The aesthetic challenge

By Dr. Mohamed El Sayed Hassanien, Egypt

Patient’s satisfaction has always been the main goal achievement of dental professionals particularly with esthetics. As the popularity of esthetic dentistry increases, a growing number of patients are seeking treatment for improvement of esthetic anterior dentition. Accordingly several treatment options have been proposed to restore the pleasant esthetic appearance that the patients are always seeking.

Based on the conservative approach and minimal invasive dentistry protocols, ceramic laminate veneers have been introduced to satisfy the patients growing esthetic demands.

Many construction techniques have been utilized in the dental market whether directly or indirectly to fabricate ceramic laminate veneers.

CAD/CAM being state of the art dental technology offers lots of merits for both the clinician and the patient. Being a chair side same day procedure, utilizing intra oral scanning avoiding conventional physical impressions, and long-term provisional restorations thus producing an esthetic all-ceramic restoration with highest degrees of accuracy and precision.

Case presentation

A twelve year girl, medically healthy, denies taking any medication that the two veneers showed.

Figure 1

All teeth preparations were made with loupes of magnification 2.5 X for better precision.

CAD/CAM fabrication steps

In labs SW 4.2.3 was used to scan, design and mill these two veneers.

The case was administrated as a chair side same day procedure, utilizing high-speed handpieces for the labial reduction and finishing bur no. 014 was used to finish and smooth all the preparation surfaces Fig. 4.

Finally finishing bur no. 014 was used to finish and smooth all the preparation surfaces Fig. 4.

All teeth preparations were made with loupes of magnification 2.5 X for better precision.

Tooth preparation

Tooth preparations were made with high-speed handpieces for the labial reduction and finishing bur no. 014 was used to finish and smooth all the preparation surfaces Fig. 4.

The virtual design was produced by Intra oral scanning

Sirona Omnicam was used to scan the upper, lower and buccal cast analogues to formulate the 3D virtual colored model. Margins were determined for each tooth separately and insertion axis were determined depending on their corresponding path of insertion.

Virtual design

The virtual design was produced in the same CAD software by practitioners that have been linked, restoration virtual translucency tool was used to check the amount of ceramic extension in relation to the underlaying tooth preparation Fig.7.

Intra oral scanning

Vivadent Empress Cad Fig.5. Intra oral scanning was done with the SW 4.2 to check the accuracy of the margins.

Shade matching

Visual shade matching was used for this case. Where the adjacent sound teeth showed A1 shade. Empress Cad blocks being a Lucite reinforced ceramic material was chosen for this case with a low translucency in order to mimic the adjacent shade of the teeth. Try in stage was done for the patient before glazing to check for proper seating and accuracy of the margins.

Glazing and characterization

Both veneers were seated properly with the object to fix putty material for better handling during glaze and stain process.

Empress Cad paste glaze was the material of choice for glazing the two veneers. In order to match the adjacent teeth, Empress Cad white stain was used on the middle and incisal areas in a scattered pattern with a thin brush to give the natural white stain effect. Single cycle was used for staining and glazing together Fig.9.

Cementation procedures

- Ceramic veneer surface treatment:
  - HF 4 % Empress etching gel was
KaVo MASTErSurg LUX Wireless: Redefining the best

With the successful launch of the EXPERT-surg LUX surgical unit and the SURGmatic instruments KaVo recently celebrated its comeback as a main player in the dental surgery field. As one of the world market leaders the dental company now presents another highlight: The MASTErSurg LUX wireless surgical unit. Therewith KaVo confirms its market position as a leading and innovative international dental player.

The new KaVo MASTErSurg now completes the attractive KaVo surgical portfolio and redefines surgical standards. Therewith all dentists and dental surgeons, no matter what their different individual needs are, will find the perfect solution for their surgical work. The KaVo MASTErSurg surgical unit convinces through outstanding comfort. It is offering a wireless foot control, allowing the user a great freedom of movement. The data documentation function supports procedure by real time displaying of the torque and other important digital data and saving it concurrently.

KaVo MASTErSurg makes it real: a customizable surgical unit that adapts to dentists’ and dental surgeons’ individual requirements. E.g. multiple programs, each with up to 10 treatment steps, maximum speed, maximum torque and even more parameters can individually be defined and saved.

The new INTRA LUX S600 LED, one of the lightest and smallest surgical motors in the world, enables to work with high power and precision.

When it comes to performance and comfort, KaVo continues to set the benchmark with the EXPERTsurg and the MASTErSurg controllers, the SURGmatic instruments (now available with hexagon clamping system with optimized head gearing) and the INTRA LUX S600 LED motor. All these components combine to a system for dental surgery that is not only easy to use but that provides save and highly precise tools for dentists and dental surgeons to face their daily challenges.

Nobel Biocare to join Danaher dental business

Today, Danaher, a US health care conglomerate of brands from various industries, and Swiss dental manufacturer Nobel Biocare announced that the two companies have entered into a definitive transaction agreement. In order to further expand its global dental business, Danaher has offered to buy Nobel Biocare, which is the second-largest supplier of dental implants worldwide, for CHF2 billion (US$2.1 billion).

As reported by Dental Tribune ONLINE earlier this year, Nobel Biocare confirmed that it had been approached at the end of July by third parties with a potential interest in acquiring the business. Now, the company's board of directors has unanimously decided to recommend that Nobel Biocare's shareholders accept the offer, which in
Concepts, goals and techniques for successful orthognathic surgery

By Dr. Theodore D. Freeland, USA

In this article, you will be introduced to the concepts, goals and techniques needed to diagnosis surgical cases, when surgical cases should be started and how to gain the knowledge needed to create successful results.

We'll delve into joint status, soft-tissue analysis, surgical treatment objectives, pre-treatment surgical setups and surgical setups. We'll then follow-up by looking at the concepts of natural head position, the axis-horizontal plane and the true vertical line will be introduced. By the end of this article, you should have:

- An overview of the knowledge needed for successful treatment.
- An introduction into what, when and how to perform successful cases.
- The goal of joint health.
- A summary of the soft-tissue analysis.
- An outline of the surgical treatment objective.
- An overview of diagnostic and surgical setups.

Remember that this article is an introduction only; it's not intended to teach you how to do surgical cases. Advanced training will be required to master successful orthognathic surgical cases. So with no further ado, let's get started.

Functional occlusion

The goal is to obtain functional occlusion. Before treatment, you have to determine if you have an orthodontic surgery case. You don't want to begin orthodontic treatment with the idea that if orthodontics fails, we will do surgery.

You'll see in Figures 1-5 that this case involves every facet of dentistry. Changes occurred not only in the facial features, but also in the teeth themselves. It involved orthodontic and orthognathic surgery, but also lengthening the front teeth by the restorative dentist to achieve the natural smile in balance (Figs. 1-2). To this end, we need to look at five areas:

- Joint status
- Soft-tissue analysis
- Surgical treatment objective
- Surgical setup/surgical setup technique
- Surgery

We'll give you a brief overview of the goals for each of the areas, then do an in-depth look into each of them individually.

Joint status

Starting with the first area, you need to know the joint status. Is the joint healthy, is it degenerating, is there a disc problem? This means you'll need to apply not only a good clinical exam, but also articulated models that can measure the difference between centric occlusion and centric relation.

Soft-tissue analysis

You'll need to know how to analyze the soft tissue. You'll need this because you are looking at everything from a soft-tissue standpoint, or put another way, you're recording the basic measurements that come from soft tissue, not hard tissue. If you deal with hard tissue only, then you will come up short in the soft tissue. Ignoring the soft tissue will result in a face that's not improved, just different.

Surgical treatment objective

You need to know how to do a surgical treatment objective. You'll need to know the technique, and you'll need to know how to apply it because the surgical treatment objective allows you to treat the face, the occlusion, in a two-dimensional medium.

Pre-surgical setup/surgical setup technique

Once you have established what you'll need to do from the surgical treatment objective, you will need to do what we call a presurgical setup. Otherwise you'll need to apply the knowledge you've gained from the patient, soft-tissue analysis and the surgical treatment objective, and perform a three-dimensional workup to make sure what you have planned will work with the joints, muscles and nervous system.

Joint issues that will affect the outcome of treatment.

After an oral investigation, a thorough clinical examination of the joints will need to occur. We'll be on the lookout for any sort of injuries to the mandible. If the patient has had any injury that involves the chin, there's a good chance that the joint may have been damaged.

Finally, we need to look into any past treatment. Has the patient had orthodontics before? Has the patient had a lot of restorative dentistry? This is important because all of the above have a tendency to affect joint status.

Clinical examination

Next is the clinical examination. Clinical examination includes the following:

- range of motion
- symmetry of jaw motion
- palpation
- auscultation
- muscle splitting
- CR position

Range of motion should be between 45 mm and 55 mm on opening and includes assessing movement. We're looking for a symmetrical mandible motion—meaning the chin should not deviate to the left or right on opening—and it should be relatively free of joint disease.

Now check for palpation of the muscles of mastication. If you don't check the muscles that move the mandible, then there's a good chance that you'll miss some sort of functional bite issue. We also listen to the joint with a stethoscope, and we apply some anterior pressure to the disc through external auditory meatus to make sure the disc is functioning properly.
Most of the time, we start with cone beam because it’s easy to obtain a 3-D image of the joints. Thanks to the work of Ricketts and Dr Ibaeda, we have a way to measure joint position and get an idea if the condyle is basically in a lot better shape, having a more rounded effect to it. The size of the coronal view is one that shows a definite symmetric outline to it as compared to the axial view. The axial view confirms this; you see that the shape is better and has a more dense outline.

In the coronal view, we can even see that there may be some sort of cyst formation. When you compare the right side to the left side in the coronal view, you get a more traditional image of the case, one side is going to be the problem side, especially as it pertains to orthognathic surgery. If we go to the two-dimensional axial view, which is created in the cone beam, we can see that the right joint has definitely lost vertical height, and we definitely have a joint space that is excessive (Figs. 4 & 5).

In the sagittal view, the right side, the joint looks pretty normal. However, if we look at it in a transverse direction, you’ll see less joint space laterally than you do medially, something we see in both the left and right joints (a more diverse joint space vs. symmetry). That’s why it’s important that you not only look at a sagittal view, but you also need to look at the coronal view to see if you have a transverse problem occurring in the joints.

Soft-tissue analysis
When we’re trained in orthodontics, we’re trained in hard-tissue analysis, otherwise all of our cephalometric analysis are based on hard structures. If you use hard structure to determine soft-tissue corrections, then you’ll end up with good functional esthetics. That’s why a soft-tissue analysis is so important.

