

Special Edition

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Issue 9 | 2014  
CAMLOG Partner Magazine



**5<sup>th</sup> INTERNATIONAL  
CAMLOG CONGRESS –  
A REVIEW**



#### Dear readers

For many of you the 5<sup>th</sup> International CAMLOG Congress is still fresh in your minds. We have received extremely positive feedback and are delighted about the record attendance of 1300 delegates from 23 countries. Our thanks go to the organizing team headed by the two congress presidents, Prof. Dr. Fernando Guerra and Prof. Dr. Mariano Sanz as well as the president of the CAMLOG Foundation, Prof. Dr. Jürgen Becker.

Personally, I was impressed by the diversity

of the scientific presentations and the powerful network of CAMLOG customers. In particular, I enjoyed the comradery at the CAMLOG party and the motto "Una fiesta en familia" was certainly no exaggeration. Thank you all for participating. For those of you who could not attend: we are already working on the next issue of logo with a comprehensive report and abstracts on the scientific topics presented at the congress in Valencia.

Many customers and partners took the opportunity of meeting Peter Braun in person. Since June 1, 2014, he is CEO of the CAMLOG Group, and full of enthusiasm, zest and a sense of purpose. Get to know him at a personal level in the interview on pages 25 and 26. Peter Braun will continue the CAMLOG success story through his excellent strategic, operative and organizing talents and put his broad experience in the healthcare industry to the best of use to further strengthen the position of CAMLOG in the dental implantology market. One of his main objectives is the further internationalization of the CAMLOG brand.

I wish you a pleasurable read with this issue, full of clinical reports from dental practice, news about our product ranges and an exciting offer of international study courses.

Together we look to a positive future and wish you a good time, success in your daily profession, and, last but not least, the freedom to enjoy the pleasant things in life.

Kind regards

Dr. René Willi,  
Member and delegate of the CAMLOG  
board of directors

# WELCOME



## 5<sup>TH</sup> INTERNATIONAL CAMLOG CONGRESS IN VALENCIA WITH RECORD ATTENDANCE

This year's 5<sup>th</sup> International CAMLOG Congress was held in Valencia with the motto "The Ever Evolving World of Implant Dentistry". The Ciudad de las Artes y de las Ciencias, a unique city of the Arts and Sciences, offered the perfect scenario for the congress. Over 1300 delegates from all over the world and 66 internationally renowned speakers and moderators had travelled to this exceptional event which took place in the Palau de les Arts building – a real architectural highlight. In the presentations and the practical and theoretical workshops specialized topics and studies were discussed, new trends in daily practice were presented and examples demonstrated.

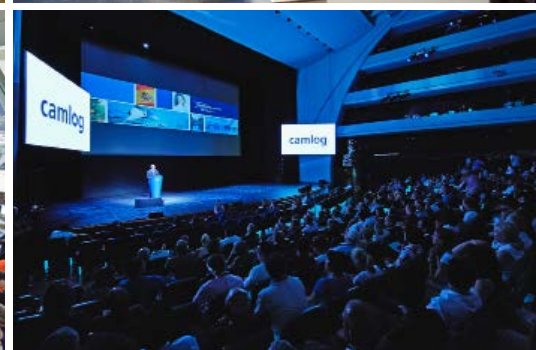
With the organization of the international CAMLOG Congresses, the CAMLOG Foundation offers a unique forum for further education and discussion for dentists active in implantology, surgeons, dental technicians, dental professional staff, students, industry and the media. The CAMLOG Congresses have always aspired to spark off future-oriented and groundbreaking thinking for the dental implant sector. Against this background, Congress Presidents Professor Dr. Fernando Guerra and Professor Dr. Mariano Sanz, together with the CAMLOG Foundation President Professor Dr. Jürgen Becker, invited to an exchange of ideas among scientists, practitioners and companies. The high-level and diverse program offered a total of 28 scientific presentations over five sessions. The expert audience praised the evidence-based results and the remarkably practical approach. Common to all presentations

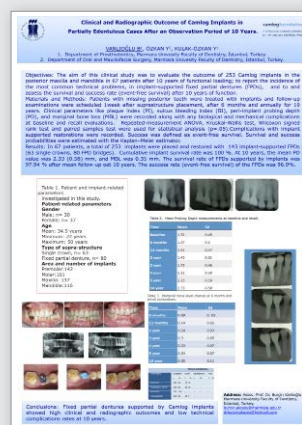
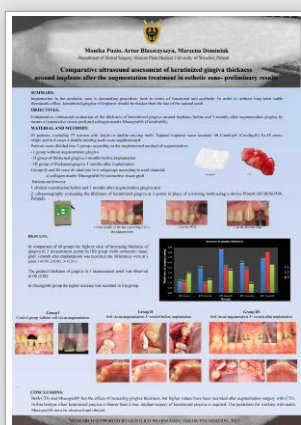
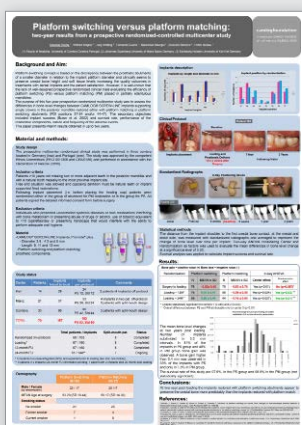
was the untiring desire to give patients the best treatment.

The highlight of both congress days was the panel discussion on "Complications – what can we learn from them". In this, the sixth session, four experts of the CAMLOG Foundation presented complications of implant treatment and restorations which had occurred in practice. Congress delegates were asked to join the panel to discuss solutions and possible approaches. The audience was involved by the moderators Professors M. Sanz and F. Guerra to vote on the treatment options. Then the experts presented their treatment solutions.

Numerous delegates took the opportunity of attending the practical or theoretical workshops on the eve of the congress. This is where renowned speakers explained science-based

surgical and prosthetic techniques and treatment concepts. The workshops provided excellent opportunities for a direct professional exchange between the speakers and industry partners. The gained impressions were discussed in depth with colleagues on the following two days of the congress.





## The poster competition

As part of the 5<sup>th</sup> International CAMLOG Congress, scientists, dentists and dental technicians submitted their original research or case studies for the poster competition. The committee of the CAMLOG Foundation accepted 37 posters from entries from Austria, Germany, India, Italy, Spain, Portugal and Turkey. The scientific level for the posters equaled those of the presentations and the submission criteria were high. Awards for the best posters came to a worthy conclusion during the award ceremony on the podium.

The team Salomão Rocha, Wilfried Wagner, Jörg Wiltfang, Fernando Guerra, Maximilian Moergel, Eleonore Behrens, and Pedro Nicolau were delighted to win the first prize with their topic

“Platform switching versus platform matching: Two-year results from a prospective randomized-controlled multicenter study” which convinced the committee and the congress participants. After the award ceremony, the award winners presented the study. The group received a prize money of EUR 2000. The second prize with EUR 1500 went to the team Monika Puzio, Artur Blaszczynszyn, and Marzena Dominiak. The topic of their study was: “Comparative ultrasound assessment of keratinized gingiva thickness around implants after augmentation treatment in the esthetic zone – preliminary results”.

