CASE 1

P. CARDELLI

ITALY
C1 and BondBone in the Esthetic Zone
C1 AND BondBone

Initial
C1 and BondBone

Initial

Severe deep bite
C1 and BondBone

Initial
C1 and BondBone

Initial
C1 and BondBone

CBCT template
C1 and BondBone

CBCT

Buccal Bone Plate: < 1 mm

Cemented Restoration
**C1 and BondBone**

**Evaluation**

"Type 2" implant placement

**Advantages:**
- Soft and hard tissue stability
- Preservation of a buccal bony contour

**Disadvantages:**
- 2-3 surgical procedures: extraction-implant-exposure?
- Provisional management (occlusion?)

Chen ST, Buser D.
Clinical and esthetic outcomes of implants placed in postextraction sites.

Buser D, Chappuis V, Bornstein MM, Wittneben JG, Frei M, Belser UC.
J Periodontol. 2013 Jan 24. [Epub ahead of print]
C1 and BondBone Evaluation

Type 1 vs Type 2 implant placement

Both treatment approaches appear to be appropriate, with the preferred treatment based on factors other than resultant soft tissue changes.

van Kesteren CJ, Schoolfield J, West J, Oates T.
A prospective randomized clinical study of changes in soft tissue position following immediate and delayed implant placement.
C1 and BondBone Evaluation

Type 1
Predictable technique
Treatment of choice in cases of single anterior tooth
Correct positioning of the implants
Maintaining the original condition of both bone and soft tissues around the tooth

Ridge alteration following tooth extraction:
Phase 1: Bundle bone $\rightarrow$ woven bone substitution
(mainly buccal wall) $\rightarrow$ vertical reduction
Phase 2: resorption from the outer surfaces of both bone walls.

Esthetic outcome?

Araújo MG, Lindhe J.
Dimensional ridge alterations following tooth extraction. An experimental study in the dog.
Buccal plate augmentation

Even subtle postextraction buccal plate resorption may have significant clinical effects, particularly in the esthetic zone. Buccal plate augmentation consists of placement of bone graft material over an intact buccal plate, underneath the soft tissues in a surgically created pouch with an aim to maintain or augment the soft tissue esthetics of the region.

Caiazzo A, Brugnami F, Mehra P.
C1 and BondBone

Planning

Single flap approach

"Type I" implant placement

Buccal plate augmentation (composite)

Immediate provisional


C1 and BondBone Surgery

Single flap approach

Atraumatic extraction
C1 and BondBone Surgery

2.4 Twist Drill

OT4 on the Palatal Wall

OT4 without Template

3.0 Twist Drill

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C1 and BondBone Surgery

Countersink

C1 3.75x10

Final position

1 mm subcrestal
C1 and BondBone

Immediate provisional

Immediate provisional from surgical template
C1 and BondBone Surgery

Composite graft: BondBone (50%) and $\beta$-TCP/HA (50%)
C1 AND BondBone Surgery

Composite graft: BondBone (50%) and $\beta$-TCP/HA (50%) without membrane.
C1 and BondBone Surgery

Provisional placement + bucca gap filling ($\beta$-TCP/HA)

Suture PGA 6-0

Palatal aspect
C1 and BondBone Healing

2 weeks

1 month

2 months

2.5 months
C1 and BondBone

Impression (3 months)

Adequate buccal contour

lunedì 22 aprile 2013
C1 AND BondBone

Impression (3 months)

Emergence profile acquisition
C1 and BondBone

Occlusal Relationship

C1 Base

"Veneer Prepared" Lithium Disilicate Abutment
C1 and BondBone

Abutment try-in
C1 and BondBone
Abutment final seating

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C1 and BondBone

Restoration delivery
C1 and BondBone

Final outcome
C1 and BondBone

Soft tissue contour comparison, right-left
C1 and BondBone

Soft tissue contour comparison, pre and post-op

lunedì 22 aprile 2013
FUNCTION & ESTETHIC
AN INTERDISCIPLINARY APPROACH

Topic: "The combined use of MIS' dental implants and BONDBONE for immediate procedures in the esthetic zone."

Author: Joile Alvarez Cantoni

ARGENTINA
MIS CLINICAL CASES COMPETITION

June 6-9, 2013 | Cannes, France

360° IMPLANTOLOGY

Topic: "The combined use of MIS' dental implants and BONDBONE for immediate procedures in the esthetic zone".

Author: Joile Alvarez Cantoni

Argentina
FUNCTION & ESTHETIC
AN INTERDISCIPLINARY APPROACH

INTRODUCTION

The placement of dental implants in the esthetic zone is a real challenge for doctors because of patients demanding esthetics and difficult anatomic pre-existing terrain.

Potential causes of esthetics failures, pre-operative analysis, ideal implant 3D position and restorative aspects will be discussed in the beginning of this clinical case presentation.

The esthetic zone can be defined as any area to be fixed that is visible in the patient’s full smile. An esthetic implant prosthesis is one that resembles a tooth in all aspects. The exact location in which the implant is placed is of extreme importance; it should have the correct location in all three dimensions: apicocoronal, mesiodistally and faciodiagonally. Any diversion from these positions will have a negative effect in the final restoration.

Over the past 15 years, dental esthetics has been an important issue in implant dentistry. In the esthetic zone, unsatisfactory treatment results can lead to devastating clinical situations that can only be restored with the removal of the implant and the future surgical ridge and soft tissue augmentation.

In the kick-off of esthetic or implant therapy, we should start understanding the patient’s desires. In most cases, the patients demand an esthetic tooth replacement providing a beautiful smile. It is our responsibility to have the knowledge of all treatment possibilities. Nowadays, implant supported restorations may offer the best solution.