Using soft-tissue markers with 3-D facial mapping, we are able to diagnose the soft tissue, and we can also relate it to the hard tissue.

In Figure 4, we’ve overlaid the soft tissue on top of the hard tissue. With the markers on, after we convert it to a two-dimensional X-ray, we can see where the sub-papillar area is, where the cheekbones are and where the alar base is. In addition, you will see a marker that we call a hinge access marker, which comes from establishing the true hinge axis of the patient. There is also a marker that’s placed on the nose that we call the horizontal point.

We are going to analyze everything from a basic coordinate system to a true vertical to an axis horizontal.

The image is orientated from the axis horizontal plane and the true vertical plane, which is based on the patient’s natural head position. Figure 5 shows how these two corners are at 90 degrees from each other. In this analysis, we’re recording all the soft-tissue measurements, both horizontal and vertical, and we’re going to base them on the line that runs through the subnasale (SN). This establishes the true vertical line based on natural head position.

Furthermore, we’re including a few hard-tissue measurements that will tell us about the architecture of the mandible. These come from Ricketts and from the Jarakah analysis. With this analysis, we can cover the basis that we need for orthodontics, but we also can cover what we need in a surgical workflow.

We also need a frontal analysis, which is taken from the patient’s face. Most of the frontal workup is done in examining the patient clinically. This enables us to look at the orbital rim, cheekbone, sub-pupill,alar bases, nasal bases and canthi of the eyes.

All of this enables us to access the articulator. This allows us to orient the CBCT data with the articulator mounting.

Now we have the true axis-horizontal plane and the true vertical plane, and now we can look at the facial, skeletal and functional issues can be assessed.

In the example we are using, the patient has a mandible that has an arch arrangement and a low mandibular plane, which causes her to occlude only on the molars with an anterior openbite.

This is precisely the kind of case where you would be looking for degenerative joint disease. Once the above enables us to establish the parameters and coordinates we need to analyze the face and occlusion and then apply the correct treatment so the patient will have a functioning stable occlusion with the necessary facial improvements.

Soft-tissue analysis
The treatment objectives are based on the soft tissue. You perform the surgical treatment objective in this order.

1) Establish the position of the upper lip to the true vertical line in a vertical and horizontal manner.

2) Determine what you need to do with the anterior teeth to create the correct upper lip position.

3) Once you established the anterior part of the maxilla, then proceed to the posterior part of the maxilla and determine if you need to do an intrusion or extrusion of the posterior segments to level the occlusal plane.

In most cases where there’s a retrusive chin and a skeletal open-bite, the patient has an occlusal plane, measured from the true vertical line that is such a function of good degrees. By leveling the occlusal plane, based on the anterior tooth position, you can set the mandible to the maxilla. This will usually balance the lower third of the face. If you still find the chin is too far forward or too far back, you may need to do genioplasty.

In the example case (Fig. 8), we have performed a surgical treatment objective, established the true vertical plane and we have our axis-horizontal plane. In this patient, we need to move the anterior teeth up because in the frontal analysis the patient showed too much tooth structure and too much gingival tissue. To fix this, we balance the maxillary anterior teeth based on the upper lip position.

Once we’ve established the correct tooth position in the anterior, we’re able to set up our occlusal plane at 95 degrees, showing us what we need to do with the posterior segment. In the example case, we need to extrude the posterior segment.

Figure 9 shows how we’ve completed the extrusion of the maxillary segment, and we’ve balanced the occlusal plane. The next objective is to place the mandible with the correct overbite. This is not 2 mm but 4 mm. This is because you want to have an adequate overbite to create adequate occlusion. In establishing the mandible, you can see in our example how the lower part of the face is placed normally enough with the true vertical line (Fig. 10).

In establishing the surgical treatment objective, we see that we want to place the anterior section in the superior direction and the posterior in the inferior direction. These are all the measurements we need to establish a surgical setup. Hopefully, this is performed preoperatively so the patient has a good idea of what needs to be done.

Pre-surgical and surgical setups
The pre-surgical and surgical setups are techniques that do require the clinician’s time. It’s
The importance of cementation: A veneers case using a new universal cement

By Kerr

E

thet

ic

options in den

st

ty are the prevailing

choice of most patients
today. Veneers and bleaching in particular have become buzz

words in popular culture, and

TV sitcoms, film and magazine

advertising have turned these
cosmetic techniques into house

hold names. As a result, dental

teams must accommodate the
demands of their patients, be

coming highly versed in placing

metal-free restorations.

Practitioners can find a multi

tude of educational articles and
courses teaching the science

and technology of porcelain, zir

conia and composite. But while

emphasis is frequently placed

on the final prostheses or direct

restoration, often overlooked are the increasingly important

auxiliary materials that contrib

ute equally to the clinical suc

cess of these new materials and

restorations: impression and provision

al materials, bonding agents and cements. Education is imper

ative because cementa

tion and bonding are two areas of esthetic dentistry that have
evolved through generations

of products and techniques.1

These processes are essential in making esthetic restorations
both functional and comfortable.

That’s why veneering can be an

optimal, conservative alternative
to crowning teeth, since preserv

ation of tooth structure is im

portant to dentists and patients alike. The highly esthetic results
are due to the fact that cement

ics have a translucent finished surface texture similar to that of

natural enamel.2,3 Technicians, assis

itants and lab technicians spend

vast amounts of time and effort

on these new materials and
treatments, clinical failure and

vast amounts of time and effort

P

att

ex

this

that ceram

icalike. The highly esthetic results

are due to the fact that ceram

ics are used to create veneers, since preserv

ation of tooth structure is im

portant to dentists and patients alike. The highly esthetic results
are due to the fact that cement

ics have a translucent finished surface texture similar to that of

natural enamel.2,3 Technicians, assis

itants and lab technicians spend

vast amounts of time and effort

on these new materials and
treatments, clinical failure and

vast amounts of time and effort

process with a historical litera

ty of potential problems – color

instability, insertion difficulty,

handling and cleanup issues, unsatisfactory radiopacity, low

translucency after curing, mis

match between try-in gels and

cement, and debonding, to

tame a few. Cement selection in
certain applications necessitates

knowledge of the chemistry and physical properties of the partic

ular cement type, and insertion

requires an exacting technique

for successful clinical results.5

This article outlines a veneer case using NX3 Nexus® Third Gen

eration—a new, universal cement from Kerr. The subject is a lon

g-standing patient-of-re

cords with a historical litera

ty of potential problems – color

instability, insertion difficulty,

handling and cleanup issues, unsatisfactory radiopacity, low

translucency after curing, mis

match between try-in gels and

cement, and debonding, to

tame a few. Cement selection in
certain applications necessitates

knowledge of the chemistry and physical properties of the partic

ular cement type, and insertion

requires an exacting technique

for successful clinical results.5

A female patient in her mid

fifties presented a chief

complaint of being unhappy with her smile. An examination of her

hard tissues revealed immediate

concerns of multiple fractures, hypocalcification, shortened an

terior teeth due to wear and an

asymmetrical smile line (Fig

ures 1 and 2). After proposing a first phase
treatment plan to restore all of

hers compromised upper ante

rior teeth, the patient consented
to restoring only teeth numbers

4-11. The patient ultimately

consented to restoring only teeth numbers

4-11. The patient ultimately

nodded for the second generation cement—NX3 Gen

eration cement is free of

ammonia—organic compounds

containing nitrogen as their key atoms—which were largely blamed

for the colour shifts so prevalent with earlier cement formulations.

In an earlier use of the product the cement proved to be “thixotropic,”

the consistency of non-drip paint, the resto

rations were seated and adjusted

before curing with no dripping or slumping. Controlling the wear

of-use and cleanup, color match and optimum retention are

some of the attributes necessary when choosing a cement—NX3

met all of these expectations.

References

1. Kugel G, Ferrari M: The sci

ence of bonding: from first to

sixth generation. J Am Dent As

soc. 2000 June;131 Suppl: 20S-

25S.

2. Expand 5:11–18.


ence of bonding: from first to

sixth generation. J Am Dent As

soc. 2000 June;131 Suppl: 20S-

25S.

4. Expand 5:11–18.

5. Kugel G, Ferrari M: The sci

ence of bonding: from first to

sixth generation. J Am Dent As

soc. 2000 June;131 Suppl: 20S-

25S.


Conclusion Cementation is an important aspect of functional aesthetics. An underst

standing of chemistry, technology and physical proper

ties are all essential to proper us

age and clinical success. Cement selection was the driving factor in choosing the bonding system

for this case. NX3 Nexus® Third Generation cement is free of

ammonia—organic compounds

containing nitrogen as their key atoms—which were largely blamed

for the colour shifts so prevalent with earlier cement formulations.

In an earlier use of the product the cement proved to be “thixotropic,”

the consistency of non-drip paint, the resto

rations were seated and adjusted

before curing with no dripping or slumping. Controlling the wear

of-use and cleanup, color match and optimum retention are

some of the attributes necessary when choosing a cement—NX3

met all of these expectations.

References

1. Kugel G, Ferrari M: The sci

ence of bonding: from first to

sixth generation. J Am Dent As

soc. 2000 June;131 Suppl: 20S-

25S.

2. Expand 5:11–18.


ence of bonding: from first to

sixth generation. J Am Dent As

soc. 2000 June;131 Suppl: 20S-

25S.

4. Expand 5:11–18.

About the Author

Dr. Mitch Coudill, a 1985 gradu

ate of Baylor College of Dentistry

in Dallas, TX, lectures interna

tionally and has published nu

merous articles reviewing all as

pects of restorative and cosmetic
dentistry.
The aesthetic performance of dental restorations has always been a factor of utmost importance in the success or failure of the treatment. Lately, as aesthetic awareness of the population increases and the evolution of dental materials have made new techniques possible, optimal aesthetics can be achieved following less invasive restorative procedures. In many cases, multidisciplinary treatment is necessary so that the best possible outcome is achieved with a minimum degree of compromise between invisiveness and aesthetics. Every complex case should be treated planned by a team of specialists, so that every detail and limitation from each point of view is taken into account. The restorative dentist usually designs the smile and oversees each phase of the treatment by all other specialists.

Congenitally missing lateral incisors are a common dental problem that can be ethically dealt in three different ways: 1. canine substitution, 2. tooth supported restoration, and 3. implant supported restoration. Tooth auto transplantation (usually a maxillary canine) is necessary in the case of only one congenital missing lateral incisor. The treatment planned by a team of dental, orthodontic and aesthetic specialists, so that every detail of the restoration is designed to achieve the best possible outcome.