The prize money of EUR 1000 went to the team in third place, Burçin Vanlioğlu, Yasar Özkan, and Yasemin Kulak Özkan.

They presented results on the “Clinical and radiographic outcome of Camlog implants in partially edentulous cases after an observation period of 10 years”.





### Una gran fiesta en familia

The legendary CAMLOG party was fully booked. Even before the party started, the drive to the Spanish hacienda was dominated by an incredible atmosphere of anticipation and expectations. Each participant had received an individualized "Spanish passport" which entitled to admission. The Hacienda Masía Xamandreu is a sprawling, meandering event location embedded in typical country-style gardens. An authentic reception with Mediterranean hospitality started the family festival "Una gran fiesta en familia" with excellent Spanish delicacies, traditional arts and infectious Spanish music. The evening climaxed in the party zone with dancing music and the performance of a lady soul singer.

The impressions gained and the many discussions during the two days of the congress were a convincing display of how the International CAMLOG Congress will help shape the future and that networking plays an important role.





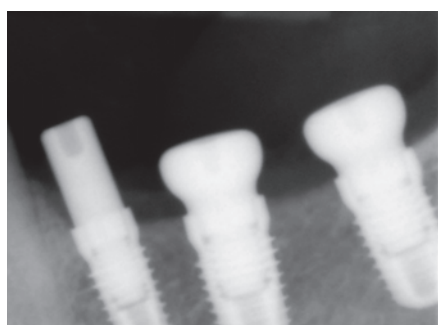
**Fig. 1:** Implants in regio 35, 36, 37 following surgery



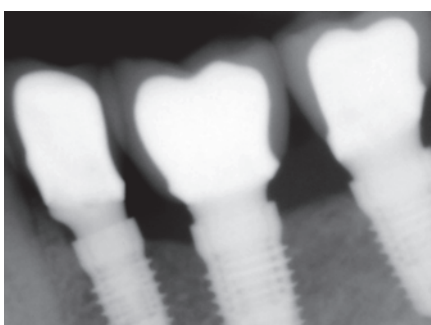
**Fig. 2:** Six weeks following surgery



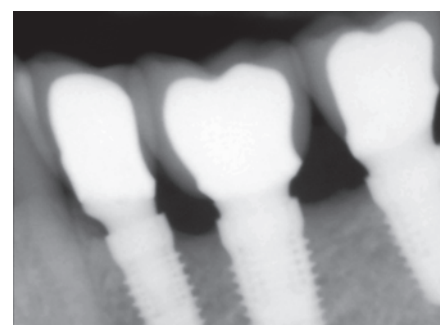
**Fig. 3:** One year after loading



**Fig. 4:** X-ray check following surgery



**Fig. 5:** X-ray check immediately following prosthetic restoration



**Fig. 6:** X-ray check one year after loading

Courtesy of Prof. Dr. F. Guerra



## EXCELLENT PRESERVATION OF CRESTAL BONE AROUND CAMLOG® SCREW-LINE PROMOTE® PLUS IMPLANTS

The one-year results of the current randomized multicenter study on changes at the crestal bone level around CAMLOG® SCREW-LINE implants with platform switching or platform matching were published with free access in the *Journal of Clinical Periodontology*.

**Guerra F., Wagner W., Wiltfang J., Rocha S., Moergel M., Behrens E., Nicolau P.** Platform switch versus platform match in the posterior mandible – 1-year results of a multicenter randomized clinical trial. *J Clin Periodontol* 2014;41:521-529

The aim of this prospective randomized clinical study was to evaluate the changes at crestal bone level for implants restored with either platform-switching (PS) or platform-matching (PM) abutments.

In the three study centers (two in Germany and one in Portugal) 68 patients received 146 CAMLOG® SCREW-LINE Promote® plus implants in the posterior mandible. The PS group comprised 35 patients with 74 implants, the PM group 33 patients with 72 implants. Healing caps were placed immediately after insertion of the implants

and in accordance with the randomization list. Implants were restored with single crowns. The survival and success rates as well as changes to the crestal bone level (BLC) were recorded from the time of surgery and loading respectively, up to twelve months after loading. In the PS group, the implant success rate was 97.3% and 100% in the PM group; there was no statistical difference between the two groups. The same applied to the relevant parameters for healthy soft tissue (plaque index, sulcus bleeding index and probing depth).

From surgery to loading, the mean BLC value for the PS group was -0.40 and -0.69 for the PM group, which is a statistically significant difference ( $p < 0.004$ ). No center-specific effects were observed. However, a center-specific effect was observed from

loading to twelve months. The mean BLC value for the PS group was +0.08 mm (bone growth) and -0.06 mm for the PM group. Bone growth was observed for 67.1% of the implants in the PS group and for 49.2% in the PM group.

The authors came to the conclusion that, for the same implant system, platform switching appears to have a positive effect on preserving crestal bone levels compared with platform matching.



Prof. Dr. Fernando Guerra



## APPLICATION-ORIENTED RESEARCH

REWARDED WITH THE CAMLOG FOUNDATION RESEARCH AWARD



Publications on the influence of the abutment material, the impact of loading on the interface, and the importance of patient-oriented planning for guided surgery were selected by the jury. The ceremony took place during the 5<sup>th</sup> International CAMLOG Congress. The prizes were awarded to young, talented scientists as well as practice-oriented specialists from universities, hospitals and dental practices for their work published during the two years running up to congress. We are delighted to present a summary of this year's award-winning presentations.







### Professor Florian Beuer wins first prize

Stimmelmayr M., Sagerer S., Erdelt K. **Beuer F.** "Wear at the titanium-titanium and the titanium-zirconia implant-abutment interface: a comparative in vitro study". **Dental Materials** 2012;28:1215-20

Wear is an important aspect for the long-term success of implant-abutment connections. The study group examined the wear of the interface between CAMLOG® SCREW-LINE implants and single-component zirconium oxide abutments and compared these with titanium abutments in an in-vitro study. The implant-abutment interfaces of the two groups were examined using light microscopes and scanning electron microscopes (REM), 3D microtomography was used in addition for the implants. After loading with 1,200,000 cycles at 100 N in a bi-axial fatigue testing machine, no implant or abutment fractures were observed, nor were loosening of the abutment screw or screw fractures. However, REM images showed more wear and damage to the implants if these were connected via single-component zirconium oxide abutments. The authors assume that the reason for these differences lies in the load distribution between abutments of varying strength: when using single-component zirconium oxide abutments on titanium implants the deformation energy is distributed over the material with the lower elastic properties, in this case titanium, which leads to higher wear and greater abrasion.