Hard tissue deficiencies mostly often need guided bone regeneration to allow the three dimensional correct implant placement, even we decide to use a simultaneous or staged approach.

To successfully meet the outcomes of esthetic implant therapy an interdisciplinary team approach is critical and highly recommended.

3-DIMENSIONAL POSITION OF THE IMPLANT

Placing the implants in a proper 3-dimensional position is a key to an aesthetic outcome regardless of the implant system used.

Two anatomical structures have great importance: the bone height of the alveolar crest in the interproximal areas and the height and thickness of the facial bone wall, where the interproximal crest is the responsible of the absence or presence of peri-implant papilla.

Several surgical techniques have been presented in the past 15 years to improve bone defects at the facial aspects of implant sites, such as onlay grafting, GBR using barrier membranes, a combination of block bone grafts and barrier membranes, and distraction osteogenesis.
3-DIMENSIONAL POSITION OF THE IMPLANT
CAUSES OF ESTHETIC IMPLANT FAILURE

iatrogenic factors: failures can be caused by inappropriate implant positioning or implant selection.

Compromised esthetic result in an adult patient. Clinical situation 1 year following implant restoration. The periapical radiograph clearly shows the cause of the esthetic failure: the implant shoulder was positioned too far apically and near the neighboring tooth, which led to the resorption of the buccal plate.

Disastrous result in the esthetic zone, clinical status 6 month following implant placement. The implant shoulders were positioned too faciably and close to each other.

Compromised esthetic result in a young female patient. Clinical situation 2 years following implant restoration. The periapical radiograph clearly shows the resorption of the buccal plate and the interproximal bone.

CLINICAL TREATMENT PLANNING

CASE PRESENTATION

Age at initial presentation: 20 years
Initial presentation: October 2011
Active treatment completed: February 2013

INTRODUCTION & BACKGROUND

The patient is a 20-year-old law student and was initially seen by his general dentist with the goal of a simple correction of her composite veneers. She was encouraged to consider an interdisciplinary approach. It was then when she became aware of the need to improve her dental health and her dental esthetics for professional and social reasons; she was willing to accept a plan that would address all of her biological, functional and esthetics needs.

MEDICAL HISTORY

The patient was in excellent health.

DIAGNOSTIC FINDINGS

Esthetics analysis: there was no significant alterations in the facial profile.

Incisal plane: convex.

Incisal profile: right maxillary incisor was markedly retroclined, both central incisors were in a protrusive position and the left lateral incisor was in a correct situation.

Incisal length: right lateral incisor 10 mm, right central incisor 10 mm, left central incisor 11.5 mm and left lateral incisor 9.5 mm.

Tooth proportion: non-harmonious proportions between the maxillary incisors.

Gingival plane: altered gingival plane, showing an asymmetrical appearance in the six anterior maxillary dental elements.

Intraoral dental findings:
- Tooth # 1.7-1.8-2.7-2.8-3.7-3.8-4.7-4.8 Relapsed composite fillings.
- Tooth # 1.2 all-metal ceramic restoration.
- Tooth # 1.1-2.1-2.2 composite veneer.
CLINICAL TREATMENT PLANNING

PRETREATMENT

Auspicious facial analyays - Favorable low smile line - Great lip support

Intracoral periodontal findings:
- Very good plaque control.
- Thin scalloped marginal periodontum.
- Chronic gingival inflammation around the right lateral incisor due to marginal overhang.
- Lack of keratinized gingiva on the facial aspect of teeth # 1.2, 1.1, 2.1, 2.2.
- Probing depths of teeth # 1.2, 1.1 within 3 mm.
- Probing depth of tooth # 2.1: Facial 4.5 mm. Distal 6 mm.
- Probing depth of tooth # 2.2: Facial 3 mm. Mesial 5 mm.

Radiographic findings:
- Tooth # 1.2 endodontic failure, lack of gutta-percha condensation. Cast post and core.
- Tooth # 1.1 endodontic failure showing apical radiolucency.
- Tooth # 2.1 endodontic failure showing external resorption.
- Tooth # 2.2 endodontic failure showing apical radiolucency.

The periapical radiographs shows the endodontic failure of the four maxillary anterior teeth, apical radiolucency and external resorption of number 2.1. It can also be seen the lack of interproximal bone between # 2.1 and 2.2 delivering a critical resolution in the GBR augmentation and implant placement.
CLINICAL TREATMENT PLANNING

3D of scan findings:
- Tooth # 1.2-2.1 apical radiolucency.
- Tooth # 2.1 absence of bone buccal plate, extreme protractive position. Less than 1 mm of interproximal bone in its distal aspect.
- Tooth # 2.1 apical radiolucency and external resorption.
- Poor amount of apical bone on both central incisors.

PROPOSED TREATMENT PLANS

REVIEW OF TREATMENT GOALS
1. Harmonize all tooth proportions.
2. Enhance the biological and functional anisotropy of # 2.1.
3. Return the correct integration of the esthetic zone with the patient’s smile.
4. Eliminate the peri-apical infections of # 1.2, 1.1 and 2.2.
5. Improve gingival status of inflammation.
6. Upgrade the quality of the restorations.
7. Keep it as conservative as possible.