The chief complaint of the patient was spaces between the teeth and specifically the missing upper left lateral incisor tooth, the irregularly shaped upper right lateral incisor, and the diastema between teeth #11 and 21. Also, she was concerned about asymmetries in her smile and missalignments of her teeth. Finally, the patient stated she would like to have a brighter smile (Figures 1-3).

The dental examination revealed no pathological findings or signs of dental disease. The DMFT was low and the comprehensive periodontal examination resulted in no pathological findings; radiographic bitewing examination revealed no pathological findings as well.

The aesthetic evaluation of her smile resulted in the following issues that would need to be addressed in the treatment plan: 1. peg shaped lateral incisor #12, 2. congenitally missing lateral incisor #22 with diastema between #11 and 21, 3. dental midline transmitted to the right by 4mm, asymmetry between the left and right side, especially the space between 11-13 and 21-23, 4. gummy smile, especially on the area of #12 and the missing tooth #22, and 6. the gingival zenith was asymmetrical between #11 and 21 (Figures 4-6, Table 1). The occlusion was Class I. The base shade of the teeth was A5 on the upper central incisors and A3.5 on the upper canines (Vita Zahnfabrik, Bad Sackingen, Germany).

Photographs and alginate impressions were taken in the exam appointment to fabricate study models. Then the team of aesthetic/restorative dentist, orthodontist and periodontist treatment planned the case. The recommended treatment plan was accepted by the patient in favor of the alternative treatment plans.

Orthodontic phase

The orthodontic treatment goals were as follows: 1. intrude #11 to align the incisal edges of the centrals, 2. equalize the spaces between #11-13 and #21-23, 3. transfer the dental midline to the left, and 4. correct misalignments and minor rotations in different areas. Some composite resin was bonded on the facial surface of tooth #12 to facilitate bracket placement. The composite was white in shade to match the evolvement of dental materials and designs the smile and oversees each phase of the treatment by all other specialists.

Figure 1 - 3: The unaesthetic smile of the patient before treatment.

Figure 4 - 6: Retracted view of the teeth before treatment. Note the peg shaped #12, the missing #22 and the asymmetry of the spaces between teeth #11-13 and 21-23.

Table 1. Teeth and spaces between them were measured. The proportions of the teeth (length to width ratio) and the arrangement of the spaces are crucial information in treatment planning, especially in patients with a high lip line.

<table>
<thead>
<tr>
<th>Tooth (t)</th>
<th>Length (mm)</th>
<th>Width (mm)</th>
<th>Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>8.1</td>
<td>6</td>
<td>8.5</td>
</tr>
<tr>
<td>21</td>
<td>8.5</td>
<td>6</td>
<td>8.5</td>
</tr>
<tr>
<td>22</td>
<td>8.5</td>
<td>6</td>
<td>8.5</td>
</tr>
<tr>
<td>25</td>
<td>8.5</td>
<td>6</td>
<td>8.5</td>
</tr>
</tbody>
</table>

Notes

- Peg Shaped
- Overeruption
- Dental midline
- Ging. zenith
- Gummy Smile
- Overeruption

Case report

A 22 year old Caucasian female presented to the clinic asking for aesthetic improvement of her smile. The patient was single and a student of law school. The medical history was unremarkable with no pathologies and no known allergic reactions reported to any kind of medicaments. No medications were taken on a systematic basis by the patient. The dental history was also unremarkable with only preventive and minor operative dentistry interventions and prophylaxis in the past. The patient mentioned a history of congenitally missing teeth in her family.

By Konstis Giamarakopoulos, Greece

Figure 7 - 9: Photographs of the patient during the orthodontic phase of the treatment.

> Page 16
S

14

Dental Tribune Middle East & Africa Edition | November-December 2014

A multi-disciplinary approach to minimally invasive functional aesthetic dentistry

By Dr. Tif Qureshi, UK

Simple tooth alignment is rapidly becoming accepted as the norm in cases that previously would have been treated with porcelain veneers. However, patients often present with a mix of problems such as previous metal ceramic work, the treatment of which should be integrated as part of the treatment plan. Timing becomes a vital part of the treatment when mixing restorative care, alignment, tooth whitening and occlusal planning. The following case illustrates an effective approach to treatment.

Case report

A patient presented complaining that “his two front teeth [old upper anterior crowns] felt as if they were too large and were always hitting the lower teeth”. In addition, his bite never felt “right” (Figure 1). He also wanted to try to improve the appearance of his teeth. He was aware of what could be done with porcelain veneers, but wanted to try to make the best of his own teeth.

Examination

On inspection, it was clear there were several issues:

1. Occlusion - The irregular alignment of the lowers and the thickness of the upper old crowns were adding to the problem of unbalanced anterior contacts. The back of the crowns, especially the upper left central, were hitting the front of his lower teeth, in particular the lower left central.

2. Thickness/aesthetics of core - The old crowns had been placed quite labially and because they were metal ceramic, made them feel particularly thick. Because it was metal ceramic, they were large and were considered because of the cost, the difficulty in simultaneous whitening and added difficulty in having the crowns as temporary through treatment. The patient’s posterior occlusion was also good. Full anterior veneers were discussed, but after the patient understood how simply and quickly the alignment could be done, seemed a completely ridiculous and unethical solution.

3. Lower crowding - The patient was also keen to improve the aesthetics of the lower teeth as the incisors had an irregular outline. The incisal edges appeared to be of different heights. This was down to the varying anterior-posterior position.

4. Colour - The old crowns had been made at A3/A3.5 and the natural teeth had darkened a little with age.

5. Retain the lower arch.

Alternative options

Alternative options were discussed. Fixed braces were discounted because of the cost, the difficulty in simultaneous whitening and added difficulty in having the crowns as temporary through treatment. The patient’s posterior occlusion was also good. Full anterior veneers were discussed, but after the patient understood how simply and quickly the alignment could be done, seemed a completely ridiculous and unethical solution.

Treatment plan

A combination of techniques and good timing can make sure we optimize the opportunity for treatment. In this case, the treatment plan was as follows:

1. Remove the two upper crowns and replace them with temporary composite crowns; and replace them with temporary composite crowns;
2. Simultaneously fit a lower Inman Aligner to align the lower incisors into a better functional position, while using bespoke clear aligners to slightly tilt the upper incisors into better alignment. The rationale for using upper clear aligners is that all 1 mm of movement was needed for the uppers and about 2.5 mm of movement was required for the lowers. Inman Aligners are much faster than using Spacewize™ software was given to the technician so they were aware of exactly where we wanted the teeth to be moved. Spacewize also calculates a figure for the amount of crowding present giving us an idea of the total amount of space that would need correcting and whether the case is suitable for Inman Aligners or not.

Two weeks later, the patient returned. The Inman Aligner and clear aligner were fitted on the lower and upper teeth respectively. Minimal interproximal reduction (IPR) was started. Despite calculating the amount of crowding present, the IPR is never carried out in one go. Only IPR strips or discs are used. This gives the opportunity to ensure the stripping is far more anatomically respectful than using burs or heavy discs. This massively reduces the risks of excess space formation, gouging or poor contact anatomy. No more than 0.15 mm per contact on the anterior teeth was adjusted on this single visit. The contacts are smoothed and fluoride gel is applied each time.

Treatment

On the initial appointment the two old crowns were removed (Figure 2). The preps were merely cleaned and treated as conservatively as possible. Temporary crowns, which could be adjusted, were placed (Figure 5). Upper and lower impressions were taken for upper clear aligners and for a lower Inman Aligner. A prescription of the tooth movement using Spacewize™ software was given to the technician so they were aware of exactly where we wanted the teeth to be moved. Spacewize also calculates a figure for the amount of crowding present giving us an idea of the total amount of space that would need correcting and whether the case is suitable for Inman Aligners or not.

Two weeks later, the patient returned. The Inman Aligner and clear aligner were fitted on the lower and upper teeth respectively. Minimal interproximal reduction (IPR) was started. Despite calculating the amount of crowding present, the IPR is never carried out in one go. Only IPR strips or discs are used. This gives the opportunity to ensure the stripping is far more anatomically respectful than using burs or heavy discs. This massively reduces the risks of excess space formation, gouging or poor contact anatomy. No more than 0.15 mm per contact on the anterior teeth was adjusted on this single visit. The contacts are smoothed and fluoride gel is applied each time.

A heavy, not long centric contact was present in MIP, which was causing slight deflection of the central. This meant that the upper central crown had been placed quite labially and because it was metal ceramic, made it feel particularly thick. Because they were metal ceramic, made them feel particularly thick. They also appeared rather opaque.

Our aim was to try to treat these multiple issues simultaneously so that treatment could be completed over a few months.

Alternative options

Alternative options were discussed. Fixed braces were discounted because of the cost, the difficulty in simultaneous whitening and added difficulty in having the crowns as temporary through treatment. The patient’s posterior occlusion was also good. Full anterior veneers were discussed, but after the patient understood how simply and quickly the alignment could be done, seemed a completely ridiculous and unethical solution.

Our aim was to try to treat these multiple issues simultaneously so that treatment could be completed over a few months.

Dental Lab Technology at its best

Middle East Dental Laboratory is a leading provider of quality dental products and services through world class standards and solutions, that achieves outstanding results for our customers. We are dedicated to the highest levels of accomplishment in the art and science of cosmetic dentistry.

- TRIOS Ready Lab
- GGC Certified Inman Aligner Lab
- Invisalign Certified Lab

INMAN
3Shape TRIOS

Sheik Zayed Road, Dubai, Tel: +9714 3329201, info@mddentlab.com

Follow us on facebook.com/middleeastdentallaboratory
The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The Inman Aligner was worn for 4 hours a day.

The patient was then sent home. The Inman Aligner was worn for 16-20 hours per day with the patient being asked to wear it 4 hours a day. The InmanAligner worldwide.

Acknowledgements
The author thanks Inman Aligner Certification Laboratory, Pearl Healthcare, Hampton, Victoria; Donal Inman CDT and the Inman Orthodontic Laboratory; Ninomedical Inman Aligner Lab, London; Tony Knight at Knight Dental Design; and Middle East Dental Laboratories, Dubai.