### Dr. Christian Mehl wins second prize

**Mehl C.**, Becker ST., Acil Y., Harder S., Wiltfang J., Dabbagh-Afrouz AA., de Buhr W., Kern M. "Impact of vertical loading on the implant-bone interface." **Clin Oral Implants Res** 2013 24(8):949-56

Peri-implantitis treatment or technical complications such as screw loosening or ceramic fracturing may lead to requiring removal of the prosthetic restoration. When removing cemented restorations, vertical mechanical loading is applied on the bone and on the implant-bone interface. The aim of the animal study with mini pigs was to assess the effects of such loads. During exposure of the implants, all implants were stable and complications were not observed for any of the 36 CAMLOG® SCREW-LINE implants (Ø 4.3 mm, L 9 mm). Three implants were left unloaded for each animal. The remaining implants were loaded vertically with 20 and 100 impulses respectively. For these implants, the energy of the impulses was 18 Ns, which simulates removal of a crown. After 13 and 18 weeks there were no histological differences in bone-implant contact between the loaded and unloaded implants. The authors thus concluded that the removal of a cemented restoration does not affect the mechanical stability of the implant, but enhances bone remodeling. However, one should proceed with care if osseointegration is impaired due to peri-implantitis, as vertical loading could lead to a loss of the implant in this case.



### Dr. Vincenzo Mirisola di Torresanto wins third prize

**Mirisola di Torresanto V.**, Milinkovic I., Torsello F., Cordaro L. "Computer-assisted flapless implant surgery in edentulous elderly patients: 2-year follow-up" **Quintessence International** 2014; 45(5):419-29 (accepted 2013, Nr. 6968)

Conventional overdentures are associated with discomfort or poor fit and are no longer regarded as state-of-the-art treatment for edentulous patients. Implant-supported overdentures in the edentulous mandible are the treatment of choice today. Flapless surgery to insert the implants represents a minimally invasive approach.

Is the protocol of computer-guided surgery always the treatment of choice when treating an edentulous mandible with an overdenture anchored with four intraforaminal implants and Locator® attachments – both from the perspective of the clinician as well as the patient? The answer to this question was the objective of the prospective mono-center clinical study conducted in 15 elderly edentulous patients with discomfort when wearing their conventional overdentures.

After careful planning, which included computer-guided 3D treatment planning, ten of the intended patients were treated with a flapless technique. They each received four CAMLOG® Guide SCREW-LINE Promote® implants (a total of 40 implants). Flap surgery was performed on the remaining five patients. The two-year clinical results demonstrate the ability of oral hygiene maintenance. Furthermore, patients showed a very high satisfaction of the treatment performed. This study underlines the importance of treatment planning. From the perspective of the clinician and the patient a protocol with computer-guided surgery can be classified as an effective and practical treatment method.





**Photo:** Dr. Gregory Snel (USA), Claudia Himmeldirk (CAMLOG Biotechnologies AG), Dr. Peter Hunt (Editor CamlogConnect), Dr. Haakon Kuit (Netherlands), Dr. Jan Spieckerman (Germany), Dr. Jörg-Martin Rupp (Germany), Dr. Elena Torsello (Italy), Dr. Gary Warburton (USA), Dr. Robin Yang (USA).  
Not in the photo: Dr. Flavio Rosetto (USA) and Dr. Marcus Gambroudes (UK)

## CAMLOGCONNECT AWARD CEREMONY

AT THE 5<sup>TH</sup> INTERNATIONAL CAMLOG CONGRESS IN VALENCIA

Learning from each other, sharing, and enjoying together: this is the idea behind the competition sponsored by CamlogConnect at the 5<sup>th</sup> International CAMLOG Congress for the best treatment concepts. The winners received their award in Valencia.

According to the motto “from CAMLOG users – for CAMLOG users”, experts in dental implantology exchange their experiences and therapeutic concepts online at [www.camlogconnect.com](http://www.camlogconnect.com). From all submitted entries received by March 31, 2014, CamlogConnect selected the best presentations and honored these with the CamlogConnect Award. CAMLOG sponsored the competition and donated the prizes.

### The competition

CamlogConnect members had to submit a case study, video or presentation with tips for therapeutic concepts to CamlogConnect by the entry deadline to participate.

### The prize

The winners were rewarded with attractive prizes. CAMLOG sponsored each winner with an invitation to the congress including the highly popular and legendary CAMLOG party. A travel subsidy was also available.

Visitors to the CAMLOG Congress were well aware of the exciting and entertaining program offered in the fascinating atmosphere under Spain's sun.

But the requirements to participate were high indeed. Those wanting to win had to convince a demanding panel of experts.

### The judges

International experts assessed the case studies, all of whom had previously published contributions on CamlogConnect. Things were not made easy for the jury, consisting of Dr. Axel Kirsch (Germany), Dr. Henning Lehmann Bastian (Denmark), Dr. Peter Flaherty (Canada), Dr. Paul Sipos (Netherlands), Dr. Joaquín Tabuenca (Spain), Dr. Ilaria Franchini (Italy) and Dr. Eric Normand (France). The entries included a number of successful treatment concepts. The top contributions were all very close together in terms of complexity and treatment concept employed.

### The winners

In the end, the following contributions were chosen:

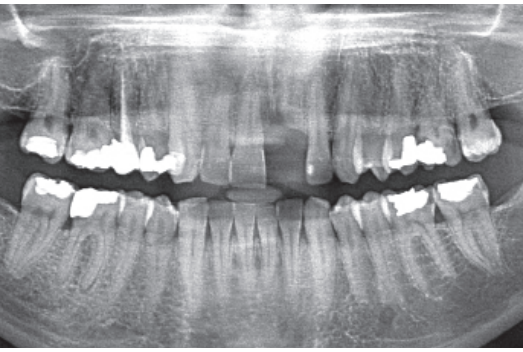
- Dr. Robin Yang with his team, Dr. Gary Warburton and Dr. Flavio Rasetto, USA
- Dr. Haakon Kuit, Netherlands
- Dr. Jörg-Martin Rupp, Germany
- Dr. Jan Spieckermann, Germany
- Dr. Marcus Gambroudes, UK.

Originally the plan was to award only five prizes, but the entries of two young implantologists attracted particular attention. Therefore, these entries also received an award. The prizes went to:

- Dr. Gregory Snel, USA
- Dr. Elena Torsello, Italy.

Thus, seven CamlogConnect members received awards at the ceremony. All winners and their contributions are presented on [www.camlogconnect.com](http://www.camlogconnect.com). Access requires membership of CamlogConnect. Online registration is free and very simple. Since the platform was launched in January 2012, over 3,400 CAMLOG users have joined the CAMLOG community.

Learn, share and enjoy!