TREATMENT ALTERNATIVES

Option 1: Conservative treatment plan with extraction of # 2.1
Eliminate old restorations in # 1.2, 1.1, 2.1 and 2.2
Retreat root canals treatments of # 1.2, 1.1 and 2.2
Ridge augmentation in #2.1 zone
Implant placement in #2.1 zone
Conventional fixed prostheses on # 1.2, 1.1 and 2.2
Screw retained implant-supported restoration in # 2.1
Replace old composite restorations in # 1.5, 1.7, 2.6, 2.7, 3.6, 3.7, 4.6 and 4.7

Option 2: Conservative treatment plan with extraction of # 1.1 and 2.1
Eliminate old restorations in # 1.2, 1.1, 2.1 and 2.2
Retreat root canals treatments of # 1.2 and 2.2
Ridge augmentation in #1.1 and 2.1 zone
Implant placement in #1.1 and 2.1 zone
Conventional fixed prostheses on # 1.2, and 2.2
Screw retained implant-supported restoration in # 1.1 and 2.1
Replace old composite restorations in # 1.6, 1.7, 2.6, 2.7, 3.6, 3.7, 4.6 and 4.7
CLINICAL TREATMENT PLANNING

FINAL TREATMENT PLAN

One major goal driving the final plan was to keep it as conservative as possible. To that end, the following decisions were made:

Option 1: Conservative treatment plan with extraction of # 2.1.
- Eliminate old restorations in # 1.2, 1.1, 2.1 and 2.2.
- Retreat root canals treatments of # 1.2, 1.1 and 2.2.
- Ridge augmentation in #2.1 zone.
- Implant placement in #2.1 zone.
- Conventional fixed prosthesis on # 1.2, 1.1 and 2.2.
- Screw retained implant-supported restoration in # 2.1.
- Replace old composite restorations in # 1.6, 1.7, 2.6, 2.7, 3.6, 3.7, 4.6 and 4.7.

It was understood that this very conservative approach would result in several compromises:
- There would be the possibility of failure of the root canal retreatments with its associated loss of the teeth involved. Also, #1.1 and its lack of facial bone are an unpredictable scenario of evolution, however the patient’s age and requirements lead us to opt for this conservative treatment plan.

Initial therapy:
- Initial therapy included oral hygiene instructions, periodontal prophylaxis and maintenance.

ACTIVE CLINICAL TREATMENT

Pretreatment view showing # 1.2 full metal ceramic restoration, # 1.1, 2.1 and 2.2 relapsed composite veneers

Removal of the metal ceramic restoration, evidencing gingival inflammation and a non precocious alloy post and cores

Removal of composite veneers restoration, the image shows the minimum space between 2.1 and 2.2. This would be a critical issue in the future ridge augmentation, implant placement and restorative procedure.

Interim provisional restorations placed after the removal of relapsed restorations and before the surgical procedures.
ACTIVE CLINICAL TREATMENT

Sequence of periapical radiographs showing the root canal retreatment of the maxillary incisor, it is highly recommended to involve all the related disciplines to reach the best biological and functional possible outcome.

Post-endodontic intra-canal posts.

Surgical removal of the failing left central incisor. Note the absence of buccal plate due to the external resorption, and the lack of interproximal bone height between left and central incisors.

A large ridge defect is evident following the removal of the failing left central incisor. This scenario guides us to delay the implant placement and only proceed with the GBR with membrane barrier in this first surgical procedure.

Periodontal probe showing the absence of interproximal bone surrounding the mesial aspect of #2.2.

Horizontal and vertical ridge augmentation with G.BONE covered with a resorbable membrane.
ACTIVE CLINICAL TREATMENT

Post-surgical views 3 months following the GBR.

Post-surgical 3D CT scans after 7 months of graft healing.

Pre-surgical 3D CT scans. Compare the volume successfully augmented.

Set of photographs showing surgical procedure of the implant placement, implant selection MIS C1.
Successful anterio ral ridge augmentation.
Good interproximal bone in the distal aspect of the ridge.
Excellent interproximal bone in the mesial aspect of the ridge.
3-dimensional ideal implant positioning.

One week post-surgical view.
Absence of distal peri-implant papilla.
Lack of facial gingival tissue.
ACTIVE CLINICAL TREATMENT

Cephalic view of the esthetic zone showing the lack of facial gingival volume. The team decided to perform a new surgical procedure to gain soft tissue volume.

Soft tissue graft augmentation surgical procedure.

Clinical status 2 months after soft tissue surgery. Now we face the right scenario to proceed with the esthetic restoration.

Set of photographs showing the switch from old composite restorations to new operative restorations in #1.5 and 1.7. This procedure appears to be simple and tedious, but we strongly believe in a full integration treatment plan. Also, it is well known that a correct approach in operative dentistry is the best path of preventive dentistry. This restorative procedures were made in the healing process of the soft tissue graft.
Set of photographs showing the switch from old composite restorations to new operative restorations in #2.6 and 2.7.
ACTIVE CLINICAL TREATMENT

Set of photographs showing the switch from old composite restorations to new operative restorations in #4.6 and #4.7.

ACTIVE CLINICAL TREATMENT

Provisionalization must be viewed as the non-surgical refinement of the soft tissue architecture.

New provisional restorations in place. Conventional fixed partial restorations in #1.2 - 1.1 - 2.2.

Screw retained provisional restoration on implant in position of 2.1. The primary concern is to assure an accurate fit of the crown margin to the implant shoulder, with no inclination of contour. This is the reason why it is preferable to use an screw retained fixed restoration. Therefore it is critical to achieve an correct three dimensional position in the implant placement procedure as it result in the possibility of having the emergence axis of the screw in palatal position (circulus). This circumferential provisional restoration has the responsibility to shape the peri-implant gingival tissues. It is difficult to fully seat a definitive restoration if the peri-implant tissues have not been shaped with emergence profile provisional restorations.

As a result, there must be a precise transfer of this information to the technician about the clinician's ideal and the patient approved soft tissue framework.
Photograph showing clinical situation after 2 months of peri-implant gingival tissue management. Procedure of vital importance to ensure the right emergence profile of the future ceramic restoration.