References
10. Inactivated periods of con- stant orthodontic movement forces related to desirable tooth movement in rats. T. Kameyama et al. Tokyo Medical and dental university, Tokyo, Japan. For in- formation contact the author at Kame@o.nu.tamai.ac.jp.
 make it easier to distinguish and completely remove it after the orthodontics was completed. After treatment, the goals set were accomplished (Figures 7-9).

Figure 10: After removal of the orthodontic devices the spaces are properly distributed. Note the gingival asymmetries.

Figure 11: Immediately after the periodontal surgery the gingival improvement is apparent.

The teeth showed no signs of wear, in which case the worn tooth would be intruded more to be back in its original pre-treatment position and then would be treated restoratively. The goals of the periodontal surgery were:

1. align the gingival zeniths of teeth #11 to 21, 2. gingivectomy with osseous reduction on #12 to reduce as much as possible the gingival display without compromising the long term prognosis of the tooth due to loss of periodontal support, 3. gingivectomy in mostly all the upper teeth to bring the gingival display to a more pleasing appearance. After surgery, a healing period of 8 weeks was recommended by the periodontist before the restorative procedures start (Figures 10, 11). The option of a single implant placement for the missing lateral incisor #22 was rejected before surgery, as an additional bone grafting procedure would be required and this was not accepted by the patient (Figure 12).

Aesthetic/Restorative phase
Six weeks after the periodontal surgery, in-office whitening was performed so the patient's desire for brighter teeth is met (Phillips Zoom, Philips Oral Healthcare, Strongford, USA). After 21 days after the whitening was completed the shade #4 for the upper centrals and #A2 for the canines (Figure 13).

After proper healing of the periodontal tissues was confirmed with the periodontist, tooth #21 was prepared for an all ceramic lithium disilicate crown and an e.max press Maryland type all ceramic bridge with wings are fabricated. An e.max press crown and an e.max press Maryland type crown with wings was fabricated.

Surgical phase
As stated previously, the dental team decided to align the incisal edges of #11 and 21 and not intrude further #11 to align the gingival zeniths. This decision was based on the fact that the gingival zeniths of teeth #11 and 21, 2. gingivectomy with osseous reduction on #12 to reduce as much as possible the gingival display without compromising the long term prognosis of the tooth due to loss of periodontal support, 5. gingivectomy in mostly all the upper teeth to bring the gingival display to a more pleasing appearance. After surgery, a healing period of 8 weeks was recommended by the periodontist before the restorative procedures start (Figures 10, 11). The option of a single implant placement for the missing lateral incisor #22 was rejected before surgery, as an additional bone grafting procedure would be required and this was not accepted by the patient (Figure 12).

The smile of the patient after completion of the treatment appears significantly improved esthetically.

Figure 15: After ZOOM whitening the smile appears significantly brighter.

Figure 16: An e.max press crown and an e.max press Maryland type all ceramic bridge with wings are fabricated.

Figure 17: The smile of the patient after completion of the treatment appears significantly improved esthetically.

Figure 18: Retracted and palatal view of the case completed.

The Author would like to thank the Orthodontist, Dr. Evita Ioannidou and the Periodontist, Dr. Alexis Bakopoulos for their contribution to the treatment of this case.

References

Contact Information
Dr. Kostis Giannakopoulos
DDS, PhD
Assistant Professor, ARGO Program Director European University College, Dubai Health Care City, Ibn Sina Building, No. 27
Block D, 3rd Floor, Office 502, P.O. Box 57528, Dubai, UAE
Email: kostis@eufe.ac.ae
Now, everyone in your dental team can Shoot!

Ultra-Light
SIMPLE
Compact
Accurate

SHOFU Smart Digital EyeSpecial C-II

- 8 Pre-set dental modes with the option of customized settings
- Intuitive one-touch operation and built-in anti-shake
- Large LCD touchscreen with dental cropping grid lines
- Fast auto-focusing capability and excellent depth of field
- Water and chemical resistance
- Uncomplicated photo management system

For more information, simply contact us or your nearest SHOFU dealer.

SHOFU DENTAL ASIA-PACIFIC PTE. LTD.
10 Science Park Road, #03-12 The Alpha Science Park II, Singapore 117684
Tel (65) 6377 2722  Fax (65) 6377 1121  eMail mailbx@shofu.com.sg  website www.shofu.com.sg
workshops and self-instruction programmes. For the past ten years, CAPP has facilitated over 550 continuing education programmes with over 52,000 international participants. With the opening of CAPP Asia in 2012, CAPP’s reach has expanded to the Asia Pacific region and beyond.

In 2012, CAPP joined the global family of 96 publishers by becoming the proud owner of the Dental Tribune Middle East & Africa edition, and has since been delivering six print editions annually to over 20,000 dental professionals in the Middle East and Africa region and has delivered 24 newsletters to more than 41,000 active subscribers. Through its international website, the latest industry news reaches the largest dental community worldwide—an audience of over 650,000 dentists.

CAPP started out in Dubai ten years ago as a centre for professional training. It quickly grew and developed two very important international conferences: the CAD/CAM and Digital Dentistry International Conference and the Dental-Facial Cosmetic International Conference.

Next year, the tenth CAD/CAM and Digital Dentistry International Conference will be celebrated together with the CAPP anniversary. The last decade has been a journey with challenges in keeping pace with the incredibly fast growth of the industry combined with new technologies, particularly in digital dentistry.

Ten years ago, it would have been difficult to imagine the kind of opportunities presently available to change dentistry and improve overall patient care, including diagnostics, planning and treatment, in terms of precision, treatment and healing time, and aesthetics. What has been accomplished in the past ten years has been significant and CAPP would like to thank all of its business partners, sponsors and supporters for together making CAPP the success it is today. CAPP would especially like to acknowledge all who have worked at and continue to be with the CAPP office and share the challenges and passion. Thanks also go to all of the dentists, dental technicians, dental hygienists and dental assistants who have followed us in the decade of rapid development of the dental industry and dental technology.

VIP’s at the 8th CAD/CAM & Digital Dentistry Int’l Conference at Marriott Marquis – World’s tallest Hotel in Dubai

The Indirect Veneers Hands-On Course with Dr. Munir Silwadi

The authors of the Aesthetic Dentistry Mena Award 2012 and I Love My Dentist Award 2012

1st Braqi Dental Reunion 2011

2nd Asia-Pacific, CAD/CAM & Digital Dentistry International Conference Singapore

Visit us at
www.promedica.de

Glass ionomer luting cement
• highly biocompatible, low acidity
• micro-fine film thickness
• excellent adhesion
• no temperature rise during setting

Light-curing nano-ceram composite
• highly aesthetic and biocompatible
• universal for all cavity classes
• comfortable handling, easy modulation
• also available as flowable version

Dental desensitising varnish
• treatment of hypersensitive dentine
• fast desensitisation
• fluoride release
• easy and fast application
Qualident Dental Lab

By Qualident

Investing in technology is a costly and time-consuming process. With new developments and advancements nearly every week, as a business it can be hard to keep up and you don't want to shell out hundreds of pounds every time something new is produced – if only there was a way to keep up with maintenance without the investment and commitment. We are here to tell you there is a way.

Qualident has been providing the dental community with unsurpassed dental prosthetics and services for over 18 years. We believe there are no short cuts in producing a high quality dental restoration. This means using the best materials, the most talented technicians, and the newest digital technologies.

“Restoration of implants is increasingly more common in dental clinic practice”

Q-Bridge

Restoration of implants is increasingly more common in dental clinic practice. For restorations of implants, Q-Bridge technology has ensured an accurate measurement into the patient mouth by its 3D Oral Scanning technique.

Qualident Laboratory with the help of PicDental had established the perfect solution for immediate loading implant prosthetics with excellent passive fit, which leads to an absence of stress, and better care and maintenance of the soft and hard tissues.

Q-bridge screw mounted structures can be manufactured with any number of connections and can be made in various materials; Cobalt Chrome, Zirconia, Titanium and PMMA.

A temporary prosthetic could be delivered in less then 24 hours with good pre-op planning.

All these high quality materials provide exceptional biocompatibility and also help care for the soft tissue.

5 Easy Steps
1. Screw Pic abutments on patient implants at the day of surgery.
2. Automatic image capture with PIC camera, and send to dental laboratory.
3. CAD/CAM design, mill, send for patient passive fit prosthetics loading.

Custom Made Abutment

Implantology is full of challenges. Impossible time constraints, incorrect angulations. Implants placed too deep sub-gingivally, obsolete systems. Now, you can eliminate many of these with the perfect solution – Custom Made Abutments from Qualident.

Compatible with a wide variety of dental implant systems & platforms, all abutments are custom designed with its full contour, then design the abutments within the space created, then polished.

A full palette of shades is available for a seamless transition between abutment and crown. Combine this with perfect emergence profile for optimum soft tissue support and margin placement. Customized height, width, margins and angulations can all be specified. Even large full arch or full mouth reconstruction cases with perfect confidence.

Locator Over Zircon Bar

The use of overdentures with locators has become an integral part of prosthetic treatment. Overdenture restoration provides improved chewing, esthetics, phonetics and comfort for patients that can’t adapt dentures.

The locator with zircon bar attachment delivers a low attachment profile and superb retention with a self-aligning design. In addition to the design that offers ease of insertion and removal, customizable levels of retention, low vertical profile, and exceptional durability, its central design feature is its ability to pivot, which increases the resiliency and tolerance for the high mastication forces.

During seating with the locator male pivots inside the denture cap, the systems’ self-aligning design centers the male of the attachment before engagement. This allows the locator to self-align into place. Once seated, the male remains in static contact with the attachment, while the denture cap enable the full range of rotational movement over the male for the resilient connection of prosthesis.

Invisalign

Elevate the patient experience. Enhance your competitive edge. Expand your adult patient practice. Apply the most healthy orthodontic treatment. Your patients will love it.

IT IS TIME TO SEE THE FUTURE NOW!

For more information, contact:

Dubai: L.A.E., Century Plaza 101, Jumeirah 1 Beach Road.
Tel: +971 4 3427576, Fax: +971 4 3427016

Sharjah: L.A.E., Al Etihad Road, Opposite Saifco Mall, Wasl Bldg, 101
Tel: +971 6 550 2900, Fax: +971 6 550 2900
www.qualident-online.com
Dentures contain surface pores in which microorganisms can colonise.¹

Corega® cleanser is proven to penetrate the biofilm* and kill microorganisms within hard-to-reach surface pores.²

SEM images of denture surface.

*In vitro single species biofilm after 5 minutes soak


Date of preparation: June 2014.

