janeiro (PUCRJ), Rio de Janeiro, Rio de Janeiro, Brazil. 5) Specialist in Oral and Maxillofacial Surgery, Universidade Paulista (UNIP), São Paulo, São Paulo, Brazil. International Fellowship in Implantology and Periodontal Cosmetic Surgery, Antwerp, Belgium. 6) PhD in Orthodontics and Facial Orthopedics, Universidade Estadual Paulista (UNESP), School of Dentistry, Araraquara, São Paulo, Brazil. 7) Dental surgeon, Universidade Estadual de Campinas (UNICAMP), School of Dentistry (FOP/UNICAMP), Piracicaba, São Paulo, Brazil. 8) Dental Prosthesis Technician (DPT-in-chief), Precision Laboratory, São Roque, São Paulo, Brazil. 9) Dental Prosthesis Technician, Precision Laboratory, São Roque, São Paulo, Brazil. 10) Audiovisual manager, São Paulo, São Paulo, Brazil.

Abstract: *Technology has never been so present in Dentistry as it is today. From diagnosis to clinical procedures, we count on technology that allows us to be more precise and assertive in our treatments.* ***Objective:*** *This article aims to show how technology is changing concepts in Orthodontics, Surgery and Restorative Dentistry.* ***Keywords:*** *Orthodontics. Miniplate. Ceramic veneer. CAD/CAM.*

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Contact address: Luís Calicchio
Rua João Lourenço, 564 - Vila Nova Conceição, São Paulo / SP – CEP: 04.508-030
E-mail: luis@atelieoral.com

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Patients displayed in this article previously approved the use of their facial and intraoral photographs.

Introduction

In the last few years, with the increasing importance attached to aesthetics by the Brazilian population, the demand for miraculous treatment has been huge in dental offices. In order not to miss the opportunity of "catching" patients, clinicians end up offering aesthetic treatment, often ignoring biological concepts and promising immediate benefits, which is unsustainable over the years. Restorative techniques are often mistakenly recommended, thus causing problems to patients over time, particularly regarding gingival health, restoration longevity and the natural aspect of outcomes. Such a trend is worrisome, since excellent restorative techniques become questionable and frequently rendered as doomed due to the irresponsible attitude adopted by unprepared clinicians. Exaggeration is evident in several treatment modalities producing extremely white, long, large teeth as a result of overcountouring. Without mentioning the increasing trivialization relative to stomatognathic system function. Thus, the following question arises: What does function mean? We often hear by "trendy" clinicians that treatment they perform is function-based... Canine guidance and protrusive movement are restored. Can function be restricted to that? How about root tipping? What is their position into the basal bone? What is the status of condylar position? How are muscles behaving? What are the consequences to patient's face? Well, if you could not answer those questions, it is high time you start reviewing your concepts on planning and treatment.

Technology has been introduced to Dentistry and it is, in fact, changing diagnosis and treatment implementation. The possibilities that allow us to thoroughly understand what is going on with patients are fabulous: CT scans providing tridimensional assessment of patients' bone and dental structures, examination associating soft tissues with hard ones; laboratorial equipment (CAD/CAM) that build teeth; microscopes that clear clinicians' vision and, as a result, allow them to precisely perform the intended procedures. There is so much news! Nevertheless, in order to take advantage of all that, we have to be willing to change. Change is indeed painful in our daily routine; however, it is key to evolution and learning.

Thus, the aim of this article is to present a new understanding of Cosmetic and Functional Dentistry, in which accurate diagnosis guides treatment aiming to provide patients with outcomes based on occlusion, condylar position, facial and dental aesthetics, all of which are of paramount importance for treatment predictability and longevity.

"Aesthetic and functional outcomes walk side by side, and depend on one another to achieve treatment longevity. Smile beauty is no longer restricted to focusing on tooth proportion".

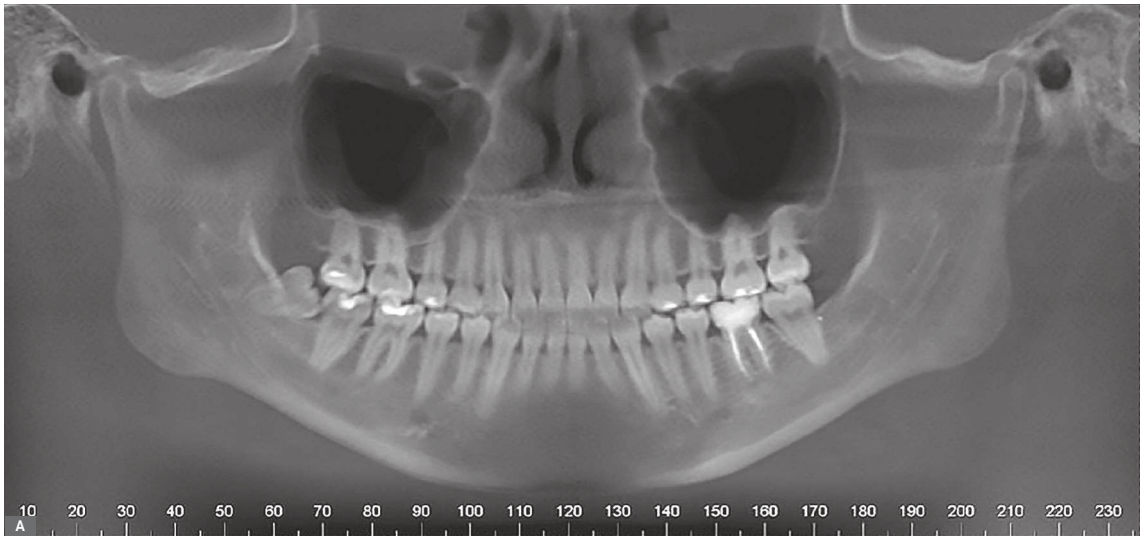
Figure 1: Initial extra and intraoral photographs: **A**) profile view; **B**) frontal view; **C**) frontal view at smiling; **D**) right lateral view; **E**) frontal view; **F**) left lateral view; **G**) maxillary occlusal view; **H**) mandibular occlusal view.