**Fig. 1:** The X-ray shows progressive horizontal and vertical bone resorption.



**Fig. 2:** The too long gingiva shield contributes to resorption due to the rotational freedom of the flipper.



**Fig. 3:** To avoid further traumatization of the soft tissue, the flipper shield was shortened.



## THE CHALLENGE OF ESTHETIC IMPLANT RESTORATION WITH INSUFFICIENT ALVEOLAR RIDGE TISSUE

Dr. Jan Spieckermann, Jörg Wildenhain, both Chemnitz, Germany

Demands on treatment with implants are high, particularly in the esthetically relevant areas. In the case of difficult morphological conditions, the individual wishes of patients regarding their natural appearance represent a major challenge for the treatment team. A host of materials and techniques for crowns and abutments allow for perfect imitation of the tooth structure. However, esthetic restoration is only successful if a natural peri-implant hard and soft tissue profile can be preserved or reconstructed. The following case study illustrates the complexity of implant treatment for combined horizontal and vertical bone resorption following the traumatic loss of the left central incisor.

### Dental history and treatment plan

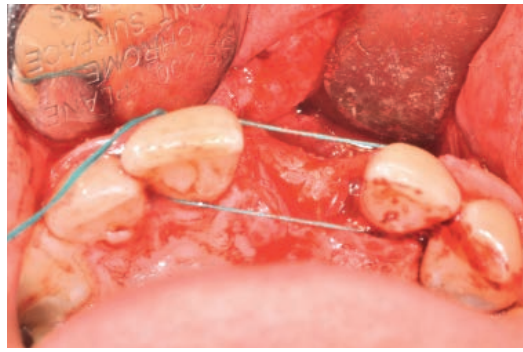
The most predictable, long-term stable esthetic results are achieved through a synergistic process for diagnosis and therapy involving the various dental specialties. Science-based therapies need to be implemented with surgical and prosthetic precision and require the active participation of the patient both during and after treatment. A 29-year old patient was referred to our oral surgery practice with the request of performing implant therapy on the anterior maxilla. He had lost the upper

left incisor in an accident some months before. The gap had been treated with a flipper by the referring dentist. The removable restoration strongly affected the social well-being of the young man. Examination showed advanced horizontal and vertical bone resorption (**Fig. 1**). An extended plastic shield on the flipper was to visually compensate for bone loss (**Fig. 2**). This untoward design of the flipper exerts continuous pressure on the alveolar ridge due to the rotary freedom around the clamping axis, particularly during removal but also during chewing motions. The unphysiological force induction influences the progression

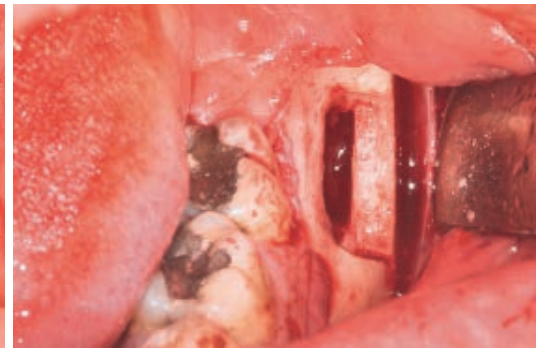
of bone resorption. To avoid further traumatization of the hard and soft tissue, we removed the gingival plate of the flipper and created a pontic-like design of tooth 21 (**Fig. 3**). With the exception of the pronounced bone deficit in regio 21, there were no negative findings during examination of the anterior tooth region (**Fig. 4**). We took impressions of the situation, prepared models and performed articulations. Then all therapeutic options were weighed against each other. We prepared a biological and economic cost-benefit analysis for each solution [1,2]. We discussed all options in-depth and in



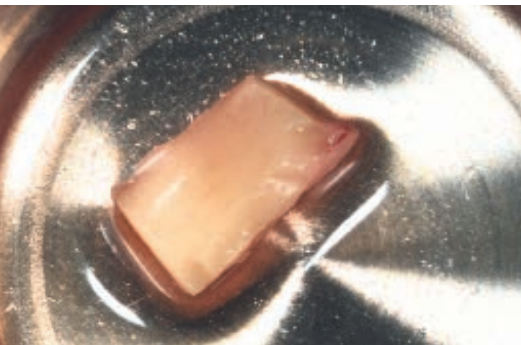
**Fig. 4:** The occlusal top view shows the horizontal hard and soft tissue deficit in the implant region.



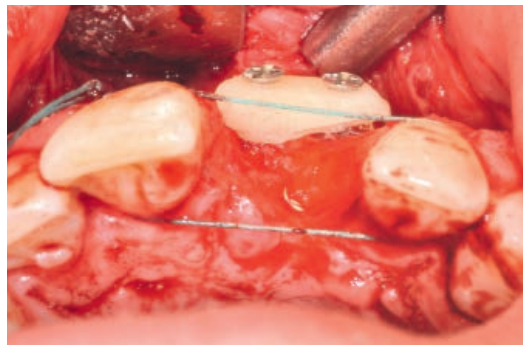
**Fig. 5:** A loop thread around the adjacent teeth illustrates the bone deficit.



**Fig. 6:** The bone block was harvested in sufficient size from the Corpus/Ramus mandibulae.



**Fig. 7:** The bone graft was stored in physiological solution until further processing.



**Fig. 8:** The autologous bone block was adapted to the shape of the host site. The focus was on the forming of the juga alveolaris.



**Fig. 9:** The cavities were filled with ground autologous bone chips and Bio Oss® was applied to the bone edges to protect against resorption.

detail with the patient. The justification for implantation was that both adjacent teeth were free of caries and should not be ground. Knowing that a correctly placed implant would prevent further resorption of the jaw bone, we prepared the most suitable treatment plan for the patient in our view.

The challenge of every treatment is the natural appearance of the restoration's outcome. The esthetic characteristics proposed by Magne and Belser 2002 [3] are part of our pre-prosthetic planning and are discussed among the team. The focus is on the condition and color of the gingiva, achieving closed interdental spaces, a balanced profile of the gingiva, interdental contact points, the shape of the tooth, characterization of the teeth and their texture, the alignment and position of the teeth, as well as the symmetry of the smile. The design of the convex structure of the alveolar bone ridge and the reshaping of the jugae alveolaris in the "red" area are just as important for a natural appearance as the perfect "white" crown reconstruction.

Reconstruction of the bone deficit, both vertically and horizontally, requires a bone block graft. To ensure the success of the surgical intervention for the three-dimensional placing of the implant, we opted for a two-stage procedure. In other words, the planned implant is inserted after regeneration of the bone.

### Reconstruction of the bone defect

After giving a local anesthetic both in the donor and the host region, a medio-crestal incision with vertical relief cuts was performed in the anterior maxilla, distal to the adjacent teeth. To allow sufficient mobilization of the mucoperiosteal flap and tension-free adaptation of the margins, the relief incisions were extended over the mucogingival margin. Care was also taken to ensure that the flap edges were positioned on the local bone as this is where the growth factors for marginal regeneration originate from. The mucoperiosteum/mucosal flap was prepared. To ensure blood supply to the flap, this was opened five

millimeters apical to the mucogingival margin. The degree of bone deficit was demonstrated visually using a thread loop (**Fig. 5**). A sufficiently large bone graft was harvested from the Corpus/Ramus mandibulae. This was preserved in physiological solution until the soft tissue at the donor site had been sutured (**Figs. 6 and 7**). Then we adapted the cortical bone block as precisely as possible to the host site. To give an esthetic overall outcome, attention was paid to the shaping of the juga alveolaris in the later implant region. The bone block was fixated with two osteosynthesis screws (**Fig. 8**). The remaining autologous bone material was ground and then used to fill the spaces between the block graft and the local bone (**Fig. 9**). Bio Oss® was added around the graft to protect against resorption.