Ref: CHSAU/CHPLD/0008/14c
Dear Friends and Colleagues,

November is upon us once again. This year for the sixth consecutive time the amazing Jumeirah Beach Hotel in Dubai will host the Dental Facial Cosmetic International Conference for a two day scientific weekend offering all dental professionals the latest research and developments in the field of Aesthetic Dentistry. The Dental-Facial Cosmetic International Conference has become a vital platform for the success and perception of dentistry in the Middle East region. Yearly participants immerse themselves in plenty of knowledge and experience as well as discuss hot topics through the interactive networking opportunities the event offers. The interdisciplinary meeting brings together the dental and medical professionals with common interests in facial aesthetics and cosmetics exchanging knowledge for the best quality of patient care.

This year’s conference will cover several subjects related to Aesthetic Dentistry enlightening all delegates with experiences from over 25 International Key Opinion Leaders who have gathered in Dubai. Participants will also have the unique chance to see the latest equipment which will be showcased at the product display made available by the top of the dental industry. We sincerely hope that this meeting will let delegates with experiences from all areas of the dental field with few “surprises” as well.

On behalf of Emirates Dental Society, I would like to wish you all a wonderful time. All of us, organizers, speakers, researchers and industry players gather together to listen to the latest world acclaimed professional Key Opinion Leaders as well as discuss hot topics through the interactive networking opportunities the event offers. The interdisciplinary meeting brings together the dental and medical professionals with common interests in facial aesthetics and cosmetics exchanging knowledge for the best quality of patient care.

This 6th edition of our DFCIC features a joint meeting with the American Academy of Implant Dentistry. During this session, the AAID will share with us their vast knowledge and experience as well as the latest in the field of Implant Dentistry.

I am sure that this conference will be of the greatest help to develop our knowledge and sharpen our skills in pursuing the goal that we all share, to provide our patients with the best possible solutions for their esthetic needs. We will continue this unsurpassed cooperation to bring to our audience the most recent updates of technology in the dental field with few “surprises” as well.

See you all in the dynamic Emirate of Dubai.

Dr. Munir Silwadi
President Emirates Dental Society
Conference Chairman & Scientific Advisor

Dubai, UAE
www.cappmea.com/aesthetic2014/

Save The Date

10th Cad/Cam & Digital Dentistry International Conference
Jumeirah Beach Hotel
08-09 May 2015
Dubai, UAE
DAY ONE

08:00 – 09:00  Breakfast with the Sponsors / Registration

09:00 – 09:45  Dr. Gennaro Paulino, Italy
Adhesive esthetic solutions in anterior and posterior teeth

09:45 – 10:00  Prof. Swadl Samii, Germany
Minor & Major Augmentation in Oral and Maxillofacial Surgery and Implantology - new perspectives with Nonmethylene phosphate cement

10:30 – 10:45  Meet the Sponsors / Coffee Break

10:45 – 11:30  Dr. Anton Lebedenko, Russia
Zirconia vs. glass-ceramics - pros and cons

11:30 – 12:15  Dr. Julian Caplan, UK
In-surgery CAD/CAM Dentistry – Fact or Fiction

12:15 – 13:40  Lunch / Prayer Time

13:40 – 14:15  Dr. Costas Nikolaou, Greece
Simple Fast & High Quality Implant Dentistry

14:15 – 15:00  Dr. David Claridge, UK
An Introduction to Digital Impressioning and the Digital Workflow

15:00 – 15:45  Dr. Richard John Simonson, USA
Photography – Clinical for Dentistry, and Nature for Hobby

15:45 – 16:00  Discussions

16:00 – 16:45  Dr. Carine Mehanna Zogheib, Lebanon
Teeth whitening from A – Z...

16:45 – 17:30  Prof. Khalad Balb, KSA
The Effect of manufacturing features of rotary NiTi on their performance. A clinical approach for analysis

17:30 – 18:15  Dr. Gary Severance, USA
Oral Rehabilitation Dentistry – Control Your Future

18:15 – 18:30  Discussions

18:30 – 19:00  Poster Presentation

Meet the Sponsors / Coffee Break

DAY TWO

09:00 – 09:45  Dr. James Russell, UK
Accessible Aesthetic Dentistry

09:45 – 10:30  Dr. Michael Aya, USA
 Advances in interdisciplinary Aesthetic Surgery and Implantology

10:30 – 11:15  Dr. Julian Caplan, UK
The Aesthetics of In-surgery CAD/CAM Dentistry

11:15 – 11:30  Meet the Sponsors / Coffee Break

11:30 – 12:15  Dr. Anton Lebedenko, Russia
Bridging the Gap

12:15 – 13:00  Dr. Marcus Engelschalk, Germany
Double Scan vs. Single Scan – Two different workflows for essential improvement in fixed prosthodontic reconstruction in implantology

13:00 – 14:15  LUNCH / Meet the Sponsors

14:15 – 15:00  Dr. Marcus Engelschalk, Germany
The rotational scan in prosthodontics – new workflows for more predictability

15:00 – 15:45  Dr. Petros Varonogi, Greece
The Science & Art of Restoring Implant Restorations

15:45 – 16:30  Dr. Bjorn Tittel, Germany
Innovative Solutions & Surgery in Aesthetic Dentistry

16:30 – 17:15  Dr. Gary Severance, USA
The Landscape of Digital Dentistry

18:00 – 19:00  Discussions

Hands on Courses

VENEERS vs. CROWNS THE CHALLENGE IN SMILE DESIGN
Dr. Eduard Mahn, Chile
13 November 2014 (09:00 – 17:30)
JBH, Dubai, UAE

INDIRECT VENEERS
Dr. Munir Silwadi, UAE
15 – 16 November 2014 (09:00 – 17:30)
JBH, Dubai, UAE

DIRECT VENEERS: THE SHADES DILEMMA
Dr. Manaf Taher Agha, UAE
13 November 2014 (09:00 – 17:30)
JBH, Dubai, UAE

VENEERS vs. CROWNS THE CHALLENGE IN SMILE DESIGN
Dr. Eduard Mahn, Chile
16 November 2014 (09:00 – 17:30)
JBH, Dubai, UAE

LASER IN MODERN DENTAL PRACTICES
Dr. Eduardo Mahn, Chile
12 November 2014 (09:00 – 17:30)
JBH, Dubai, UAE
GAME PLAN

Instructions:
1. Exchange Business Cards with Company - Ask for Stamp in return
2. Find out the Main Product
3. Complete the Gameplan with products & stamps
4. Submit your contact details to the reception

6TH DENTAL FACIAL COSMETIC INTERNATIONAL CONFERENCE
14-15 NOVEMBER 2014 • JUMEIRAH BEACH HOTEL, DUBAI, UAE
Planmeca Romexis® software offers a completely integrated and digital workflow for modern implantology. From intraoral scanning to easy prosthetic design and realistic implant libraries, the most sophisticated implant planning tools are just a few mouse clicks away.

- All the scanned and design data for prosthetic works is immediately available and can be mapped with the patient’s CBCT data
- Use crown library or patient-specific crown from CAD system
- Verify the implant plan with verification tool
- Order surgical guide directly from the software
- Share data easily with partners through Planmeca Romexis® Cloud image transfer service

Find more info and your local dealer
www.planmeca.com
In ‘bleeding on probing’ trials over 4 weeks, parodontax® demonstrated significant effects in reducing bleeding gums by 22% (p<0.01).

Adapted from Saxer et al 1994. All interdental spaces from 6+ to +6 were tested at baseline and 4 weeks for bleeding on probing on the right side (buccal) and left side (lingual). Findings were recorded as 0=no bleeding; 1=slight/isolated bleeding; 2=marked bleeding. Mean scores were determined. N=22.

Baseline values [Mean SD]: Control (fluoride-containing toothpaste) group 24.75 (6.34); parodontax® group 25.40 (6.80). After 4 weeks: Control (fluoride-containing toothpaste) group 26.00 (9.14); parodontax® group 19.80 (7.38). *parodontax® vs control p<0.05.
CBCT and CAD/CAM allow for one-day restoration of Tooth #9

By Robert Pauley, USA

Case Overview
Our office received a frantic phone call from the mother of one of our twelve-year-old patients, who stated that her daughter fell while in PE class and broke a front tooth. We advised her to bring her daughter to the office as soon as possible. Immediately after her arrival a periapical radiograph, five extraoral photos were obtained (Fig. 1). Upon clinical examination and review of the digital radiograph, I saw tooth #9 was horizontally fractured at the middle third. There was no pulp exposure evident, but the tooth did have a pinkish tint on the lingual. No mobility was noted and no peri-apical changes or root fractures were obvious at this time. The new American Association of Endodontists guidelines recommend taking one occlusal and two periapical radiographs with different lateral angulations for all dental injuries, including crown fractures. If cone beam-computed tomography is available, it should be considered to reveal the extension and direction of the fracture.1 Dr. Edward Mills in his presentation on Site Development and Implant Protocol Based on Etiology of Tooth Loss refers to a similar traumatic injury in which CT images revealed not only a root fracture within the bone but a fracture of the lingual plate.2 A limited field 3D scan 5cm x 5cm at 500 voxels was taken with the CS 8100 3D to rule out buccal or palatal plate fractures (Fig. 2). None were evident on the scan. While her parents were upset that she had been injured, the ability to view a 3D image reassured them that the damage appeared to be limited to the tooth’s coronal structure.

Treatment Plan
The patient’s treatment options were: 1) do nothing; 2) restore with a composite restoration, realizing that this would have a questionable long-term prognosis due to size of fracture; 3) restore with a CAD/CAM milled crown. The patient and her parents were advised that cases where teeth have been injured traumatically such as in this case, one might experience a post traumatic irreversible pulpitis at a period of time beyond the initial trauma. In some cases, this condition may be treated by endodontic treatment and crown restorations but in other cases root resorption may take place precipitating the loss of the teeth. These teeth will need to be monitored every 6 months over several years with periapical radiographs. Every appropriate effort to maintain the tooth in place and avoid the need of an implant until the patient reaches maturity. Dental implants in adolescent patients may affect vertical growth and development of the alveolar ridge because the osseointegrated implant acts as an ankylosed tooth. At a focus conference on Advanced Dental Implant Studies, Dr. Mills summarized that jaw growth in a young adolescent patient may compromise the outcome of the oral rehabilitation using an implant supported prosthesis even if implants successfully integrated. After presentation of the treatment plan and discussion of risks, benefits, options, and alternatives; the parents and patient elected to restore tooth #9 with a CAD/CAM crown.