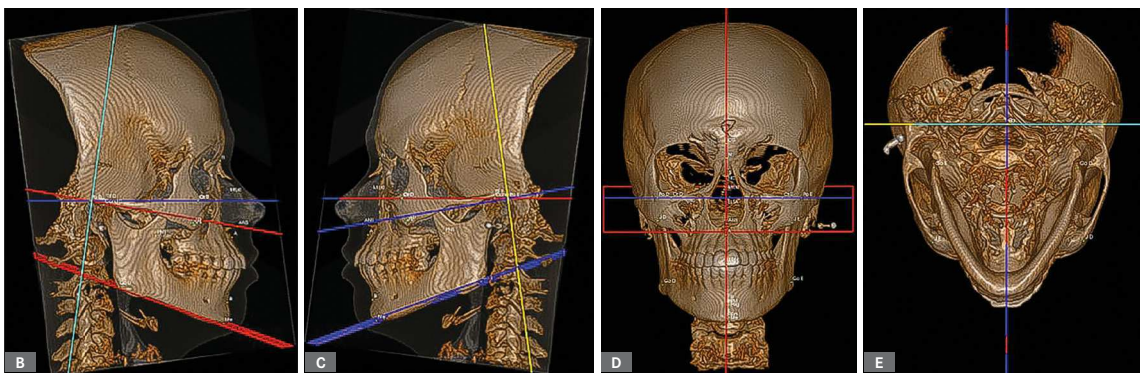
Case report

Diagnosis

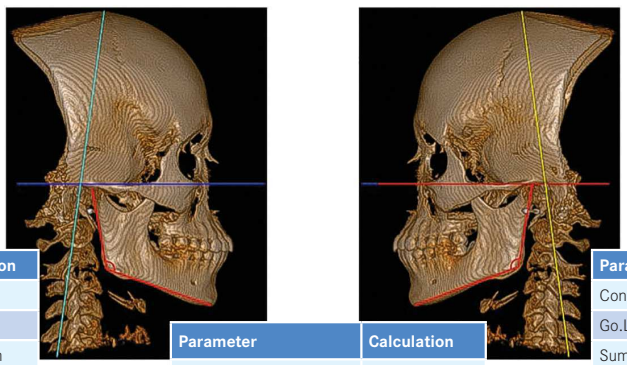
Female 21-year and 9-month old Caucasian patient presented with a major complaint of "full profile." Facial and intraoral assessment revealed a convex profile, satisfactory nasolabial angle, decreased chin-neck line, Class I malocclusion, bimaxillary protrusion and maxillary and mandibular crowding in the anterior region (Figs 1A to 1H).

SEG-3D tomographic examination was used for diagnosis. Panoramic image obtained from tomographic examination revealed the presence of tooth #48 (Fig 2A). 3D reconstruction lateral view revealed mesofacial growth pattern and bimaxillary protrusion (Figs 2B and 2C). 3D reconstruction antero-posterior/inferior-superior views and craniometry revealed facial symmetry (Figs 2D to 2F). A close-up view of the anterior region revealed mandibular incisor buccolingual tipping and maxillary incisor uprighting (Fig 2G). Temporomandibular joint (TMJ) images (Figs 2H to 2J) revealed condylar retroposition into the joint cavities. Diagnosis revealed Class I malocclusion with bimaxillary protrusion and condylar retroposition.





Mandibular craniometric evaluation



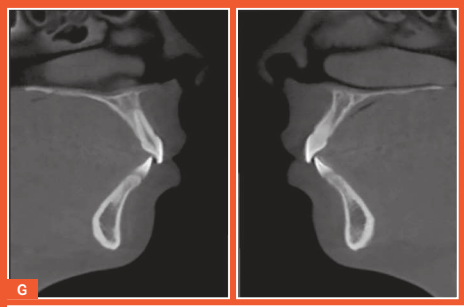
Parameter	Calculation
Cond.R Go.R	53.77mm
Go.R Me	83.44mm
Sum body-ramus R	137.22mm

Parameter	Calculation
Diference Sum R and Sum L	0.32mm

Parameter	Calculation
Cond.L Go.L	54.63mm
Go.L Me	82.26mm
Sum body-ramus L	136.89mm

F

Figure 2: Initial SEG-3D protocol images. **A**) Panoramic view obtained from tomographic examination. **B**) Right lateral view of 3D reconstruction. **C**) Left lateral view of 3D reconstruction. **D**) Anteroposterior view of 3D reconstruction. **E**) Inferior-superior view of 3D reconstruction. **F**) Mandibular craniometry. **G**) Sagittal slices of teeth #11 and #41 / #21 and #31 regions. **H**) Right TMJ view, in the three planes of space, and of 3D reconstruction. **I**) Left TMJ view, in the three planes of space, and of 3D reconstruction. **J**) Approximate view of condylar positioning.



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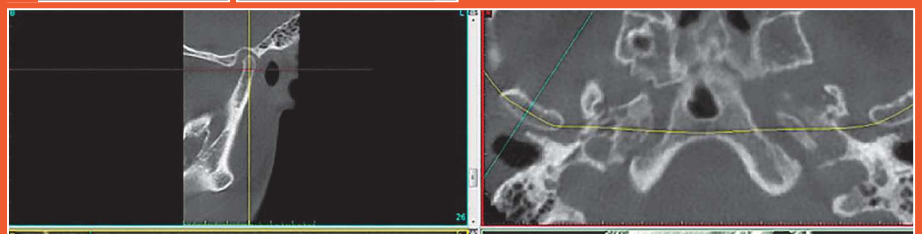

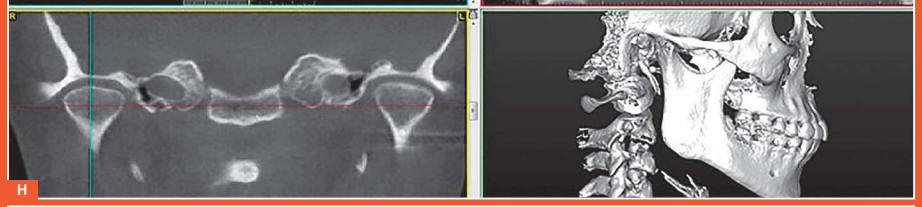

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The proposed treatment plan included miniplate-assisted anteroposterior bone remodeling/maxillary and mandibular distalization. Mandibular distalization would be greater than maxillary distalization, so as to allow anterior and, as a result, central positioning of mandibular condyles. Maxillary distalization would be performed under torque control of maxillary incisors, so as to allow forward mandibular sliding. Extraction of tooth #48 was required (Fig 3).

Orthodontic treatment

Treatment began with maxillary and mandibular fixed appliances placement (Ricketts prescription, 0.018 x 0.030-in slots). After appliance placement, four miniplates were installed.