Set of photographs detailing the simple and precise impression technique for the Mix C1 implant. It also shows the accurate impression of the prepared tooth. It is recommended for all ceramic restoration to finish the tooth preparation with a light chamfer.
ACTIVE CLINICAL TREATMENT

Zirconium coping try-in
You can also notice an anatomic wax-up in the implanted zone, used to certify and approve the emergence profile.

Set of photographs showing 4 All ceramic restorations.

Final All ceramic restoration in full harmony with the patient's smile.
CONCLUSION

From this clinical case discussion on implants aesthetics, it is clear that significant preplanning and an understanding of the various implant placement approaches and relative procedures have an important impact on minimizing negative hard and soft tissue contour changes from the moment of tooth extraction. One of the most important intent of this clinical case presentation is the intention to emphasize that implant treatment in the anterior maxilla zone requires a great knowledge base in both surgical and prosthetic aspects of treatment to meet esthetic ideal. It also underscores the key role of refinement of our treatment procedures, using more precise preoperative planning tools such as 3D computed tomography, three-dimensional planning programs, ultra conservative but technically demanding surgical procedures, and absolute accuracy in provisionalization strategies. The result is that the previously well-defined roles of the surgeon and the restoring dentist are now more uncertain, emphasizing the benefits of developing implantologists or an implant team, that is, dentist or group of dentists who posses the knowledge and skills that are applied beginning planning phase, that demand excellence in the surgical phase, and that are ful filled with artistry in the final restoration.

ACKNOWLEDGEMENTS

I would like to recognize the artistry of our dental ceramic technician Mr Angel Picolo the enormous involvement of my implant and restorative team, Dr Hector Alvarez Cantoni and Dr Miriel Alvarez Cantoni.

Success and reaching for the ‘patient’s best’ is thanks to our combined efforts.

CURRICULUM VITAE OF THE AUTOR

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REFERENCES
CASE 3

EMILIO MATEO DOMINICANANA
MINIMALLY INVASIVE SURGERY FOR POST-EXTRACTION IMMEDIATE IMPLANT C1 MIS WITH 4BONE GRAFT AND IMMEDIATE LOADING IN THE AESTHETIC ZONE.

Dr. Emilio Mateo
Specialist in Periodontics and Implant Dentistry
Universidad Iberoamericana
Consent and Release
CONSENT TO ALLOW THE USE OF IMAGES AND OTHER RELEVANT TREATMENT DATA FOR PUBLICATION AND EDUCATIONAL PURPOSES

Dear [Madam/ Sir],

Please read the following information carefully. You are asked to sign this form as part of your submission of a case to the MIS Meeting Case Competition.

This form should be signed by both the treating dentist and by the relevant patient. Only forms including both signatures will be accepted.

If you have any questions, please contact Ms. Michal Malka at MIS Implant Technologies LTD: michal@mis-implants.com

Please scan or send the signed form to: michal@mis-implants.com, and please keep a copy of the form for your records.

PURPOSE

MIS Implant Technologies LTD is a company who manufactures and sells dental implants and other related components all over the world. As part of MIS's mission, the company aims to educate dentists and patients as for the benefits of dental implants. The company acts in different ways to publish its products and to educate dental professionals as for its products and as for ways to provide best treatments to patients.

In an attempt to enlarge our documented case library, MIS conducts a world-wide case competition, which will take place during MIS's Second Global Meeting in June 2013.

WHAT ARE YOU ASKED FOR?

Dentists: You are being asked to allow MIS Implant Technologies LTD to use images and other relevant treatment data that you submit, for publication and for other activities, aiming to educate dental professionals and the public as for treatment done with the use of dental implants. The data that may be published or be used, in addition to the submitted images and treatment data will include specific recognition that it was provided by you. This recognition will be done by specifying your name, country and relevant data.

Patients: You are being asked to allow MIS Implant Technologies LTD to use images and other relevant treatment data for publication and for other activities, aiming to educate dental professionals and the public as for treatment done with the use of dental implants. The data that may be published or be used, in addition to the submitted images and treatment data will include specific recognition that it was provided by you. This recognition will be done by specifying your name, country and relevant data.

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PARTICIPANT STATEMENT

I (Dentist, [Name and Identification number]) ______________, have read this consent form, and by signing this document I declare that:

1. I had an opportunity to ask questions, and if I did, I received answers that satisfied me completely.
2. I understand and that I allow MIS Implant Technologies LTD to use images, certain identifying information, and all other relevant submitted treatment data, for publication and for other activities.
3. By signing this consent, I understand that I will not receive any direct or indirect compensation from MIS or any one of its representatives, in connection with this consent.

__________________________ Date Signature

I (Patient - Name and Identification number) ______________, have read this consent form, and by signing this document I declare that:

1. I had an opportunity to ask questions, and if I did, I received answers that satisfied me completely.
2. I understand and that I allow MIS Implant Technologies LTD to use images, certain identifying information, medical information, and all other relevant submitted treatment data, for publication and for other activities, aiming to educate dental professionals and the public as for treatment done with the use of dental implants.
3. By signing this consent, I understand that I will not receive any direct or indirect compensation from MIS or any one of its representatives, in connection with this consent.

__________________________ Date Signature
Preliminary Data
A FULL SET OF PRELIMINARY RADIOGRAPHS

Initial periapical RX.

Sagittal CT Scan
DETAILED SUMMARY OF DIAGNOSES

The clinical case corresponds to a 41-year-old patient, non-smoker with no medical history of interest, who goes to the dental office by reference. After the clinical and radiological examination, it was diagnosed an agenesis of tooth # 23 with the presence of a composite restored primary canine. The patient reported that the restoration is often fractured, reason why she decided to find a most permanent solution. It was suggested upon her request an atraumatic extraction and immediate loading implant placement in the post-extraction socket.