**Fig. 10:** The X-ray control image shows the fixated bone block in the upper jaw and the donor site in the lower jaw.



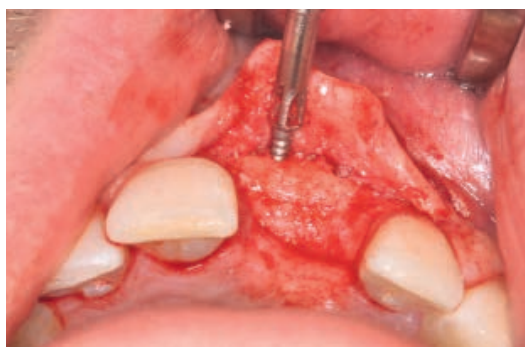
**Fig. 11:** Three months after surgery, one could detect frontal anatomical shaping of the jaw situation and sufficiently thick attached gingiva.



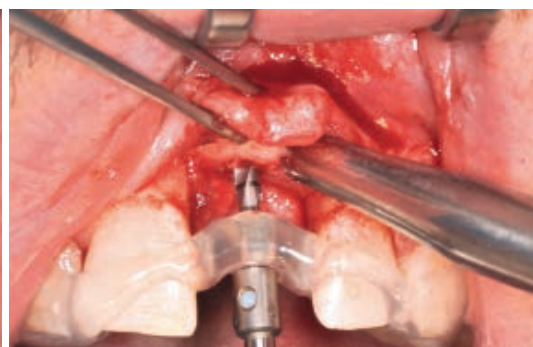
**Fig. 12:** The occlusal view shows the precisely reconstructed hard and soft tissue, ready for inserting the implant.



**Fig. 16:** The skeletonized implant template creates the largest possible space for the head of the angled handpiece for pilot drilling.



**Fig. 17:** For implantation, the jaw bone was exposed and the two osteosynthesis screws removed.



**Fig. 18:** The skeletonized implant template was inserted. Pilot drilling was performed without the head of the angled handpiece touching.

The bone augmentation was covered with a cut-to-size absorbing Bio-Gide® membrane (Geistlich). A periosteal slit allowed maximum mobilization of the flap which was shifted coronally. Using horizontal mattress sutures it was adapted tension-free to the wound edges and sutured tightly with individual button sutures. Precise wound edge adaptation is a precondition for interference-free wound healing [4,5,6]. The X-ray control image (**Fig. 10**) shows the fixated bone block in regio 21 and the donor site on the Corpus/Ramus mandibulae.

The flipper with the shortened plastic tooth was inserted as temporary restoration (**Fig. 11**). Only little pressure was to be exerted on the tissue during bone healing. This required understanding by the patient and modified (eating) behavior. After ten days the patient visited for a check-up and removal of the sutures. Three months after surgery, the natural alveolar bone profile was stable and with a sufficiently keratinized gingiva (**Fig. 12**). An impression

of this situation was taken and an implant template prepared. The dental technician fabricated a skeletonized template. A two-component sleeve for CT-planning was incorporated at the prosthetically correct implant position [7,8] and the plastic reduced as far as possible between the adjacent teeth. This reduction also enables placing of the template during the surgical procedure with mucoperiosteal flaps and provides maximum space for the angled handpiece during preparation of the implant bed (**Figs. 13 to 16**).

### Implantation

Implantation was performed four months after bone augmentation. Following local anesthesia, a vestibular flap was prepared, the jaw bone exposed and the two osteosynthesis screws removed (**Fig. 17**). Pilot drilling was performed with the aid of a drilling template through the two-component CAMLOG sleeve for CT planning (2.2 mm diameter) (**Fig. 18**). All other drilling steps to prepare the implant site for

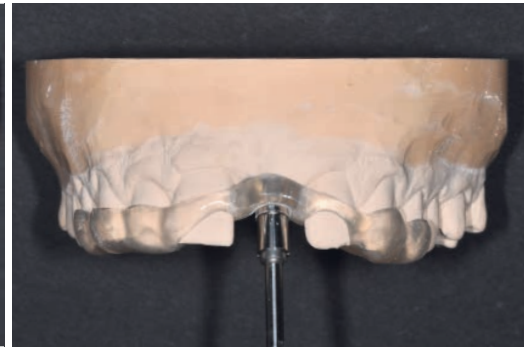
the CAMLOG® SCREW-LINE implant, length 13 mm and diameter 4.3 mm, were performed without a template. Placement of the implant was performed three-dimensionally following the criteria for the anatomic window according to Gomez and taking into account the biological conversion processes associated with implant restorations. In this patient case the implant shoulder rested one to two millimeters below the enamel cement margin of the adjacent teeth. The implant shoulder was placed approximately two millimeters palatal to the dental arch in oro/vestibular direction. Apical placement facilitates compensating between the anatomical emergence profile of the crown and the implant diameter. The mesio/distal distance between the outer edge of the implant to the adjacent tooth should be approximately two millimeters (**Figs. 19 and 20**). The implant was sealed with a cover screw, the soft tissue sutured and an X-ray taken for checking purposes (**Fig. 21**).



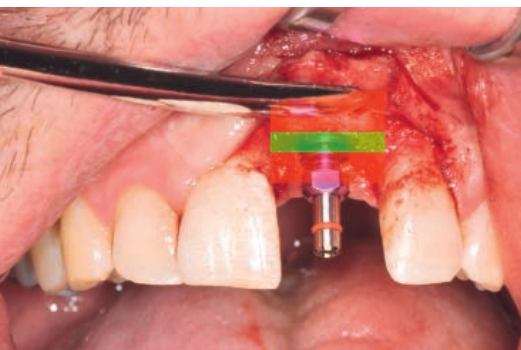
**Fig. 13:** The ten millimeter long two-component sleeve for CT-planning was incorporated in the prosthetically correct implant position.



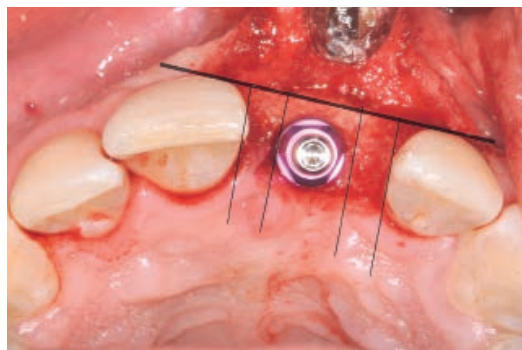
**Fig. 14:** To mark the implant position, the full length of the 2.2 mm  $\varnothing$  sleeve was utilized initially.