Surgical treatment

Miniplates surgical placement

Miniplates placement must follow an appropriate, thorough protocol. Initially, one should understand the anatomical structures of which the area is composed of. In the maxilla, miniplates must be preferably placed in areas of maxillary buttresses, such as the zygomatic and canine buttresses. Those structures are appropriate in the maxilla due to having solid bone, thus favoring screw retention. By opting for such structures, we keep a certain distance from the maxillary sinus which is usually composed of thin, low-density bone for device fixation. In the mandible, however, miniplates are typically placed in the

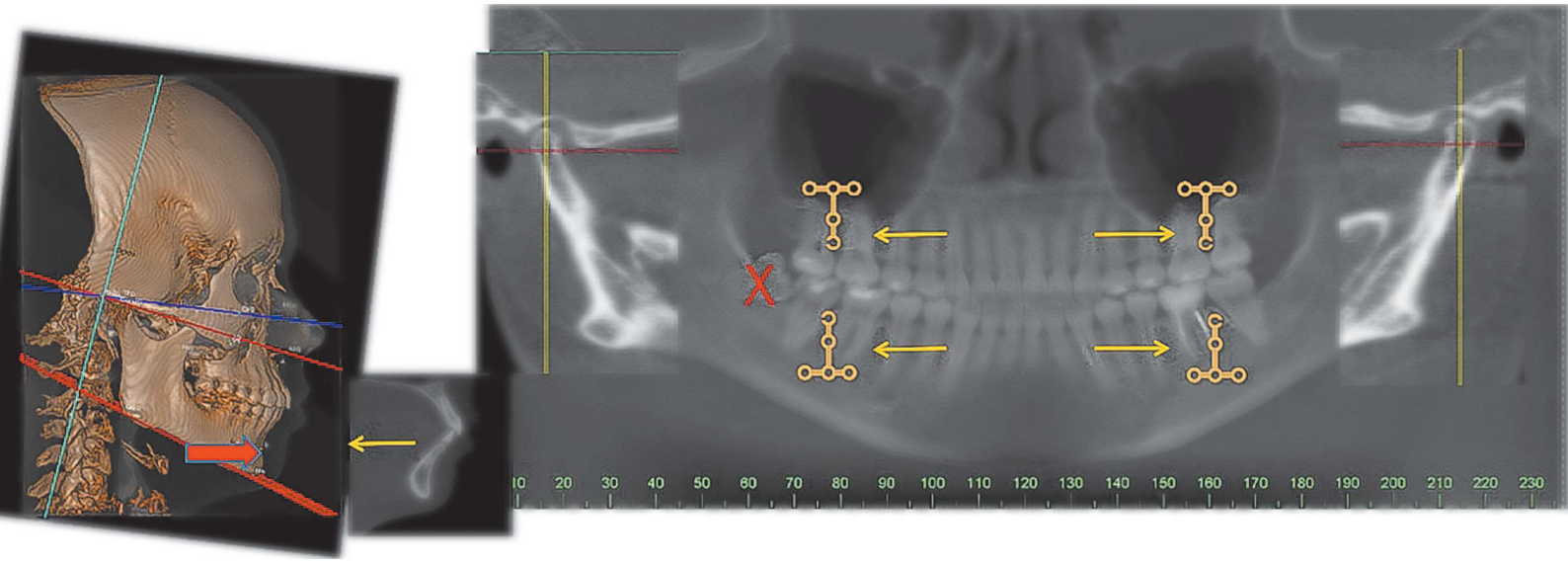

Figure 3: Treatment planning.

mandibular body or external oblique ridge, both of which are anatomical structures with high bone density, thus favoring satisfactory screw anchorage. Attention should be paid to anatomical variation of the inferior alveolar nerve which, in some patients, is buccally positioned. Thus, monocortical screws should be used in order to avoid risk of injuring the region.

Another important factor to be considered is the selection of retention material. The system of choice must provide surgeons with a wide range of screws, allowing them to be able to deal with different situations and anatomical variations. Miniplates must be stiff enough to bear orthodontic treatment and remain undamaged during therapy.

CT scans and periapical radiograph are imperative. The anatomical site where miniplates will be placed and the length of roots found in the area must be carefully studied for miniplate length selection. A potential cause of failure is screw placement too near the roots, which hinders bone remodeling and allows occlusal force to be transmitted from teeth to screws. Miniplate design is selected on the basis of the anatomical structure receiving the device. In the mandible, L-shaped miniplates are recommended, with the shorter arm sticking up anteriorly, which favors surgical placement. The maxilla has maxillary buttresses; for this reason, T-shaped and Y-shaped miniplates are recommended to achieve satisfactory bone fitting and to keep a certain distance from the maxillary sinus. In our clinical practice, we use T-shaped miniplates for all cases, always with three retention screws, which ensures long-term stability. Miniplates placed only with two screws tend to become loose easily during treatment.

Some authors have diverging opinions regarding miniplates positioning. Kuroda et al[1] believes miniplates placed in the posterior mandible are more likely to fail than those placed in the posterior maxilla. Chen et al[2] believe miniplates placed in the maxilla are usually less stable than those placed in the mandible. In or clinical practice, whenever we select a proper, high-quality anchorage device, we study the anatomical structures involved as well as root length (with the aid of CT scans), and the success rates of miniplates placed in the maxilla and mandible are equal.

Miniplates positioning is not determined by the surgeon himself, but by the orthodontist who will guide him towards the most appropriate positioning, which will depend on future orthodontic movement.

In the case reported herein, miniplates were recommended for distalization movement; thus, four of them were placed, one in each quadrant. Miniplates must be slightly distally placed between first and second molars, which favors orthodontic mechanics. They also must keep a distance of 3 to 4 mm from the arch.

We worked with a prototype obtained from craniofacial tomography (SEG protocol), with which we have the opportunity of pre-bending miniplates before the surgical procedure. Thus, we used the technology

available to submit the patient to an extremely fast and little-invasive procedure, since miniplates (NEOORTHO™, Produtos Ortopédicos, Curitiba/PR, Brazil) had been made custom to the patient before the procedure, thereby reducing surgical time employed for bending and fitting of miniplates to the anatomical structures. The devices were sterilized before surgery, and miniplates positioning was registered on each sterilized miniplate package.

One hour before the procedure, 1-g amoxicillin, 8-mg dexamethasone and 40 drops of dipyrone were administered to the patient.

The patient was asked to use 0.12% chlorhexidine digluconate as mouthwash for one minute immediately before the procedure.

Surgery was conducted under local anesthesia. A horizontal incision measuring approximately 15-20 mm in length was made with a 15c-blade scalpel for access and full bone exposure, keeping a distance of approximately 8-9 mm from the gingival margin. Miniplates had been pre-bended; however, there was a need for adaptation before actually placing them. The miniplate must be placed in passive fit, since some of the factors responsible for failure are impaired miniplate fitting to the bone surface and excessive torque applied to the screws while fitting the miniplate. Once the device has been properly fit, it is held in position and perforation is carried out with the aid of a drill 1.6-mm in diameter, so as to have a self-tapping screw, 2-mm in diameter and 5-mm in length, placed. The drill must be smaller in diameter in order to favor screw retention.

The three screws were secured in place before we checked for miniplate mobility. Miniplates must be stiff enough to bear orthodontic treatment.

Continuous suture was made with Catgut 4.0 wire, so as to provide good fitting and flap closure, leaving a portion of the miniplate exposed to the oral environment. Once the suture had been made, miniplates were immediately activated into the appliance, so as to provide the patient with the benefits of movement on the same day of placement. There is no need to wait for healing before activation.

The procedure was carried out in quadrants 1, 2 and 3. In quadrant 4, the same steps for miniplate placement were taken, in addition to extraction of a semi-erupted third molar during surgery. Also, a 7-horizontal-incision was made to have better access to the region.