TREATMENT OPTIONS

The options were:

- 3-piece fixed bridge.
- Two phases implant.
- Post-extraction implant and Immediate Loading.

The last option was the chosen one the Post-extraction Implant and Immediate Loading, because the patient rejected the 3 piece fixed bridge because she did not want “to sacrifice two healthy teeth” also she did not want two surgeries for the two phases implant.
DETAILED TREATMENT PLAN

After an effective treatment plan and computed tomography evaluation, it was place an infiltrative anesthesia in the area, the atraumatic extraction was done using periotomes and the integrity of the vestibular and palatal cortical was tested, following the principles of minimally invasive surgery, avoiding to lift flap or "flapless surgery", in order to preserve the soft tissue and minimize the resorption bone process.

The MIS C1 3.75 mm x 11.5 mm implant was placed, due to its conical anti-rotational connection with six positions and a position indicator, as well as its adaptation to abutment and the excellent seal that reduces micro-movements. The implant protocol was follow and the milling is adjusted to a more palatal axis instead of following the socket axis, placing the implant in a more palatalized position, which favors the regenerative process and preserve the buccal wall of the socket. The conical connection implant with platform switch, intended by design, is placed 2mm subcrestal. It is more efficient preserving the crestal bone and having a better impact on the formation of the papilla, which favors the anterior aesthetic.

Once the milling is finished, was proceed to the implant insertion using the contra-angle handpiece at low speed, until the implant was place in the ideal position in the three directions space, obtaining a primary stability over 60 N, which is an indispensable condition for the realization of an immediate restoration as planned in this case.
According to the current guidelines of the scientific evidence, we proceed to fill the GAP formed between the implant surface and the buccal wall of the socket, by the use of 4BONE, graft composed of 100% synthetic material, similar mineral human bone structure. The use of 60% hydroxyapatite with slow resorption rate and 40% of tricalcium phosphate with rapid resorption rate, guarantees a bone cell response in a manner similar to that caused by the bone, causing perfect balance. The 4BONE becomes a living bone with a new vascularization, due to angiogenic and osteogenic properties. This is introduced into the space using a syringe, taking care that the graft is not introduce in the implant interior using a healing screw.

For the temporary crown elaboration it was screwed a type PIK temporary abutment. From the confection of the diagnostic wax model, an acetate plate is made which was perforated through the acrylic provisional, it was adjusted without any contact and the acrylic crown made by the technician was filled with the autopolymerized acrylic.

Then the acetate matrix is removed where the provisional goes and the emerging profile of the crown was finishing and polishing, which is made in compliance with the dental organ dimensions, but eliminating the incisal edge to adjust occlusal surface and excursive movements to not induce micro-movements that could derail the implant osseointegration. This confirms that restoration contours that are in direct contact with the tissues must be fully polished, being placed the provisional prosthesis to the patient on the day of surgery.
Treatment
It verify if there are fenestration or dehiscence of the walls socket with a periodontal probe and locate the buccal ledge of the bone crest.
Milling the socket, flapless

Parallelism PIN

Placing the implant
Implant placed in the socket in a slightly palatalized position

MIS C1, 3.75mm. x 11.5 mm. Implant
Confection of acrylic temporary crown by the prosthodontist from diagnostic wax.
Inserting the healing screw for bone graft placement
MIS 4BONE
Remove the healing screw for placement of the temporary crown.
Temporary crown placed immediately after surgery, once removed the cement and the occlusion adjusted.
Final Outcome
SUMMARY OF THE CASE

After waiting 6 months for a good osseointegration process and after obtaining the main goals of an immediately post-extraction implant surgery with immediately loaded as: primary stability more than 60 N, the perfect balance to fill the gap with 4BONE graft and excellent adaptation of the gingival margin with the provisionally crown since the date of placement and without presenting any difficulty within the osseointegration period, we proceed to take the impression, with the open tray technique, often used in fixed prosthetic dentistry, with the double material technique with heavy and low to make the final crown.

The color was took with the VITA Easyshade because it allows a digital reading that facilitates the clinical and laboratory work due to the evolution of dental colorimetric technology from which measurements are obtained color fast, accurate and objective.

We made all procedures required, and then we proceed to the placement of the final crown with a structure of CAD-CAM 3M Lava zirconia and ceramic VITA VM 9. Also, the necessary occlusal adjustments were made and the cement remains were removed to prevent inflammatory reactions in peri-implant tissues. Thus ends the post-surgical treatment, establishing a clinical and radiological follow up regularly to ensure the success of the implant.
SUMMARY OF THE PROPOSED CLINICAL PROTOCOL

Advances in implantology have grown as fast as the technology itself, reflected in planning atraumatic dental treatment and the use of precise guidelines that have led to the development of new techniques, allowing the insertion of dental implants and post-extraction minimally invasive surgery without the need of lifting a flap, with predictable results in function, aesthetics and patient comfort, keeping the original shape and thickness of the peri-implant tissues so that the post-surgical trauma and discomfort is minimizing compared to flap surgery, as long as these treatments accomplish the conditions and parameters for its realization.

That is why we propose a fully documented clinical case of a whole surgery with conical connection immediate implant and platform switch, the use of bone graft and immediately loaded in the esthetic zone, illustrating the alveolar bone preservation during and after extraction, which validates the atraumatic treatment advances and given evidence that this treatment is predictable.
Implant prosthetic attachment

Crown final

Crown final.
Higher contrast radiography
FINAL PHOTOGRAPHS

After 6 months the provisional is removed for making the final crown.