The parents understand this crown will likely need to be replaced once she reaches adulthood for the best cosmetic appearance, as her teeth and face will change with further growth and development.

Tooth #9 was anesthetized and prepared for a ceramic crown. I utilized the CS 5000 intraoral scanner to scan the prepared maxillary anterior quadrant and the opposing mandibular anterior quadrant as well as obtain a bite registration (Figs 3, 4). CS Restore software was then utilized to design the anterior crown (Figs. 5-7). The CS 5000 milled the crown from an in-
Porcelain laminate veneers – avoiding complications

By DCDM

Dental veneering is the process of covering the facial surfaces of teeth by using various types of dental materials. Most commonly used are porcelain veneers which are thin shells of porcelain that are shaped like the outer layer of the teeth and are used to cover the teeth, aiming to enhance their appearance.

Many celebrities opt for this esthetic treatment to achieve what may seem like a picture-perfect smile. This may lead people to a false expectation that everyone is a good candidate for veneers. However, from a dental clinician’s perspective preparing and planning for veneers is very challenging, and if improper analysis of the patient and proper techniques in preparing the teeth are not used, multiple complications may occur. These include gingival inflammation, chipping and breaking or even complete de-bonding of the veneers.

To decide whether a patient is a good candidate for veneers many factors should first be assessed; the condition of the patient’s teeth, habits, periodontal condition and most importantly the patient’s expectations and willingness to maintain their veneers after they are placed.

We should start by analysis of the teeth. This involves assessing their shape and proportion; diastemas, and analysis of the occlusion. Regarding shape and dimension, there should be sufficient tooth structure to retain the veneer, otherwise the longevity can be severely affected. In teeth with small surface areas such as lower incisors, or teeth with multiple cavities and fillings which decrease the available surface for bonding, there is an increased chance of the early displacement of the veneer. In such cases full crowns may offer a better long term option.

In terms of diastemas, if these are too large veneers can only partly reduce the space, otherwise gingival inflammation and/or recession can occur due to the bulkiness of the veneer. Marginal staining after veneer placement can also be assessed, which leads us to the last key point of gingival health. Veneers should not be prepared on bleached gingiva, which indicates poor oral hygiene. If this is done, complications which arise include placing the veneer margin too deep due to gingival enlargement, and bleaching during preparation and bonding leading to poor marginal seal and marginal staining after veneer placement. Eventually gingival recession or worsening inflammation will result. Good oral hygiene and gingival health should be achieved before veneers are started. All of these factors need to be considered during the initial assessment to avoid complications.

Additional complications can arise during the preparation of teeth. There are two common approaches to placing porcelain veneers, one is done without altering the natural teeth - bonding the porcelain veneers to unprepared teeth. This might seem a conservative choice avoiding alteration to tooth surfaces, but it inevitably creates a bulky over-contoured appearance and increases the risk of the veneer de-bonding and gingival complications. Alternatively teeth are prepared for veneers by changing external contour, removing less than a millimetre of the facial surfaces and around 2 mm of the incisal edges, thus porcelain replaces the tooth structure removed, ensuring the porcelain is seated properly onto the tooth with enough bulk of porcelain at the edge to minimise chances of chipping and breaking. Studies have shown that the overall success and survival of the first method is much lower than the second method. The commonest complications with veneers are breaking and chipping (H.Serdar Cotert et al, 2009)(Layton and DPhill, 2013)(Akoglu et al, 2011).

A study analyzing the overall survival rate of porcelain veneers over a 20 year period concluded that the estimated survival rate over a 5 year period is at 95%, at 8 years is 94%; at 10 years is 86% and at 20 years is 85%. (Beier et al, 2012). It should be noted that these were veneers placed after adequate tooth preparation. The clinician must consider all these factors before choosing to place veneers if complications are to be minimised and patient satisfaction achieved.

Figure 1. A significant staining of the veneer margins as a result of smoking and high coffee consumption.

References are available from the authors.
Case report surgical correction of a class III malocclusion in an adult

By Dr. Fabien Depardieu

This case report describes a successful orthognathic treatment of a skeletal Class III malocclusion with mandibular prognathism in an adult individual. The patient with Class III malocclusion, having mandibular excess in sagittal and vertical plane, was treated with orthodontics, bilateral sagittal split osteotomy. The surgical-orthodontic combination therapy has resulted in near-normal skeletal, dental and soft tissue relationship, with marked improvement in the facial esthetics in turn, has helped the patient to improve the self-confidence level. The interdisciplinary approach is the treatment of choice in most of the skeletal malocclusions (1).

Keywords: Class III malocclusion, decancellation, Orthognathic Surgery, Bilateral sagittal split osteotomy, prognathism, surgical orthodontic treatment.

Introduction

The Skeletal Class III malocclusion is characterized by mandibular prognathism, maxillary deficiency or both. Clinically, these patients exhibit a concave facial profile, a retrusive nasomaxillary area and a prominent lower third of the face. The lower lip is often protruded relative to the upper lip. The upper arch is usually narrower than the lower, and the overjet and overbite can range from reduced to reverse.

The effect of environmental factors and oral function on the etiological factors of a Class III malocclusion is not completely understood. However, there is a definite familial and racial tendency to mandibular prognathism. For many Class III malocclusions, surgical treatment can be the best alternative. Depending on the amount of skeletal discrepancy, surgical correction may consist of mandibular setback, maxillary advancement or a combination of mandibular and maxillary procedures. After surgical correction of the skeletal discrepancy, the occlusion is usually finished orthodontically to a Class I relationship. However, if surgical treatment is not performed, and the final molar relationship is Class III or Class I, there are challenges specific to the static and functional Class III occlusion that must be considered. Sometimes a Class III relationship is caused by a forward shift of the mandible to avoid incisal interferences. This is a pseudo-Class III malocclusion. In these cases, it is important to establish the inter-occlusal relationship with the teeth in the retruded contact position.

In this paper, the surgical orthodontic treatment of a young adult patient with a Class III malocclusion is illustrated.

Diagnostic and Etiology

The patient was a 28 year-old man who had a Class III facial type and slight crowding with a complete Class III relationship. His chief complaint was an unesthetic facial and uneven bite. His medical history showed no contraindication for orthodontic therapy and orthognathic treatment. No one in his direct family had a skeletal Class III features.

The pretreatment extra-oral photographs showed symmetrical facial structures (Fig 1). The patient had a concave profile, a decreased nasolabial angle and a prognathic lower lip. The intra-oral photographs (Fig 2) showed a Class III occlusion on each side with an anterior crossbite and without apparent crowding. Overjet was -2.0 mm, and overbite was -3.5 mm. His maxillary anterior teeth were prognathic, with inadequate display when smiling. The mandibular dental midline was deviated 2.5 mm to the right, although the maxillary dental midline was coincident with the facial midline. There were no signs or symptoms of temporomandibular joint dysfunction. Mandibular movements, such as maximal opening and lateral and anterior displacement were within normal limits. No deviation and pain were discovered during the border movement of the mandible.

A cephalogram and a panoramic radiograph were taken before treatment. The cephalometric analysis and its tracing showed that the mandible protruded relative to the cranial base (SNB angle, 82°; ANB angle -2°). The panoramic radiograph showed no other abnormal signs.

After the analysis of the photographs, the casts and radiographs, it was decided to approach his problems as a skeletal Class III malocclusion with an anterior cross bite and a lower deviated midline (2).

Treatment Objectives

The treatment objectives (5) were to obtain a harmonious facial profile by decreasing the protrusion of the mandible, improve the occlusion, including correction of the anterior crossbite, establishment of ideal overjet and overbite, achievement of a functional molar relationship; and place the dental midlines in the middle of the patient’s face. We planned:

• To set back the mandible to correct the prognathism and the midline deviation.
• To relieve the proclined maxillary incisor position and to relieve the dental compensations.
• To relieve the dental compensations by straightening the mandibular incisors to an upright position over basal bone.

Treatment Alternatives

The first alternative was orthodontic treatment with extraction of 4 premolars. Through the retraction of the mandibular anterior teeth, the anterior crossbite and Class III molar relationships would be corrected and the concave facial profile would be camouflaged. Nevertheless, the mandibular incisors were not suitable for much distal movement because of the thin trabecular bone in the mandibular anterior area that could damage the periodontal tissues by gingival recession, fenestration or dehiscence.

The second alternative was combined surgical and orthodontic treatment. The anterior crossbite would be corrected with a single-jaw surgery; a mandibular setback. The concave profile would be improved.

Figure 1. Pre-treatment extra-oral

Figure 2. Pre-treatment intra-oral
as well. It was decided to extract the upper second premolars to relieve the dental compensations by repositioning the upper incisors.

The third alternative was to correct the class III malocclusion by miniscREW-assisted mandibular dentition distalization. However we decided that the skeletal problem was too excessive and required orthognathic surgery.

After we discussed the three alternatives with the patient, he chose the second option.

Treatment Progress
The preoperative orthodontic preparation began on December 2011. Before the levelling and alignment procedures (4), the maxillary second premolars were extracted to compensate the maxillary incisor inclination and to reduce the acute nasolabial angle.

Pre-adjusted 0.022-in edgewise brackets were bonded to all teeth. The preoperative orthodontic treatment was achieved in 12 months, ending with 0.018 x 0.025 stainless steel surgical archwires for the maxillary and mandibular arches.

The orthognathic surgery involved a set back of the mandible with a bilateral sagittal split osteotomy. This was performed to improve the mandibular profile and establish an Angle Class I canine position with ideal overjet and overbite.

After the surgery, the patient was placed in intermaxillary fixation for 2 weeks. Two months after surgery, finishing was performed with maxillary and mandibular 0.018 x 0.022-in titanium-molybdenum alloy archwires.

The appliances were removed after 16 months of active treatment. Bonded lingual retainers were fitted to the lingual surfaces of the anterior teeth in both arches. Maxillary and mandibular essix retainers were delivered with instructions to wear them full time for two weeks and then night time.

Treatment Results
The post treatment photographs (Fig.5) showed that facial aesthetics was improved, and ideal occlusion was achieved with proper overjet and overbite. The maxillary dental midlines coincided with the facial and mandibular midlines.

The occlusion was finished to a Therapeutic Class II.

Discussion
The decision for surgical orthodontic treatment for this patient was based on the fact that his primary concern was his facial profile.