Antibiotics and anti-inflammatory drugs, as well as painkillers were administered, and chlorhexidine was used as mouthwash for seven days. Patients must be aware of the need to keep good oral hygiene with the aid of tooth brushes and daily alcohol-free mouthwash in order to achieve miniplates success and long-term up-keeping.

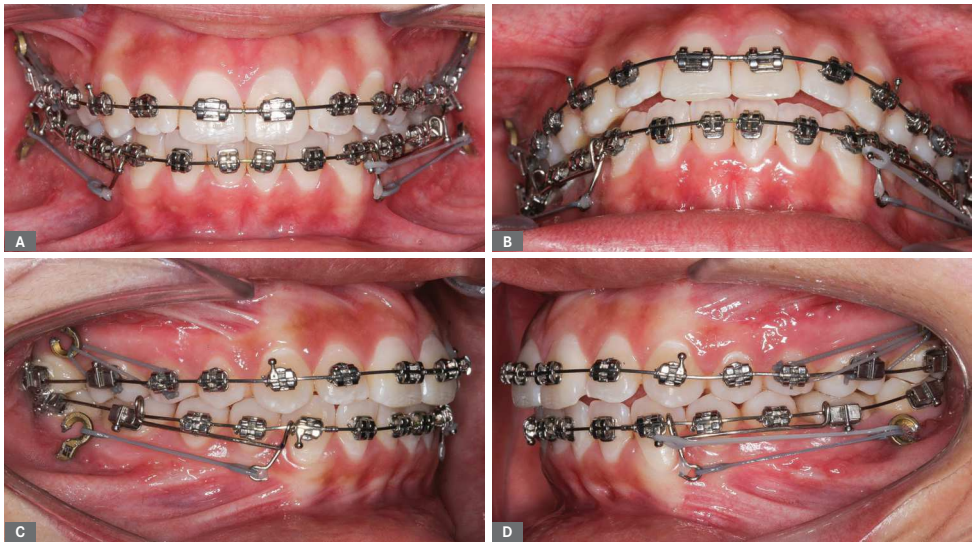

Figure 4: Intraoral photographs during stimulation of maxillary and mandibular bone remodeling. **A**) frontal view; **B**) inclined frontal view; **C**) right lateral view; **D**) left lateral view.

Orthodontic treatment

Since there was a need for greater distalization of mandibular teeth in comparison to maxillary ones, two mandibular steel cursors and maxillary elastics were placed (Figs 4A to 4D).

Once distalization of mandibular molars had been achieved, cursors were removed and both mandibular open springs (used to organize space) and canine e-links were placed up to the miniplates (to achieve distalization of canines). Maxillary open springs were also placed to enhance maxillary incisors positioning, as those teeth were uprighted (Figs 5A to 5C). Excess marginal ridge of tooth #11 hindered anterior mandibular positioning (Fig 5D); therefore, excess was subjected to wear (Fig 5E). Hence, Class II elastics were placed on the right and left sides to activate mandibular repositioning (Figs 5F to 5H).

A new SEG protocol was requested and condyles were found in central position (Figs 6A and 6B); however, maxillary and mandibular incisors (Fig 6C) and facial profile (Figs 6D and 6E) needed improvement.

Brackets were rebonded on teeth #22, #24 and #25, so as to achieve root parallelism (Figs 7A to 7D).

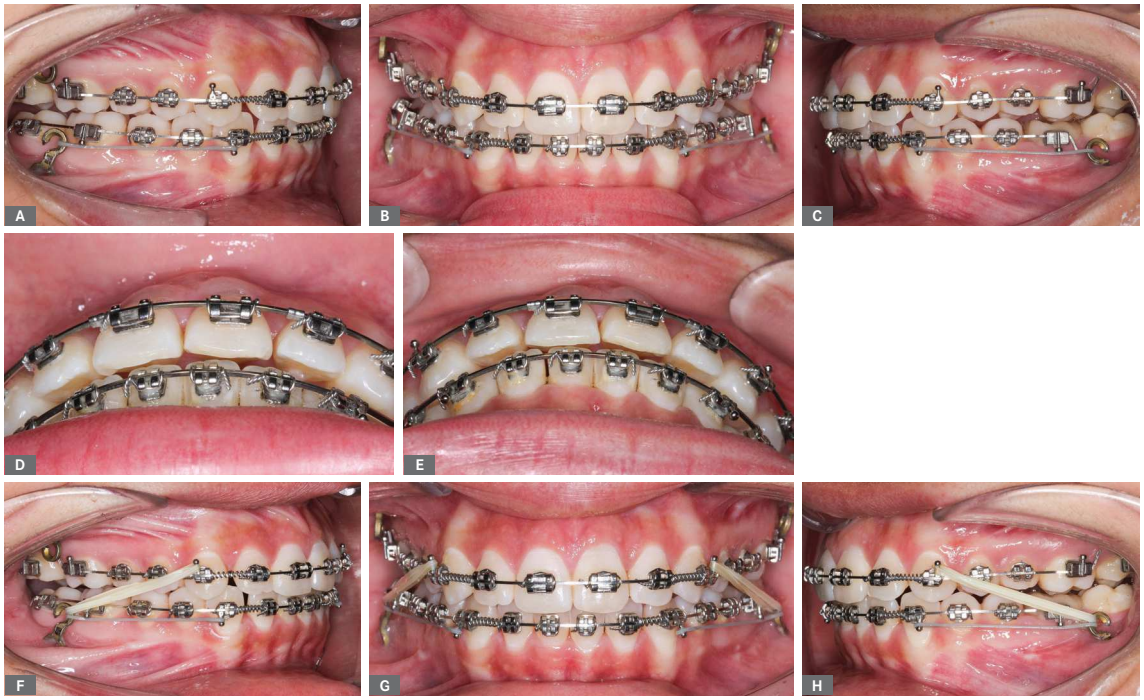

Figure 5: Adjustment of marginal ridges: **A**) right lateral view; **B**) frontal view; **C**) left lateral view; **D**) inclined frontal view before adjustment of tooth #11 marginal ridge; **E**) inclined frontal view after adjustment of tooth #11 marginal ridge; **F**) right lateral view with Class II elastics; **G**) frontal view with Class II elastics; **H**) left lateral view with Class II elastics.