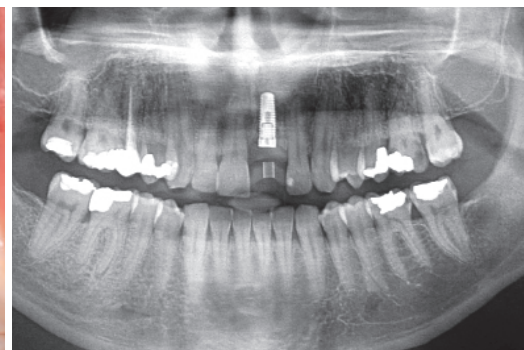
**Fig. 15:** After separating the sleeve, pilot drilling is deepened through the four millimeter high sleeve section.



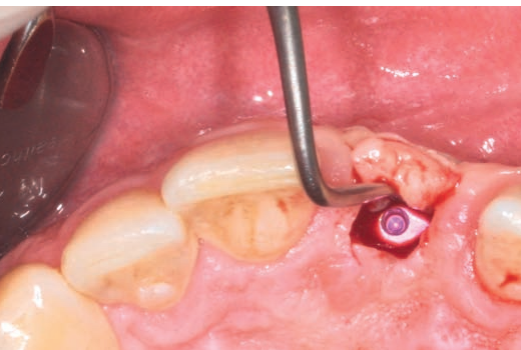
**Fig. 19:** The implant shoulder was placed two millimeters below the enamel cement margin of the adjacent teeth.



**Fig. 20:** Placement of the implant is correct according to the criteria of the esthetic window.



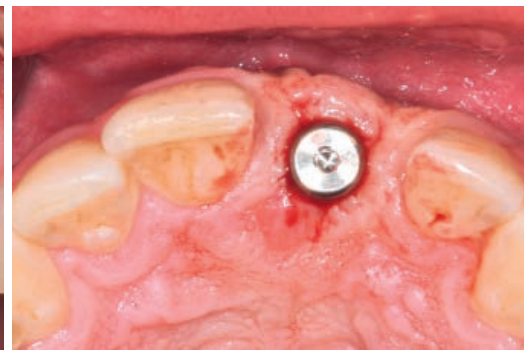
**Fig. 21:** Subcrestal placement of the implant and the adequate thickness of the gingiva allowed anatomical shaping of the emergence profile of the crown.



**Fig. 22:** Following de-epithelization of the mucosa, a roll flap was prepared by means of palatal incision.



**Fig. 23:** The flap was folded and pushed into the prepared tunnel using a special instrument.



**Fig. 24:** A 4 mm high cylindrical CAMLOG<sup>®</sup> healing cap was inserted and the soft tissue was sutured tight.

### Implant exposure with thickening of the soft tissue

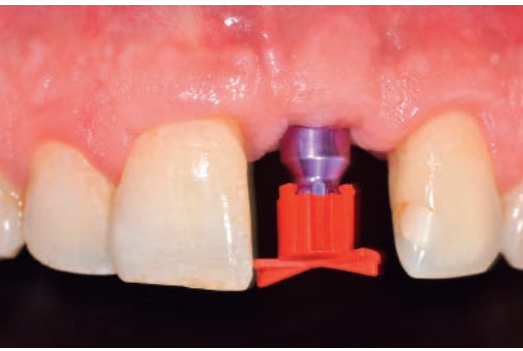
To ensure successful restoration with the implant, we paid particular attention to the soft tissue management when exposing the implant. To this purpose we employed the modified roll flap technique for thickening of the soft tissue (**Fig. 22**). Using a diamond drill, the epithelium layer over the implant was removed and a pedicle flap prepared vestibular following palatal

preparation which surrounds the de-epithelized tissue with cut-outs for the papillae (**Fig. 23**). The roll flaps were folded, pushed into the prepared tunnel, and after removing the cover screw a just four millimeter high healing cap was inserted into the implant (**Fig. 24**). We thickened the marginal soft tissue as a matter of principle as it could migrate in apical direction during remodeling. The peri-implant tissue restructures itself during insertion of the healing cap or the prosthetic restoration and the biological

scope develops anew [9]. For cost reasons we were unable to utilize the option of shaping the soft tissue using a temporary implant crown.

### The prosthetic restoration

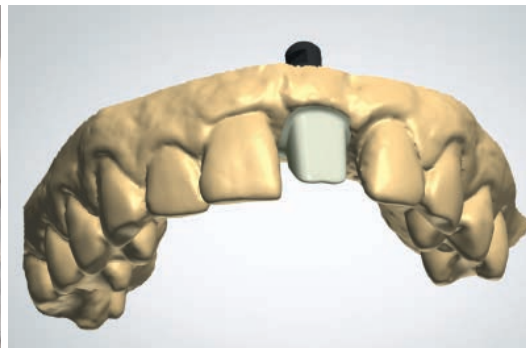
Four weeks after exposure, the tissue was stable and irritation-free and an impression of the situation was taken. We removed the healing cap and placed the impression post for the closed tray technique into the implant (**Fig. 25**).



**Fig. 25:** The impression was taken four weeks after implant exposure using an impression post for the closed tray technique.



**Fig. 26:** The model prior to digitalization with Scanbody.



**Fig. 27:** The abutment was created with the 3Shape® abutment designer.

The impression cap was attached to the post and an impression of the upper jaw taken with polyether. Once the models had been fabricated and articulated, the dental technician fabricated a customized zirconium oxide abutment, bonded to a CAMLOG® Titanium base CAD/CAM. The customized shaping of the crown emergence profile is the key for the natural appearance of a prosthetic reconstruction. A zirconium oxide cap was fabricated over the hybrid abutment, which was veneered with a glass ceramic (Figs. 26 to 28). On the day of insertion, the healing cap was removed, the implant interface cleaned, and the hybrid abutment inserted (Fig. 29). The surrounding soft tissue was displaced by the customized crown emergence profile into the shape of the planned emergence profile. After approximately three minutes the soft tissue had revascularized and was evenly colored red. The crown was mounted and the total appearance, shape of the tooth, color and position evaluated critically. The shaping of the papillae was not yet perfect (Fig. 30). Therefore, the positions of the contact points were checked. The vertical distance between the crestal bone and the approximal contact points to the adjacent dental crowns was four millimeters. Here we referred to the investigations on papillae formation by Tarnow for esthetic, long-term stable interdental papillae [10]. The intact surrounding support structure of the adjacent teeth help in the realization of a naturally shaped papilla. The zirconium crown was cemented with Durelon, the cement residue carefully removed, and the patient left the dental practice with a permanent esthetic prosthesis (Fig. 31). Twelve months after insertion, the patient presented in our practice for a follow-up. The images show a stable peri-implant hard and soft tissue situation (Fig. 32).