Before the single-jaw surgery: a mandibular setback, preoperative orthodontic treatment, including compensation of the malocclusion, is necessary. The dental compensation we performed was intended to retract the proclined maxillary incisors to a normal axial inclination. Lack of optimal dental compensation compromises the quality and quantity of an orthodontic correction. The patient's teeth were compensated by extracting the upper second premolars and levelling the mandibular arch. This phase was achieved in 12 months.

Conclusion
This case report describes the surgical orthodontic treatment of a young adult man with dental and skeletal class III relationship. The orthognathic treatment was the best option for achieving an acceptable occlusion and a good aesthetic result. An experienced multidisciplinary team approach ensures a satisfactory outcome.

Presurgical orthodontics removes all the dental compensations and suggests the extent of the skeletal discrepancy. Normal skeletal base relationship is achieved by osteotomy and setback of the prognathic mandible, postsurgical orthodontics guides the normal occlusal rehabilitation by correcting any emerging dental discrepancies.

References

Contact Information
Dr. Fabien Depardieu
Orthodontist specialist at Dr Roze & Associates Dental Clinic
fabien@dradubai.com
Dental implant competitors shake things up amidst economic uncertainty

By Kristina Vidug, USA

In 2015, the global dental implant market—composed of the sale of dental implant fixtures, final abutments and other devices—was valued at over US$5.7 billion. The European market, valued at nearly one-third of the global market at close to US$1.2 billion, contracted through 2014, as uncertain economic conditions continued to reduce procedure volumes and as more low-cost competitors entered the market, driving down prices.

These factors hampered the expected economic recovery and resumption of growth projected for 2015. As a result, the dental implant market will continue its decline before stabilising in 2015. Only then will the European market slowly begin to recover. Factors such as low gross domestic product growth and high unemployment continue to render dental implant procedures—which are primarily paid for by consumers. For instance, Straumann has reduced the price of its titanium implants by 15 per cent in Austria, Germany and Switzerland. While the price change only came into effect in the first quarter of this year, the strategy appears to have been effective because the company reported a 6 per cent rise in first-quarter revenue compared with a 6 per cent decrease in the same period last year.

The price reduction has come at a perfect time: while economic conditions begin to slowly improve, consumers are still extremely price sensitive. These price cuts therefore allow dental professionals to offer premium implant products to their patients at a reduced rate.

Straumann’s price reduction is not its only foray into the value market. In the first quarter of this year, the company purchased US$30 million worth of bonds from low-cost South Korean dental implant manufacturer MegaGen. The investment, which will be converted to shares in 2016, will help bolster Straumann’s revenue while allowing it to participate in both the premium and value segments, thus appealing to a wide range of practitioners and patients alike.

Straumann is not the only company shaking things up in the world of dental implants. Zimmer Dental recently announced its acquisition of rival Biomet. While both companies are better known for their orthopaedic products, they are fairly significant competitors in the dental industry as well. Lay-offs are not uncommon when companies merge, especially when the companies in question offer the same types of products. This can have a negative impact on sales in the short term, as the newly conjoined companies’ sales force decreases, leading clients to switch to other competitors.

However, this will not be the case with the Zimmer-Biomet merger, at least not in the short term, as the sales teams from both companies are expected to be retained through the merger. The cost of retaining both sales teams has been estimated at US$400 million. While the effect of this acquisition on the market remains to be seen, the fact that the sales force will not be decreasing bodes well for the newly merged companies, likely resulting in an increased market share in the dental implant segment.

There is discussion of merger and acquisition activity among other companies in the segment too, with Nobel Biocare reportedly in talks to sell to private equity firms and strategic buyers. While these talks are still in the very early stages, what is certain is that there has been a great deal of activity in the competitive landscape in the past several years.

This, combined with the aforementioned economic factors, is turning this once stable and mature market into a dynamic, action-filled space. With the dental implant market set to rebound in Europe and with revenues expanding in other countries—particularly in the rapidly developing BBIC and Middle Eastern markets—the global industry is poised for even further change, and the competitive landscape could look entirely different a few years from now.

About the Author

Kristina Vidug is Market Research Analyst at Decision Resources Group, a U.S.-based market information provider.
SameDay Dental Implants® & Teeth
A Surgical & Prostho Protocol

By Costa Nikolopoulos Oral & Maxillofacial Surgeon (S.A.) & Petros Vourgos Specialist Prosthodontist (U.S.A.)

The original Branemark protocol advocated the use of a two stage surgical approach where the turned (smooth) implants were buried for several months under the mucosa. With the advent of surface enhanced and tapered implants the protocol later evolved into a one stage approach.

Several clinicians then proceed-ed to immediately load these one stage implants with good success provided good primary stability (more than 45Ncm) was achieved at time of implant placement and provided micro-movements could be limited to 10μm. Angle reports have been published on immediate loading of dental implants showing an initial unloaded period of 5–6 months is not necessary. From a patient’s point of view the reduction of treatment time between implant placement & installation of a functional prosthesis leads to increased patient satisfaction & treatment accept ability. The gain in time the patient implies an economical benefit especially for professionals and/or socially active patients.

High treatment acceptance and patient satisfaction are the most important advantages of immediate loading and immediate function.

Surgical Protocol
The surgical protocol of immediate loading of dental implants with same day teeth is based on the following:

Avoid Bone Grafts
This is in line with Prof. E.L. Branemarks philosophy of “Lesser Surgery to Treat More Patients” (Fig 1).

With increased costs and patient morbidity due to bone grafting, an increased patient resistance to implant treatment has been noted. An alternative method of treating implant patients who have suboptimal bone volume without bone grafting is made possible by using:

1. Angled implants in a tilted manner placed into available bone anterior and posterior to the maxillary sinus (Fig 2).
2. Wider and appropriately shaped implants placed into immediate extraction molar sockets thereby avoiding socket or sinus grafting (Fig 5).

High Primary Stability
An important factor for immediate loading success is high primary implant stability (greater than 45Ncm) which can be achieved by using a surface enhanced tapered implant design to enhance lateral compression of bone. By underprepping, high insertion torque and primary stability can be achieved even in cases of decreased bone density such as is often the case in maxillary alveolar bone and as well as in osteoporo tic patients. Primary stability can easily be measured during implant placement with a torque wrench (Fig 4). If 45Ncm insertion torque is not achieved, the implant should be removed and without further bone preparation a 1mm wider implant is placed. This usually results in adequate primary stability of 45Ncm for immediate loading. If 45Ncm insertion torque is still not achieved then again the implant can be reinserted with an even wider diameter implant if the available bone width permits. This result results in adequately high insertion torque and primary stability that can be achieved even in cases of poor bone density. Scientific research shows less bone loss, better bone levels and peri-implant soft tissues with the transosseous abutments are placed at time of surgery and never removed (Fig 9).

Prosthodontic Drive
By using a silicone key of the facial surfaces of the existing teeth (Fig 5) or a silicone key of a diagnostic wax up (Fig 6), it is possible to place the implant in the correct position and angle so that the screw access hole can exit in the correct place to allow for screw retention. In order not to loose significant orientation, extractions are not performed all at once prior to implant placement but are rather performed one at a time followed by implant placement so that the silicone key can direct the implant surgeon (Fig 7).

It is very often necessary to use an implant with a build in angle of 12°, 24° or even 56° so that the case can be screw retained. Screw retention is an absolute requirement for biological reasons (to avoid risk of inflammation due to excess cement) as well as the ease of handling of immediate loading in a surgical environment.

Screw registration is started prior to extraction of all the teeth in the mouth to check on this point so as not to loose the centric relation and vertical dimension (Fig 8). If necessary, these teeth are then removed and the bite registration is completed with addition of bite registration material onto the remaining healing caps.

One Abutment One Time
After bone milling to remove any interfering bone, four to six implants are placed on the implants and torqued to 45Ncm at the time of surgery. If 45Ncm primary stability (>45Ncm) are immedi-ately loaded with screws retained teeth. For single implant cases, the final all ceramic screw retained tooth is fabricated and delivered to the patient within six hours. For multiple implant cases, temporary screw retained acrylic teeth are fabricated with a screw access hole and permanent screw retained all ceramic or metal ceramic teeth are delivered one week later.

Timing of Immediate Loading Dental implants either should be loaded the earliest possible (never exceed ten days after stability) or alternatively two months after placement. This is because the so-called initial stability (mechanical stability) that an implant has, starts to drop gradually and the implant becomes more prone to failure if forces are applied. Fortunately, simultaneously a “sec ondary stability” (Osteointegratio n) starts to build up. The sum of the two “stabilities” which is demonstrated on the stabil ity graph (Fig 16), gives us the “total stability”. As a golden rule implants ideally should never be disturbed during the “stability dip” period.

Preoperative Preparation
In order to achieve this protocol, preoperative screening and detailed surgical and prostho-

Fig 1. Dr. Costa and Dr. Petros in line with Prof. Branemark’s philosophy of “Lesser Surgery to Treat More Patients”.

Fig 2. Angled implants placed into available bone anterior and posterior to the maxillary sinus.

Fig 3. Immediate molar replacement implants.

Fig 4. 45Ncm Primary Stability measured during implant placement.

Fig 5. Silicone key of the facial surfaces of the existing teeth.

Fig 6. Silicone key of a diagnostic wax up.

Fig 7. The silicone key can direct the implant surgeon.

Fig 8. Bite registration is started prior to extraction of all the teeth on the “clean” implant platform with no interfering bone or soft tissue and are never removed (Fig 9).

Scientific research shows less bone loss, better bone levels and peri-implant soft tissues

Fig 9. Good peri-implant tissues with “One Abutment One Time” approach.

Fig 10. Healing caps placed on abutments.

Fig 11. The single implant with a Zirconia screw retained crown.

Fig 12. Pulpation of the extraction socket walls with a peri-odontal probe.

Fig 13. In healed sites where possible the “punch” techniques is used.

Fig 14. 4O-On-4.

Fig 15. All On 6.
In the first phase of馳假, the zirconia core and eventually the porcelain on it. Four to six hours later the permanent tooth is placed into the mouth of the patient. This is the last step of the surgical procedure. In the second phase, the permanent tooth is temporarily stabilised and the patient is referred to the dental technician. This is achieved by:
1) taking photos and videos to record the esthetic result, in the mouth and
2) using the so-called “Clinical Remounting Procedure”, in the laboratory.

Multiple Implants Reconstruction

1) Temporary Teeth

The temporary teeth immediately don’t only a great service to the patient but is also the best “diagnostic tool” for the restorative dentist to record all necessary information for the fabrication of the permanent teeth. If needed modifications are made easily to the acrylic teeth either directly in the mouth or in the dental lab.