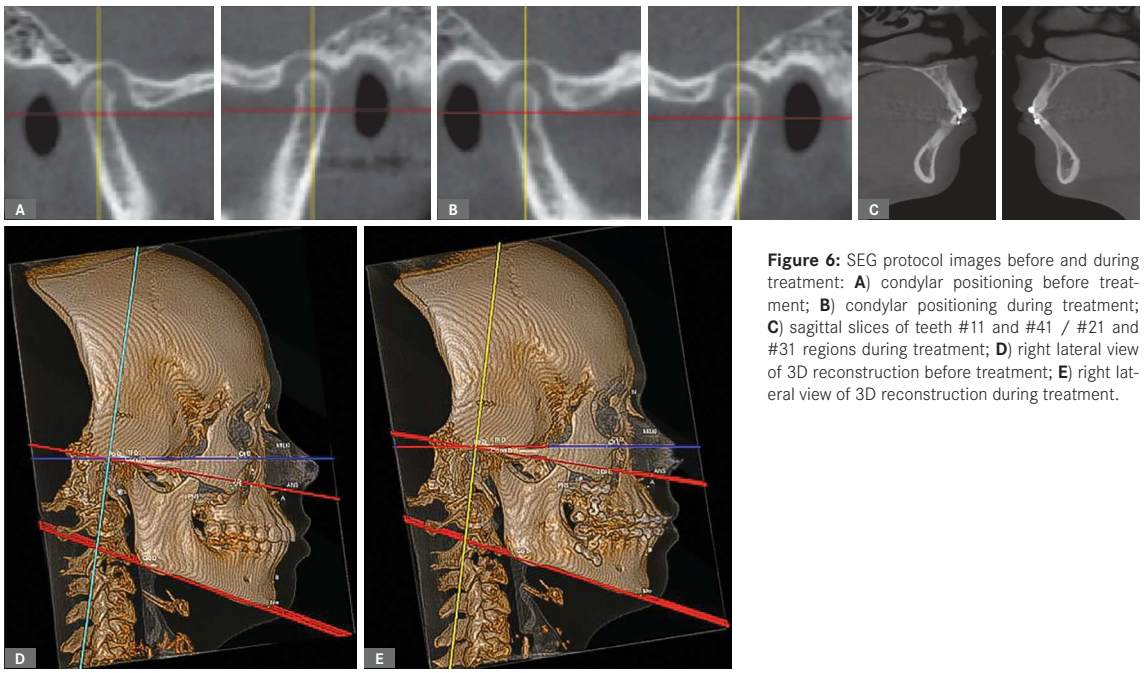

Figure 6: SEG protocol images before and during treatment: **A**) condylar positioning before treatment; **B**) condylar positioning during treatment; **C**) sagittal slices of teeth #11 and #41 / #21 and #31 regions during treatment; **D**) right lateral view of 3D reconstruction before treatment; **E**) right lateral view of 3D reconstruction during treatment.

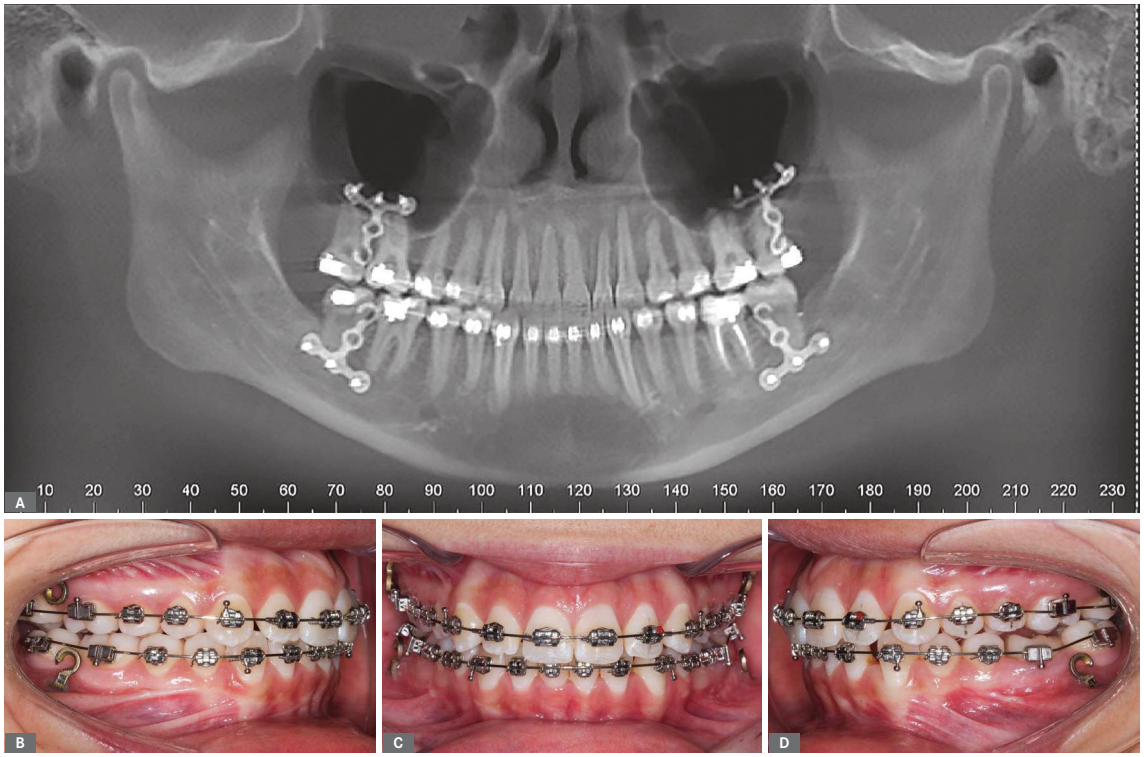

Figure 7: Panoramic radiograph and intraoral photographs after bracket rebonding: **A**) panamoramic radiograph before bracket rebonding; **B**) right intraoral photograph; **C**) frontal intraoral photograph; **D**) left intraoral photograph.

With a view to enhancing incisor positioning, a Philadelphia bridge was placed for maxillary incisors intrusion and buccolingual tipping. In order to avoid the side effect of maxillary molar tipping, those teeth were anchored onto the miniplates with flowable composite. In the lower arch, an open spring was placed between teeth #43 and #41, along with elastomeric chains, for correction of mandibular midline deviation and closure of diastema between teeth #33 and #32 (Figs 8A to 8C).

Mechanics was kept in the upper arch and elastomeric chains were placed from teeth #45 to #35 for mandibular diastemata closure and uprighting of mandibular incisors (Fig 9A to 9C).

Once facial profile and maxillary/mandibular incisor positioning had been improved, the orthodontic appliance was debonded (Figs 10A to 10I). Lateral protrusive guidance was achieved and occlusal adjustment carried out (Figs 10J to 10L). Therefore, the patient was referred for esthetic treatment of tooth #21 and occlusal correction of tooth #36.

Figure 8: Intraoral photographs showing a technique employed for maxillary incisor intrusion: **A**) right lateral view; **B**) frontal view; **C**) left lateral view.

Figure 9: Intraoral photographs during mandibular incisor uprighting: **A**) right lateral view; **B**) frontal view; **C**) left lateral view.

Figure 10: Extraoral and intraoral photographs after orthodontic appliance removal: **A**) lateral view; **B**) frontal view; **C**) intraoral frontal view; **D**) occlusion in anterior view; **E**) right lateral view; **F**) left lateral view; **G**) protrusion movement; **H**) right lateral guidance; **I**) left lateral guidance.