The migration of the gingiva has led to considerably more natural shaping of the interdental papillae, have a peek, and the gaps are virtually closed. The esthetic outcome of the three-dimensional implant insertion in combination with an intact approximal bone level of the adjacent teeth and adequate height and width of the peri-implant hard and soft tissue was again confirmed at the 24-month follow-up (Fig. 33).

## DISCUSSION

The prospective implant status demonstrated insufficient alveolar ridge tissue. Esthetic implant restoration was therefore only possible with bone and soft tissue augmentation. As a single-step surgical procedure did not allow for a prosthetically correct placement of the implant, a two-step procedure was indicated. Perfect red-white esthetics place great demands on the peri-implant hard and soft tissue.

## CONCLUSION

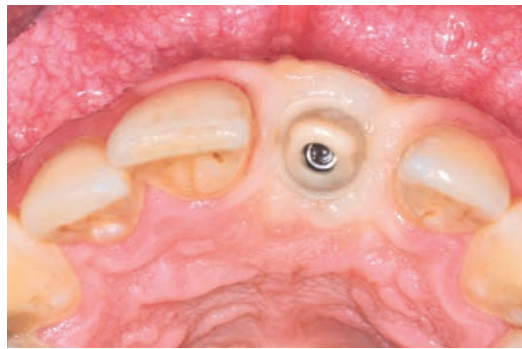
In the esthetically demanding region of anterior teeth, the therapy with implants represents both a valuable as well as challenging alternative for replacing lost teeth. The surgical treatment plan based on the patient's wishes, prosthetic analysis and a wax-up, should be prepared on the basis of existing hard and soft tissue. The individual treatment steps, as well as treatment times and costs should be discussed in depth with the patient.

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**Fig. 28:** The customized zirconium oxide abutment was bonded to the titanium bonding base and the zirconium crown was veneered individually.



**Fig. 29:** The individual hybrid abutment shapes the desired emergence profile. The gingiva is revascularized after approximately three minutes.



**Fig. 30:** Immediately after insertion, the crown appears to be somewhat too long in the cervical region and the papillae are not shaped optimally.



**Fig. 31:** The patient displayed an esthetic lip appearance. The position, color and shape of the restoration blend in harmoniously with the dental arch.



**Fig. 32:** At the follow-up after twelve months, good reconstruction of the oro-vestibular dimension is observed.



**Fig. 33:** At the follow-up after two years, the interdental papillae were fully shaped and the gaps closed.

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After studying dentistry in Vienna and Greifswald and subsequent doctorate, Dr. Spieckermann worked as scientific assistant at the Polyclinic for Dental Prosthetics at the University Clinic Carl Gustav Carus in Dresden. After two years of working in the field of public health in Sweden, he trained to become a specialist for oral surgery in the orthodontic practice Dr. Glase / Dr. Berger in Chemnitz as well as the Clinic for Oral and Maxillofacial Surgery of the Chemnitz Hospital. In 2010, he set up in dental practice with oral surgeon Ms. Sabine Hutfilz in the Joint Practice for Oral Surgery in Chemnitz. Dr. Jan Spieckermann's work focused on implantology and oral surgery, and he is a qualified post-doctorate specialist for prosthetics in the DGPRO.

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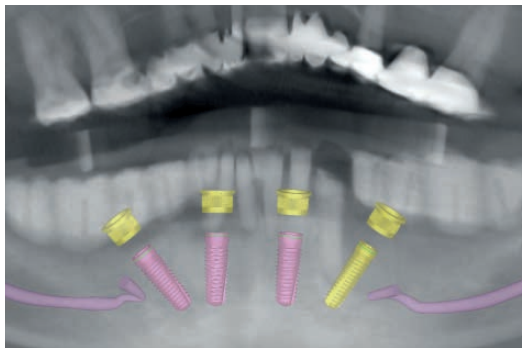
**Jörg M.  
Wildenhain**

Jörg M. Wildenhain founded the dental laboratory Kauzentrum in 2004 in Chemnitz, starting with three employees. In 2010 he specialized in CAD/CAM technology and has since been fabricating ceramic crowns and bridges as well as telescope crowns exclusively in zirconium. The "metal-free dental laboratory" is highly innovative and offers state-of-the-art technology at the highest level of precision in the field of implantology. Owing to the large demand for innovative, metal-free prosthetic restorations, the thriving company has now expanded to 14 employees.





**Fig. 1:** Following loss of the abutment teeth, the female patient presented with teeth that were not worth preserving and pronounced alveolar ridge atrophy.



**Fig. 2:** 3D planning displays the 30 degree angled distal implants to achieve an adequately large polygon for support.



**Fig. 3:** The directly screw-retained temporary restoration was digitally designed and fabricated from PMMA using the CAD/CAM method.



## RESTORATION OPTIONS FOR EDENTULOUS MANDIBLES USING VARIO SR PROSTHETIC COMPONENTS

MDT Sebastian Schuldes, MSc., Eisenach, Germany

In addition to the esthetic and functional aspects, good oral hygiene conditions for the restoration is an issue when planning rehabilitation of highly atrophied mandibles in elderly patients. Reduced manual dexterity which can come with age makes proper oral care of teeth, implants and prosthetics difficult. In the following article, the advantages and drawbacks of telescopic prosthetics, bar restorations and screw-retained bridges are compared and discussed.

For years now, implants have been a proven treatment therapy in geriatric prosthetics [1]. When planning a restoration, particular attention should be given to the needs and also the wishes of the patient. It is common practice to insert four implants using the Maló concept to save elderly patients from requiring multiple surgery and to minimize the risk of nerve damage in advanced atrophy of the jaw. The concept by Maló and Rangert utilizes the existing bone, stands for immediate restoration and reduces the number of chairside sessions. This method is based on extensive support on a broad prosthetic polygon. This support is achieved by inserting two implants in the

interforaminal region and two distally placed angled implants.

### First patient case:

In the first patient case (Surgery and Prosthetics Dr. Thomas Rothe, Eisenach), the hygienic options and easy handling were the overriding factors. As a result, the treatment team decided in favor of a telescopic restoration using the Paul Weigl concept [2]. A screw-retained immediate restoration resembling the "All-on-4 concept" was included in treatment therapy as wished by the 60-year old female patient.

### Findings and preoperative planning

After having lost her abutment teeth, the patient presented in the dental practice with a poor fitting telescopic prosthesis. The remaining teeth were not worth preserving and had to be extracted (**Fig. 1**). For better planning of the rehabilitation, a set-up was prepared on articulated situation models. A removable restoration on four implants meets the guidelines of the consensus conference on removable restorations in the lower jaw. After preparing a scanning template and DVT imaging, this was followed by digital implant planning to exactly determine

the position of the implants (**Fig. 2**). Two implants in regio 32 and 42 were planned in the interforaminal region. To provide balanced support of the prosthetics, the distal implants had to be inserted in regio 35 and 45. According to the physical guidelines, the connecting lines between the implants are to represent a sufficiently large polygon. Modeled after the Maló concept, the team, consisting of a dentist specialized in implantology and a dental technician, decided on two sufficiently long implants set at 30 degree angles in regio 35 and 45. For medical and financial reasons, the surgical expense of bone augmentation was not a suitable therapeutic option for the patient.