The patient should be evaluated for aesthetics, phonetics and occlusion. Midline, plane of occlusion and buccal corridors are established. The “S” and “P” sounds are checked. The occlusal scheme is adjusted. For extensive cases the “mutually protected occlusion” (Fig. 23) is used. This is established which means that in centric occlusion, all teeth are touching but the posterior teeth have slightly heavier contacts compared to the anterior and on lateral and protrusive excursive movements the anterior teeth are touching/guiding and there are no posterior “working” or “non-working” interferences (anterior guidance). X-rays are taken in order to verify the passive fit of the prosthesis.

Once all necessary modifications are made and the patient is satisfied, we need to convey all newly established parameters to the digital Denture design (Fig. 24). This is done by:
1) A series of silicon keys which will guide him to fabricate the permanent teeth and ii) an “Arti-
cial Custom Made Guiding Table” (Fig. 22) which will allow him to reproduce the occlusal scheme of the temporary teeth to the permanent teeth.

Two months later the temporary teeth are placed again in the mouth of the patient and the removable prosthesis is remounted to 20 Ncm. He is instructed not to bite hard onto the acrylic teeth and he is also given oral hygiene instructions to follow. He is discharged with the help of:
1) the interchangeable implant and temporary models, ii) the silicon keys, iii) the anterior custom made guiding table, iv) the photos and v) the videos.

2) Permanent Teeth Fabrication

The permanent teeth are fabricated immediately. The correct form and temporary models, ii) the silicon keys, iii) the anterior custom made guiding table, iv) the photos and v) the videos starts to fabricate immediately the permanent screw retained porcelain teeth.

The permanent teeth need to be ready in one-week’s time and should have perfect fit onto the implants. This is one of the most important prerequisites for optimal implant longevity.

The material of choice, used by our dental lab, for the past 20 years, is porcelain fused to metal. The fabrication of the metal ceramic prosthesis involves a series of technical sensitive procedures, inevitably in each step, small “5 dimensional inaccuracies” are introduced into the fabrication. The sum of these inaccuracies is never zero. As a re-

result, at the end of the fabrication procedure, the final prosthesis will never have a perfect fit onto the implants. The use of the “Passive Abut-
ment” (Fig. 25), which is a tit-
nium machine-cut interferential component/cylinder, offsets all the 3D inaccuracies, provided that the implant model is accurate. The passive abutment is cemented by the dental techni-
cian onto the fitting surface of the prosthesis, in the lab. The master implant model is used as a blueprint for the cementation. Based on our experience over the past 15 years of using passive abutments, the metal try in procedure is not necessary, thus speeding up the fabrication of the final prosthesis.

The temporaries are removed, the prosthesis is cleaned, dried and immediately the permanent teeth are screwed onto the implants.

There is a big benefit having to work only with “one piece screw retained” (Fig. 26) procedure.

There are no multiple custom abutments to be positioned first, the removable prosthesis, the “one piece prosthesis” makes adjustments much easier, there is no excess cement to deal with, saving cementation that can cause significant complications if left accidentally under the imma-
ture tissues.

Fitting of the prosthesis is as-

sessed with the patient seated with the help of the temporary teeth all parameters (esthetic, phonetics, occlusion) are checked and adjustments are made. The provisional prosthesis is torqued down to 25Ncm and the prosthetic access holes are obturated. A night guard is provided and the patient is instructed to use it every night. Oral hygiene instructions are demonstrated and their impor-
tance is emphasised.

Follow up

Two months later the oscillation-

ermination of the implants is radiographically and mechanically evaluated. In case of soft tissue recession, a pick up impression of the prosthesis is done. A new soft tissue model is fabricated and the dental technician can add porcelain accordingly (Fig. 27). The patient is followed up every six months for the first two years and thereafter according to his/her oral hygiene level.

Complications

The most common complications are porcelian fractures/chipping. These are easily repaired by removing the porcelain and relaying the porce-

lain.
Intra-bone GPS
Navigating the Future of Dental Implants!

IRIS-100
Implant Real-time Imaging System

- Real-time monitoring of drill position in a CT environment
- Ability to confirm positioning and parallelism with Virtual implants
- Avoids excessive radiation dosages to the patient
- Faster recovery with less trauma
- Safe and reliable results
- Educational versions available

EPED
TEL: +886-7-6955596 | FAX: +886-7-6955579 | www.eped.com.tw | eped-sales@eped.com.tw
used to etch the fitting surface of each veneer for 60 seconds as recommended by the manufacturers to obtain a clean ceramic surface for durable bonding. Empress ceramic primer Monobond-S was used as a silane-coupling agent for one minute and then air dried for five seconds according to the manufacturers instructions. One layer of Excite bonding agent was applied on the fitting surface of each veneer for 60 seconds then air thinned for 5 seconds Fig 10.

• Tooth structure surface treatment:
Transparent strips were used on the proximal surface of adjacent teeth to avoid etching effect. Phosphoric acid 35 % was used to etch the enamel margins of the tooth preparations for 30 seconds and 15 seconds for the dentin areas. Copious air water spray was used to remove the acid for 30 seconds. One layer of Excite bonding agent was applied on the tooth structure and air thinned for five seconds. LED light curing unit was used for curing. Vario-link Veneer light activated resin cement was used for cementation of the two laminate veneers. Optra Sticks were used for holding the labial surface of the veneer for better handling processes during cementation. Initial polymerization was made and excess cement was removed with a sharp tip of a probe. Dental floss was used to ensure that there is no trapped cement in between the embrasures. Final polymerization was completed. Intra oral proximal strips were used for better smooth proximal margins Fig.11.

By Dental Tribune MEA

Under the high patronage of his Excellency the President of the Parliament of Lebanon Mr. Nabih Berry, Lebanese Dental Association known by its yearly BIDM (Beirut International Dental Meeting) has organized the 24th BIDM 2014 in collaboration with the Saudi Dental Society at BIEL in Beirut on 11-15 September 2014.

Pre-congress courses and workshops took place on September 10 at “USJ” - University St. Joseph - Faculty of Dentistry which was managed by Professor Ghassan Yared and Professor Carina Mehanna, under the supervision of Prof. Nada Naaman, Dean of Faculty of Dentistry.

On the first day of the event the attendees witnessed the ribbon-cutting ceremony followed by a tour of the exhibition exploring the latest dental technologies, equipment and services displayed by numerous key industry leaders and dental manufacturers.

The BIDM 2014 not only opened the doors to open-discussions and learning for the region but allowed the participants to build their skills and use the opportunity for networking by up-to-date knowledge and sharing experiences in the application of technology throughout the event.

President of Lebanese Dental Association, Prof. Elie Maalouf discussed during the opening ceremony: “With the theme “Planning for the Future” we encourage all Lebanese living in Lebanon and abroad, as well as all Arab and foreign dentists to attend this highly regarded meeting, in an effort to plan for a better future, not just scientifically, but culturally and politically.”

Prof. Maalouf further announced, “We should all denounce terrorism and extremist behavior. Attending this meeting and especially in this dire time will tell the world that we are strong together and will show them that no matter how hard they try to separate us we will always find a platform to meet. Lebanon is a small country but it has always reflected to the world a sense of modern civilization and openness to all cultures and religions. Lebanon does not tolerate extremist behavior and will not allow negative media to taint its reputation. Holding ambitious annual dental meetings with world renowned international and local speakers will show the world that we are competing with first world countries regarding scientific achievements”.

About the Author
Dr. Mohamed Hassanien
B.D.S – M.D.S – P.H.D
Fixed Prosthodontics dept. Faculty of Dentistry – Cairo University
IA.D.C Certified Cerec Trainer

Dentek® Bone Morphogenecis

CompactBone® B.
Bone Morphogenecis
Soft-Bone Implants
Specialist in Difficult Bone

CompactBone® S.
Bone Morphogenecis
SL-Sinuslift Implants
Specialist for Sinuslift

BoneProtect® Guide
Nanocrystal coated collagen membrane

BoneProtect® Fleece
Cerabone® with Lipid Barrier
Mucodrill®
Soft tissue graft

BoneProtect® Cone
Nanocrystal collagen cone

Dentek® Dental Implant System

Dr. Mohamed Hassanien
B.D.S – M.D.S – P.H.D
Fixed Prosthodontics dept. Faculty of Dentistry – Cairo University
IA.D.C Certified Cerec Trainer

Dentek® Dental Implant System

Dentek® Bone Morphogenecis

CompactBone® B.
Bone Morphogenecis
Soft-Bone Implants
Specialist in Difficult Bone

CompactBone® S.
Bone Morphogenecis
SL-Sinuslift Implants
Specialist for Sinuslift

BoneProtect® Guide
Nanocrystal coated collagen membrane

BoneProtect® Fleece
Cerabone® with Lipid Barrier
Mucodrill®
Soft tissue graft

BoneProtect® Cone
Nanocrystal collagen cone

Dentek® Dental Implant System

Dr. Mohamed Hassanien
B.D.S – M.D.S – P.H.D
Fixed Prosthodontics dept. Faculty of Dentistry – Cairo University
IA.D.C Certified Cerec Trainer

Dentek® Dental Implant System

Dentek® Bone Morphogenecis

CompactBone® B.
Bone Morphogenecis
Soft-Bone Implants
Specialist in Difficult Bone

CompactBone® S.
Bone Morphogenecis
SL-Sinuslift Implants
Specialist for Sinuslift

BoneProtect® Guide
Nanocrystal coated collagen membrane

BoneProtect® Fleece
Cerabone® with Lipid Barrier
Mucodrill®
Soft tissue graft

BoneProtect® Cone
Nanocrystal collagen cone

Dentek® Dental Implant System

Dr. Mohamed Hassanien
B.D.S – M.D.S – P.H.D
Fixed Prosthodontics dept. Faculty of Dentistry – Cairo University
IA.D.C Certified Cerec Trainer

Dentek® Dental Implant System

Dentek® Bone Morphogenecis

CompactBone® B.
Bone Morphogenecis
Soft-Bone Implants
Specialist in Difficult Bone

CompactBone® S.
Bone Morphogenecis
SL-Sinuslift Implants
Specialist for Sinuslift

BoneProtect® Guide
Nanocrystal coated collagen membrane

BoneProtect® Fleece
Cerabone® with Lipid Barrier
Mucodrill®
Soft tissue graft

BoneProtect® Cone
Nanocrystal collagen cone

Dentek® Dental Implant System