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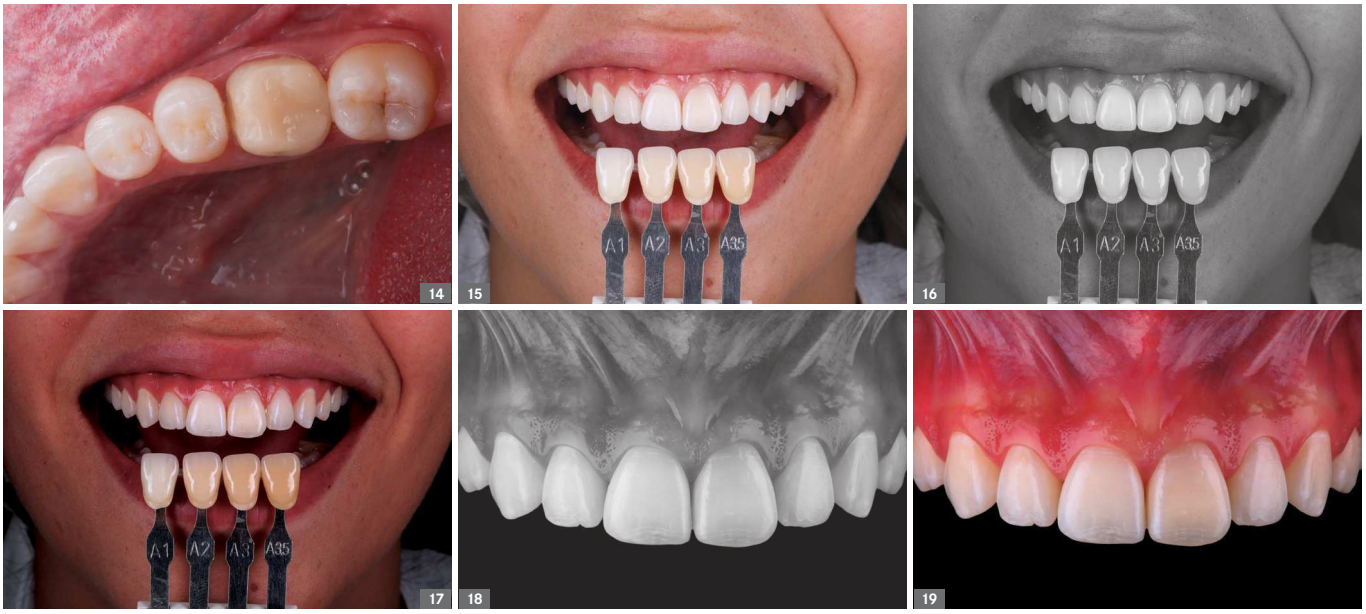
Restorative treatment

Once orthodontic treatment had been finished, the patient was subjected to the protocol performed during her first appointment, which consisted of video, photographs, cast and periapical radiograph taking. With such information in hand, restorative planning was carried out. The patient's chief complaint was a difference in shape and color of tooth #21 (Figs 11 to 12). She also complained about an ongoing unpleasant smell coming from tooth #36 which had shape and color changes (Figs 13 and 14). Treatment planning was thought out on the basis of smile aesthetics and function recovery previously achieved by orthodontic treatment and consisted of placing a ceramic veneer over tooth #21 and crown prosthesis for tooth #36.[3]

The greatest challenge for tooth #21 was color and shape correction, which should be as conventional as possible.[4] To this end, tooth preparation design is key to provide the ceramist technician the space necessary for color correction. How much wear should be performed? Teeth with color changes raise such serious doubt. MacLaren,[5] in 2006, reported that color correction requires ceramic veneers 0.2 to 0.3-mm in thickness. Therefore, in the case reported herein, in which tooth #21 color was A2 and the goal was to achieve color A1, tooth preparation should be 0.3-mm in thickness, thus allowing the ceramist technician to achieve the ideal stratification of ceramic restoration. Another major important point to be considered was the goal to perform minimal wear, so as to ensure complete cementation over the enamel, since it is a well-known fact that this is the type of adhesion lasting the most.

As reported by Bazos and Magne,[6] in 2014, a maxillary central incisor usually has its buccal surface with the following mean dimensions: 0.3-mm in thickness in the cervical third, 0.9-mm in the middle third and 1.0-mm in the incisal third. Taking all the



Figures 11 to 19: 11) post-orthodontic treatment smile; **12**) intraoral view of tooth #21; **13** and **14**) intraoral view of tooth #36; **15**) smile with shade guide; **16**) smile with shade guide in black and white; **17**) smile with high-contrast shade guide; **18**) intraoral view of tooth #21 in black and white; **19**) intraoral view of tooth #21 under high-contrast.

afore-mentioned information into account, thorough analysis of tooth color was carried out with the aid of photographs, thus ensuring satisfactory communication with the technician (Figs 15 to 19).

Analysis revealed that the most significant color difference was found in the middle third of the tooth, with coloration in the cervical region being similar to that of tooth #11. Therefore, supragingival preparation could be performed, thereby ensuring preservation of enamel structure in the most critical area of the tooth. All clinical procedures were conducted under magnification in a microscope (PROergo, Carl Zeiss, Germany), with a view to being as precise as possible during all stages, in addition to ensuring complete records with photographs and videos, since both cameras were attached to the microscope.

The first step taken for preparation was the manufacture of horizontal grooves, carried out with a cylindrical diamond bur, 0.3-mm in depth, used to ensure thickness during preparation (Fig 20). The second step was surface homogenization with a torpedo diamond bur (Fig 21). Subsequently, a pencil bevel diamond bur was

Figures 20 to 26: 20) Grooves manufacturing with a cylindrical diamond bur. **21**) Surface homogenization with a torpedo diamond bur. **22**) Proximal grooves manufacturing with a pencil bevel diamond bur. **23**) Distal grooves manufacturing with a pencil bevel diamond bur. **24**) Preparation before finishing and polishing. **25**) Buccal surface finishing with Sof-Lex disc. **26**) Rounding of living angles with Sof-Lex disc.

Figures 27 to 32: 27) Preparation polishing with ceramic restoration finishing rubber. **28**) Finished preparation. With this photograph, the technician analyzes enamel opacification. **29**) Finished preparation under high contrast. With this photograph, the technician analyzes dentin morphology and enamel thickness. **30**) Finished preparation with shade guide (important to communicate with the laboratory). **31**) Finished preparation with shade guide under high contrast (important to communicate with the laboratory). **32**) Ceramic restoration application.

used for manufacture of proximal grooves (Figs 22 and 23). A torpedo diamond bur (fine grain) was attached to an engine and used to ensure the final preparation design (Fig 24). Finishing was performed with a Sof-Lex disc (3M ESPE) to ensure surface smoothness and rounding of living angles (Figs 25 and 26).