Place the impression coping for open tray.
Place resin flow to copy the profile emerging

Polymerizing the resin flow

Open tray technique
Printing technique of double material
heavy and silicone fluid

Replacing the analog
Attachment prosthetic
It takes a new interim to improve the emergence profile of the canine area.

Profile emerging after the placement of the new provisional.
Structure in zirconium
Structured final zirconium crown 3M LAVA CAD-CAM and ceramic VITA VM 9
Final photographs one month after of final restoration

Extraoral Photographs
Acknowledgements
Dr. Emilio Mateo (Periodontist and Implantologist case)
Dentist, Pontificia Universidad Católica Madre y Maestra.
Periodontics and Implant Dentistry, Universidad Iberoamericana.

Dr. Dioracy Vicioso (Rehabilitator of the case)
Dentist, Universidad Iberoamericana
Periodontics and Implant Dentistry, University of Sao Paulo, Brazil.

Elvin Santos.
Dental Technician, Universidad Iberoamericana.
SOLDESA Dental Laboratory.
Dr. Emilio Mateo
Specialist in Periodontics and Implant Dentistry
Universidad Iberoamericana
CASE 4

JAMES COLLINS
DOMINICANA

Dr. James R. Collins C

Dr. Rubén T. Polanco A
1- Before extraction (frontal aspect of teeth 8 and 9)
2- Acrylic temporary restoration
3- Initial x-rays
4- 3D planification
5- The planned position for the future emergence are marked in the model
6- Platform switch titanium abutments are used as provisional
7- The titanium abutments are covered by resin
8- Peri implant area are also copy by composite
9- Acrylic temporary restoration finish before the surgery
10- Periodontal sounding to confirm the level of bone crest around adjacent teeth
11- Extraction of teeth 8 using a periotome instrument and a 150 forcep
12- Extraction of teeth 9 using a periotome instrument and a 150 forcep
13- Granulation tissue of the extraction socket is removed.
14. The blue circle shows the apical direction of the roots and the red is where the drilling will be done.
15. The palatine inclination of the parallelism pins becomes clearly visible
17. Immediate temporal implant restoration on 8 and 9.
16. A sulcular incision is made with a no.15c blade
18. 1 month after surgery, clinical and radiographical evaluation. Note the use of platform switch abutments
19. 2 month after surgery, clinical and radiographical evaluation reveal stable periimplant tissue condition.
20. During the temporal restorative phase, the development of aesthetic peri-implant soft tissue contours is achieved.
21. Impression coping for the master cast.
22. Master cast.
23. Esthetic Zirconia abutments on 8 and 9.
24. Final abutments
25. A frontal view with the suprastructures in place for final details
26. An aesthetically pleasing overall integration of the two anterior reconstructions becomes clearly visible after its final cementation.
27. Occlusal view of the final restoration on 8 and 9 in the anterior maxilla
28. Before and 1 year clinical follow up
29. An aesthetically pleasing overall integration of the two anterior reconstructions is underlined by a close up view of the patient’s non-forced smile.
CASE 5

M. L. RAMOS OLTRAS
SPAIN
LATERAL INCISORS AGENCESSIS

MARÍA L. RAMOS OLTRA
DDS, MSc, PhD
Introduction

Tooth agenesis is one of the most common developmental dental anomalies. Patients with congenitally missing teeth may present with undeveloped alveolar bone morphology, making implant reconstruction a challenge. When the space maxillary isn’t enough, treatment consisted of initial orthodontic space management to obtain adequate space for missing lateral incisors.

Dental Implants have become a primary treatment option for replacement of these teeth. Many times in prosthodontic treatment planning a multidisciplinary approach is needed for a comprehensive outcome. Prosthodontic treatment planning is needed prior to the patient’s consultation and following treatment acceptance; the prosthodontist may need to coordinate treatment needs with other specialists, including an orthodontist and an implant surgeon.

The demand for optimal orthodontic and prosthetic treatment is high because the condition has an impact on facial aesthetic.

This case describes multidisciplinary management presenting thin spaced maxillary anteriors due to the congenitally missing lateral incisors.

Single piece in 12 and 22 position, standard diameter implants (3.75 x 13mm CI MIS®) were placed in edentulous spaces on both sides. During the surgery, ROG was made using MIS® 4BONE (Synthetic Bone Graft 0.5cc, particula size 0.5-1mm) and Connective tissue graft in 22 position.

Resin crows were given as provisional restorations.

Metal-ceramic crows were given as definitive restorations, resulting into an acceptable aesthetic outcome.
Conclusion

- In the rehabilitation of a single missing lateral maxillary incisor, no statistically significant difference was assessed between immediately and one-stage restored small-diameter implants with regard to implant survival, mean marginal bone loss, and probing depth. Narrow implants proved to be a predictable treatment option if a strict clinical protocol was followed.5

- Successful and satisfying dental treatment is always the goal for patients and dental practitioners, meaning that a patient's needs are solved in a functional and esthetic way. Patients and dentists have to find the best way to reach their common goal of satisfaction. Some authors introduce examples of different approaches to solve the problem of congenitally missing lateral incisors. In most cases, an interdisciplinary treatment plan has to be worked out and executed.1


Intraoral Analysis

Sex: Female
Date of birth: 1992

June 2012
Intraoral Analysis
Intraoral Analysis

June 2012
CT scan
## Risk Factors

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<th></th>
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<td>Esthetic demands</td>
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*June 2012*
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<td>Vertical bone resorption</td>
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<tr>
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June 2012
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<tr>
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✓ Connective tissue graft

June 2012
Provisionalization
Final Crowns
Acknowledgements:

- Dental technician PACO CARRILLO (CLASSIC DENTAL, Murcia, SPAIN).
- Prof. JOSE LUIS CALVO GUARADO. (Faculty of Dentistry, Murcia University, Murcia, SPAIN).
CASE 6

M. P. RAMÍREZ FERNÁNDEZ
SPAIN
Concurso de Casos Clínicos Mis
II Congreso Cannes Francia 2013

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Universidad De Murcia
mpramirezfern@hotmail.com
Teléfono: 630634344
Datos preliminares

Historia clínica

DATOS DE FILIACIÓN
Nombre: Joaquín Templado Gómez
Sexo: Varón
Edad: 59
Ocupación: Profesor
Domicilio: C/ Mesones, 10, 2ª C (Cieza) Murcia
Estado Civil: Casado

ANTECEDENTES PERSONALES:
Intervenciones Quirúrgicas: Reducción de estómago
Alergias: No Conocidas
Hábitos: Fumador 20 cigarrillos /día

ANTECEDENTES FAMILIARES:
Familia Materna: Diabetes y Cáncer e Infarto de Miocardio.

ANAMNESIS

MOTIVO PRINCIPAL DE CONSULTA: Restaurar la dentición con implantes dentales.

EXÁMENES COMPLEMENTARIOS

- I cat vision
DIAGNÓSTICO
Paciente parcialmente edéntulo con dientes naturales remanentes a nivel anterior.
Caries múltiple a nivel radicular: 12, 11, 21, 22, 35, 34, 33, 43, 44.
Movilidad dentaria a nivel: 31, 32, 41, 42.
Multiples restos radiculares: 14, 13, 23, 24, 25, 26, 27, 45
Ausencia 15, 16, 17, 18, 36, 37.
Quiste residual a nivel del 36, 37.

PLAN DE TRATAMIENTO

Plan de tratamiento A
- Exodoncias completa de piezas denarias de arcada superior e inferior.
- Exirpación de lesión quística y regeneración ósea del defecto.
- Colocación de 8 implantes en el maxilar superior y 8 en el maxilar inferior para realizar tratamiento con prótesis fija cementada sobre implantes.

Plan de tratamiento B
- Exodoncias completa de piezas denarias de arcada superior e inferior.
- Exirpación de lesión quística y regeneración ósea del defecto.
- Colocación de 6 implantes en maxilar superior (All on six) y 4 implantes en mandíbula (All on four) para una prótesis híbrida atornillada.

Plan de tratamiento C
- Exodoncias completa de piezas denarias de arcada superior e inferior.
- Exirpación de lesión quística y regeneración ósea del defecto.
- Colocación de 4 implantes en maxilar superior y 2 implantes en mandíbula para realizar una rehabilitación con sobredentaduras.
PLAN DE TRATAMIENTO ELEGIDO

Considerando la edad del paciente y las características del hueso remanente elegimos el plan de tratamiento A, el cual le permitirá al paciente una mayor calidad de vida.

Tratamiento

1. Exodoncia completa de piezas dentales remanentes y restos radiculares.
2. Extirpación de quiste residual y regeneración ósea utilizando una mezcla de hueso Bone y 4Bone para regenerar el defecto.
3. Colocación de Implantes dentales inmediatos post-extracción.
   - MAXILAR SUPERIOR: 11, 13, 15, 16, 21, 23, 25, 26 IMPLANTES C1- MIS
   - MANDÍBULAR: - 31, 33, 35, 36 IMPLANTES SEVEN-MIS
   - 41, 43, 45, 46 IMPLANTES C1- MIS
5. Configuración de juego de provisionales en resina.
6. Radiografía de control
7. Pasados 5 meses de evolución, levantamos los provisionales.
8. Retiramos los micro-implantes transicionales a excepción de los dos más posteriores del maxilar que servirán a la provisionalización.
10. Colocación de transfer de impresión.
11. Ferulización con alambre de ortodoncia de los pilares.
12. Sellado con resina autopolimerizable.
13. Toma de impresión a cubeta abierta con silicona.
14. Colocación de pilares provisionales para provisionalización.
15. Registro de las relaciones craneomaxilares y toma de la dimensión vertical.
16. Prueba de los pilares en boca y ferulización con resina autopolimerizable.
18. Cementado de la estructura fija metal-porcelana.
19. Radiografía de control al mes de la colocación de prótesis definitiva.
Ilustración 1. Imagen preoperatoria del paciente.

Ilustración 2. Radiología preoperatoria.
Ilustración 6. Colocación de 4 implantes en el lado izquierdo mandibular.

Ilustración 7. Colocación de 8 implantes en el maxilar y 4 implantes en la mandíbula derecha.
Ilustración 8. Extirpación de Quiste Residual a nivel mandibular.

Ilustración 9. Bond Bone
Ilustración 10. 4 Bone

Ilustración 11. Mezcla de Bond-Bone y 4 Bone para regenerar el defecto óseo.
Ilustración 12. Preparación del rehidratado del 4 Bone.

Ilustración 13. Relleno del defecto óseo y del gap en implantes inmediatos con una mezcla de Bone-Bone y 4 Bone.
Ilustración 14. Cierre completo de la cirugía con suturas dobles y simples.

Ilustración 15. Radiografía de control de la cirugía.

Ilustración 17. Imagen postoperatoria 5 meses de evaluación.
Ilustración 18. A bordaje para configuración de la prótesis definitiva.

Ilustración 19. Implantes definitivos sumergidos.
Ilustración 20. Retroceso de microimplantes a nivel maxilar.

Ilustración 22. Descubrimiento de los implantes sumergidos a nivel del maxilar. Colocación de piezas de transincisión implante C1 en maxilar.