Final polishing was performed with rubber for ceramic restorations (EVE Ernst Vetter GmbH, Germany) (Fig 27). For the finishing phase of preparation, photographs used to communicate with the laboratory are key to the understanding of remaining substrate color (Figs 28 to 31). The next step consisted of final impression with double addition silicone (Honigum/Silagum, DMG). The ceramics of choice was IPS d.SIGN (Ivoclar Vivadent Brasil, Barueri/SP, Brazil.) Difficulties involved in the reproduction of a tooth rich in details force us to understand the mechanism of light reflectance of ceramic material. In this context, proper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assessment of preparation and dental images are key to decision-making relative to thickness and degree of opacification of the ceramic material to be used. In the case reported herein, opaque dentin B1 shade was used for sealing (wash-bake), with a view to neutralizing substrate darkening (Fig 32).

Subsequently, BL1 thin dentin paste was applied, with incisal reduction and application of BL1 + TS-1 transition dentin in a 1:1 ratio, in areas of light absorption, while respecting inner chromatic morphology (Fig 33). Soon after assessing the outcomes of the first application, the degree of enamel opacification/translucency to be used was established. In the case reported in this article, a mixture of opal effect 3 + BL1 dentin in a 2:1 ratio was used (Fig 34).

Once the second application had been applied, restoration was subjected to finishing, texturing and glaze application procedures (Figs 35 to 37). Final restoration try-in began with surface cleaning carried out with pumice and water (Fig 38). Subsequently, dry try-in was carried out, so as to check for marginal fitting, contacts and shape of the restoration (Figs 39 and 40). Wet try-in was carried out to check for restoration coloration (Figs 41 and 42).

Once it has been approved by both clinician and patient, the restoration is ready to undergo surface treatment and cementation. Surface treatment of the ceramic, fluorapatite-based restoration IPS d.SIGN (Ivoclar Vivadent) followed the following steps:

1) 10% hydrofluoric acid-etching for 90 seconds.
2) Copious irrigation with running water, followed by drying.
3) 35% phosphoric acid-cleaning (rubbing the surface for 10 seconds).
4) Copious irrigation with running water, followed by drying.

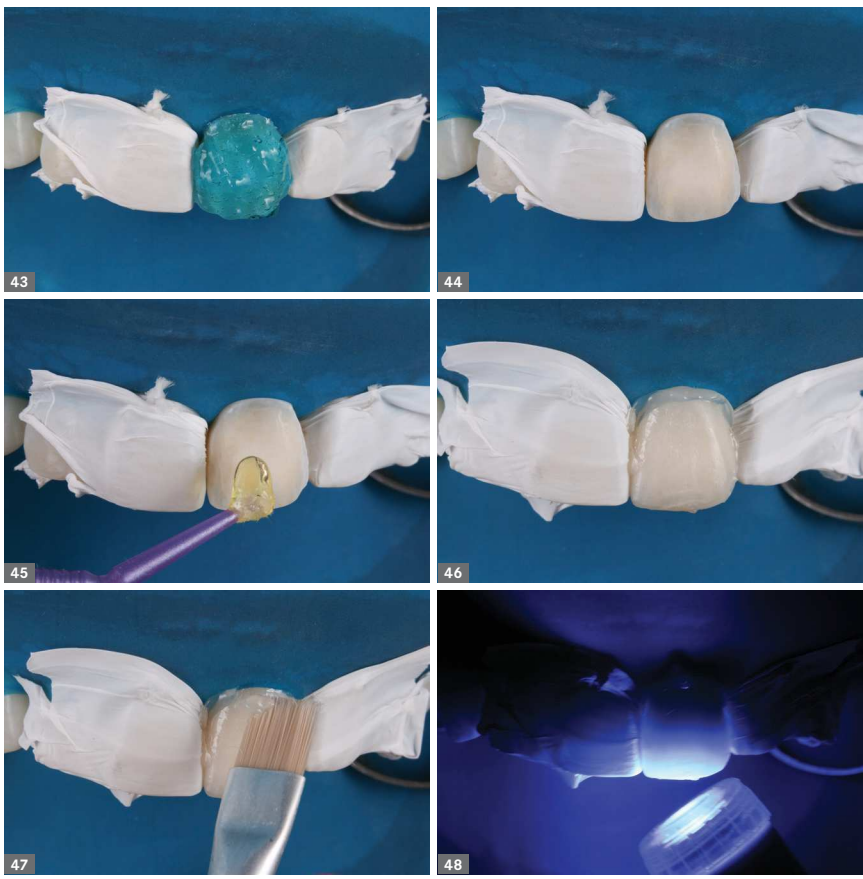
Figures 33 to 42: 33 and **34**) Ceramic restoration application. **35**) Texturing of ceramic restoration. Note lateral light used to allow texture to be seen. **36** and **37**) Finished ceramic veneer. **38**) Preparation cleaning. **39**) Ceramic veneer seating. **40**) Checking for marginal fitting and contacts. **41**) Water used for wet try-in. **42**) Checking for color and subsequent resin cement selection.

5) Ultrasound with distilled water for five minutes, followed by drying.
6) Silane application for one minute.
7) Drying at 100 °C for one to two minutes with the aid of a hair dryer.
8) Adhesive application without ligh-curing.

Once ceramics had been etched, cementation was carried out by following the following clinical sequence (Figs 43 to 48):

1) Surgical site under rubber dam isolation.
2) Dental surface cleaning with pumice and water.
3) Enamel surface etching for 30 seconds.
4) Copious irrigation with water, followed by drying.
5) Adhesive system application.
6) Restoration filling with clear resin cement (Variolink Veneer, Ivoclar Vivadent) and restoration fitting over the tooth.
7) Excess sealer removal with a brush.
8) Sealer light-curing for 60 seconds on the buccal surface and for other 60 seconds on the incisal surface.

After curing, sealer excess was removed with a 12-blade scalpel and strips for interproximal finishing. The next step was prosthetic



Figures 43 to 48: 43) Acid etching. **44**) Dry substrate. Note that preparation remained in the enamel. **45**) Adhesive system application. **46**) Seating with clear Variolink. **47**) Excess sealer removal with a brush. **48**) Light-curing.

exchange of tooth #36, with a view to solving the existing microleakage issue associated with carious tissue. Additionally, occlusal enhancement, with well-defined primary and secondary grooves, as well as cusps, was of paramount importance to achieve occlusal stabilization.

The procedure consisted of removing the previous crown and carious tissue, correcting composite cores, refining crown preparation, and performing finishing and polishing procedures. Two retractors were rendered necessary, since preparation was found to be subgingival.

Double impression was taken with addition silicone (Figs 49 to 53). At the laboratory stage, study casts were manufactured with plaster and later digitized, so that the crown could be manufactured by CAD/CAM technology.

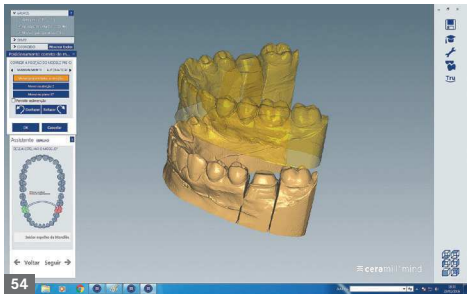
Final restoration design was created using tooth #46 shape as reference. Subsequently, minor adjustments were carried out for

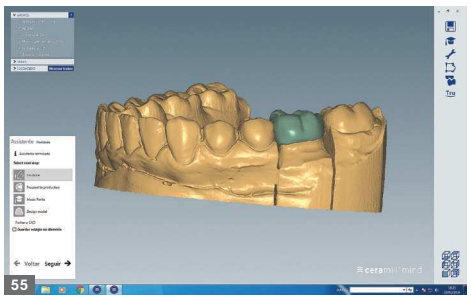
Figures 49 to 53: 49) Groove for crown removal. **50**) Carious tissue. **51**) Composite core reconstruction with resin. **52**) Diamond bur used for preparation refining. **53**) Preparation polishing with resin polishing rubber.

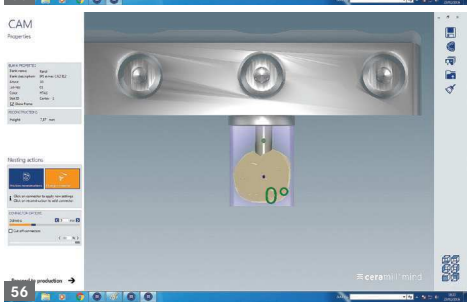
correction of occlusal and proximal contacts. Once design had been concluded, a digital ceramic block (Empress CAD, Ivoclar Vivadent) was positioned and the project was sent to CAM for milling (Figs 54 to 56).

Thereafter, the restoration was removed from the block and released for the first try-in the patient's mouth to check for fitting as well as proximal and occlusal contacts. Any adjustments should be made at this stage, so as to ensure no interventions will be necessary after the make-up procedure (Figs 57 and 58).

After make-up, restoration can be subjected to cementation. Inner etching is necessary and the aforementioned steps must







Figures 54 to 58: 54) Image overlap copying tooth #46 shape. **55**) Finished design. **56**) Design positioned over the virtual block. **57**) Crown occlusion try-in. **58**) Checking for occlusal contact.

be followed for central incisor restoration; however, hydrofluoric acid application time must be reduced to 60 seconds, in which case adhesive curing is necessary.

The sealer of choice was self-adhesive, since the tooth remnant comprised dentin and composite. As reported by Van Meerbeek,[7] in 2011, self-adhesive sealer is the best option, thereby ensuring adhesion and technical ease. The cementation procedure consisted of placing a #000 wire for humidity control; preparation cleaning with pumice and water; copious irrigation; preparation drying; restoration filling with self-adhesive sealer; restoration try-in in the patient's mouth and curing for 60 seconds on each restoration surface.

Sealer excess was removed with a 12-blade scalpel and strips for interproximal finishing.

Restorative treatment was finished, and restorations were rendered natural and mimetic. Additionally, we noticed microscopic fitting of tooth #21, even if supragingival, thereby allowing restoration to be virtually invisible (Figs 59 to 67).

Figures 59 to 61: 59) Ceramic veneer end result. **60**) Ceramic veneer microscopic fitting. Note detailed ceramic stratification. **61**) Tooth #36 crown end result.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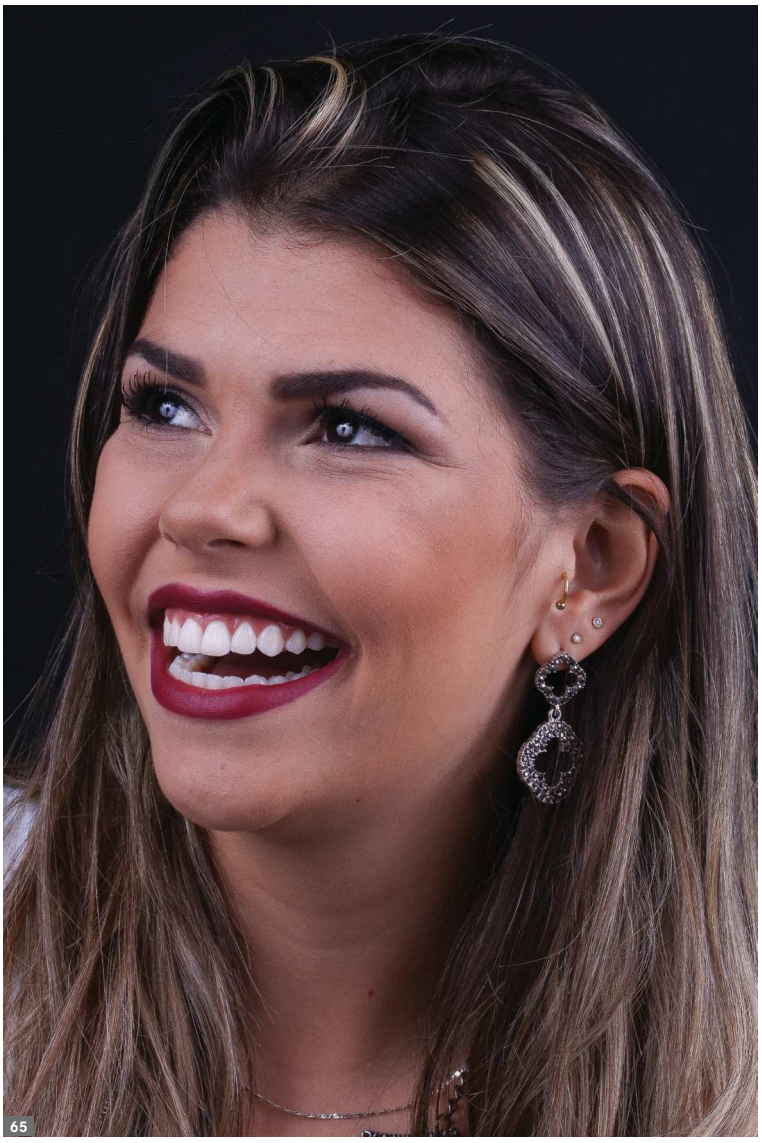
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Figures 62 to 67: 62) Final smile at frontal view. **63**) Final smile in right lateral view. **64**) Final smile in left lateral view. **65** and **66**) Final facial photographs. **67**) Final smile.

Conclusion

Through technological innovation and convergence of different philosophies in an interdisciplinary team, contemporary Dentistry is able to achieve outcomes in benefit of patients.

Esthetic and functional outcomes walk side by side, and depend on one another to achieve treatment longevity. Smile beauty is not restricted to focusing on tooth proportion; it is rather upheld by balance among bone structures, soft tissue, teeth and restorations.

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