Ilustración 23. Fuerolización de piñores
Ilustración 24. F תלולización con resina

Ilustración 25. Toma de impresiones maxilar.
Ilustración 26. Calibración de transfer a nivel del maxilar inferior

Ilustración 27. Penulización con resina
Ilustración 28. Pilares provisionales.

Ilustración 25. Adaptación de los provisionales.
Ilustración 30. Control radiológico.

Ilustración 31. Toma de la dimensión vertical
Ilustración 32. Prueba de pilares definitivos pasados 15 días de la toma de impresiones.

Ilustración 33. Feralización de pilares definitivos.
Ilustración 34. Llaves de transferencia para la colocación de los pilares definitivos.

Ilustración 35. Llave dinamométrica para realizar el atornillado definitivo de los pilares.
Ilustración 36. Colocación de pilares definitivos pasados 10 días de la prueba de pilares a nivel maxilar.

Ilustración 37. Colocación de pilares definitivos y cierre de las chimeneas pasados 10 días de la prueba de pilares a nivel mandibular.
Ilustración 38. Vista occlusal de la estructura metal-porcelana a nivel mandibular.

4. Resultado Final

Ilustración 40. Vista panorámica de los resultados.

Ilustración 41. Vista frontal a mayor aumento.
Ilustración 42. Vista del frente estético a nivel frontal.

Ilustración 43. Vista de la zona mucogingival.
Ilustración 44. Vista lateral de la zona estética.
5. Reconocimientos

Agradecemos la colaboración del taller de prótesis Clasic Dental en Murcia.
Single tooth replacement and immediate loading at the esthetic zone with C1 MIS implant: a multidisciplinary approach.


Dental implants are a very good choice to replace a missing tooth, however sometimes there are not the optimal conditions to make a post extraction implantation. As a result, procedures like socket preservation or improvement and guided bone regeneration (GBR) become necessary.

A 38 year old male patient came complaining of pain in his tooth 9 (fig. 1), the clinical examination shows a palatal cervical inflammation. An increased probing depth of 12 mm on the palatal aspect was shown. At the periapical radiography was an apparent internal root resorption (fig. 2). He was referred to root canal where a communication between pulp space and the external portion of the root at the palatal aspect was evidenced. To get a more accurate diagnosis he was asked to make a CT scan, where a communication to the palatal aspect and an apparent line of fracture at the buccal medial third of the root appeared (fig. 3); three alternatives of treatment were proposed:

1. Extraction, socket preservation and implantation 6 months later with immediate loading and a complete fixed orthodontic treatment.

The team decided the first treatment plan.

The patient was informed about all relevant aspects of the treatment. Based on this comprehensive information, he agreed the proposed treatment and gave a written informed consent.

The first treatment step was the careful extraction. This was carried out without flap elevation (fig. 4). The extraction socket was carefully debrided and filled with a 0.5 cc Puros Cancellous Particulate Allograft small particle (Zimmer®) and Socket Repair Membrane (Zimmer®, fig. 5). Once extracted, the tooth was sectioned horizontally at the crevical root level to get a closer look of the communication (fig. 6). In addition, the patient needed also an orthodontic treatment to improve occlusion and to make the clousure of some dental spaces that were left from a previous treatment. After that, fixed orthodontic appliances were put with two pourpuses:

1. To hold a temporary or pro-
visonal, and 2. To salve occlusal and esthetic problems.

Without making pressure on the soft tissues, the provisional was put “hanging” between the adjacent teeth. After a healing period of 6 months the clinical examination revealed uneventful healing of the extraction socket, and adequate position of the teeth in terms of required space for implantation and restoration. The soft tissues were fully intact (fig. 7).

Preoperative analysis of the anatomical conditions was evaluated using a CT scan, and the prosthetic planification of the surgery and surgical guide was carefully done (fig. 8, 9, 10).

The second procedure was performed passed 6 months with a fullthickness flap raised and a conical connection MIS implant C1 (3.75 x 13mm) was placed confining a final torque of 40 Ncm (Fig. 11, 12). Special emphasis was placed on obtaining a correct three-dimensional position with the help of the surgical guide. Apical implant threads were exposed on the buccal surface. Mis Bond Bone™ was used to cover

---

**Fig. 1** Initial situation
**Fig. 2** Initial X ray
**Fig. 3** Initial CT scan
**Fig. 4** Probing after extraction

**Fig. 5** Socket repair technique
**Fig. 6** Cross section of tooth
**Fig. 7** 6 months after extraction
**Fig. 8** CT scan pre implantation

**Fig. 9** Wax up of root
**Fig. 10** Surgical guide
**Fig. 11** Drilling

**Fig. 12** C1 MIS implant ™

**Fig. 13** Apical fenestration

**Fig. 14** Bond Bone MIS™

**Fig. 15** Bond Bone covering

**Fig. 16** Peek post in position

**Fig. 17** Composite temp. crown
**Fig. 18** Repositioned flap

**Fig. 19** Gingival contouring

**Fig. 20** After 4 months of healing
the exposed threads of the implant, offering the osteoconductive capability required to enhance gingival esthetics (Fig. 16, 17). Repositionary of the flap was achieved and tension free utilizing 6-0 Prolene Ethicon suture (Fig. 18).

After 4 months, once the case achieved the complete healing and tissue maturation, (Fig. 19, 20) impression was taken with polivinil siloxane impression material. A titanium base abutment was used to make a Prettau Zirconia cemented crown; final x ray control was taken. (Fig. 21, 22, 23).

The treatment of the case pursued from the beginning achieved its objectives, such as preservation of crestal bone and as a consequence, gingival esthetics.

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Fig. 21 Final tissue profile  Fig. 22 Final restoration  Fig. 23 Final X-ray control

**REFERENCES**