### Fabrication of the immediate restoration

Following digital planning, we prepared a precise drilling template with CAMLOG® Guide guide sleeves. To achieve exact placing of the 30 degree angled CAMLOG® Vario SR abutments, care should be exercised to align one groove of the inner configuration of the distal implants in dorsal direction. Orientation markings on the guide sleeves are therefore essential for insertion. A "model implantation" was performed to fabricate the screw-retained immediate restoration with the aid of the drilling template. The model was milled in the area of the implants taking axis alignment into account. The lab analogs were screwed onto the CAMLOG® Guide insertion posts. Then we fixated them with plastic through the sleeves whilst observing the orientation markings. We designed the immediate restoration digitally and had it fabricated from PMMA using the CAD/CAM method. The bridge was designed with an appropriate clearance fit to allow tension-free, intraoral bonding of the bridge on the titanium prosthetic caps (**Fig. 3**).

### Implantation and integration of the temporary immediate restoration

On the day of implantation, the dentist performing surgery extracted the remaining teeth. This was followed by fully guided insertion of the implants applying the protocol of the CAMLOG® Guide System. After removing the

insertion posts and the template, straight CAMLOG® Vario SR abutments were placed on the anterior implants and 30 degree angled abutments placed on the two distal implants. Titanium caps were screwed onto the abutments and polymerized intraorally into the temporary bridge. After checking occlusion and function, the bridge was removed, excess adhesive eliminated, polished and screwed back in. The patient left the dental practice on the day of implant surgery with "permanent teeth".

### Fabrication of the final telescope prosthesis

A tapered crown prosthesis was realized based on the double crown technique according to Weigl. As grip is generated by adhesion and not friction with this technique, patients can benefit from extremely easy handling [3].

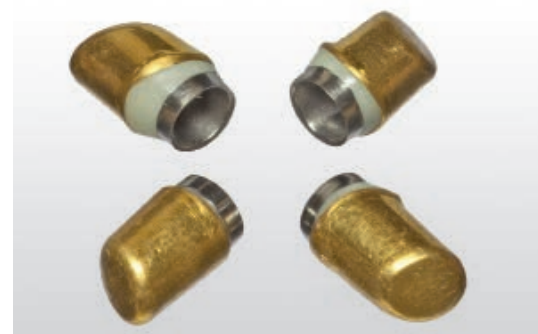
After three months the implants had osseointegrated in the lower jaw and impressions could be taken. The temporary restoration was unscrewed and an impression was taken at abutment level using Vario SR impression caps and an individual tray. Bite registration was performed using the electronic incisal pin register of the DIR system (**Fig. 4**). The Vario SR analogs were screwed on in the laboratory and the master models fabricated. Individually cast Vario SR sleeves served as bonding base for the zirconium dioxide telescopes which were fabricated using CAD/CAM technology. The telescopes were bonded to the bases (Panavia, Kuraray) and prepared for galvanizing the abutments. Studies have confirmed that the zirconium-galvanic double-crown technique [4] offers a high level of biocompatibility and consistently good bonding power – corrosion was not observed. The dental technician fabricated a model cast base via the galvanic crowns. A sufficiently large bonding gap should be provided between the abutments and the base so that the crowns can be bonded tension-free in the mouth (**Figs. 5 to 7**). A temporary prosthesis was fabricated as the telescopes remain in the mouth after bonding. This prosthesis fits exactly over the zirconium dioxide inner copings and can continue to be used as "travel dentures".



**Fig. 4:** Bite registration was performed using the electronic incisal pin register of the DIR system.



**Fig. 5:** Individually cast abutments serve as bonding base for the zirconium dioxide primary telescopes.



**Fig. 6:** The galvanic secondary crowns provide good grip through adhesion and thus easy handling.



**Fig. 7:** The model cast framework was fabricated with a sufficiently large bonding gap for tension-free bonding of the telescopes using the classical casting technique.



**Fig. 8:** Stable plastic transfer keys for precise alignment of the primary telescopes on the Vario SR abutments.



**Fig. 9:** The bonded construction was removed using a bite aid, lined with impression material and a pick-up impression taken.



**Fig. 10:** From basal, the telescope prosthesis shows the even distribution of the implant crowns and the reduced vestibular expansion of the prosthetic's base.



**Fig. 13:** Bar modelling was scanned into the CAD program using a double scan.



**Fig. 14:** The modified bar caps were screw-retained in the mouth with 15 Ncm with the aid of a plastic key.

The primary tapered crowns are screw-retained in the mouth. Stable plastic transfer keys were used for the precise alignment of these telescopes (**Fig. 8**). After the fixing screws had been tightened with 15 Ncm, the treating dentist sealed the screw access channels with plastic and mounted the galvanic caps. The tension-free fit of the model cast was checked and then the galvanic caps were bonded into the tertiary structure with AGC-Cem (Wieland) [5]. The bite situation was checked and fine-adjusted using a plastic bite aid.

The free-end saddles were lined (**Fig. 9**), the construction mounted and a pick-up impression taken with an individual tray. We fabricated a model with resin stumps in the laboratory and articulated it. Individual veneering was performed with a high performance polymer (visio.lign, Bredent); whereby the base of the prosthesis was designed polychromatic (**Fig. 10**). The temporary prosthesis was removed during a short chairside session and the final restoration inserted (**Figs. 11 a and 11 b**). The

removable restoration offers extremely easy handling. Cleaning the telescopes is simple to do and corresponds to the manual abilities of the patient.

#### Second patient case:

The 69-year old patient presented in the dental practice with an inadequate prosthesis (Surgery and Prosthetics Dr. Bernd Bartl, Bad Langensalza). After extensive consultation a joint decision was made in favor of implant therapy – initially in the lower jaw. A removable bar restoration made of high-strength zirconium dioxide was chosen. The material is distinguished through low plaque affinity. In terms of proper oral hygiene, the material properties of zirconium dioxide facilitate cleaning of the restoration. Primary splinting of the bar ensures uniform application of pressure on the implants. The secure anchoring of the restoration satisfied the patient's wish for high wear comfort.

#### The implantation and fabrication of the bar construction

Same as described for the previous case, implantation was template-guided and followed the Maló principle in terms of prosthetic orientation. The pre-implant preparatory work, such as, for example, transfer of the facial arch, functional analysis, wax-up and esthetic try-in was performed according to protocol. Surgical intervention was minimally invasive. Transgingival healing was achieved with screw-retained healing caps (**Fig. 12**). A temporary restoration with permanently soft lined prosthesis reduced the load on the implants during the healing phase. Jaw relation was maintained through contacts in the support regions; stabilization of the mandibular joint was ensured. As a result of transgingival healing, the soft tissue was able to regenerate optimally during this period. Four months after insertion, work commenced on the fabrication of the final prosthetic. During this time, the healing process was accompanied by several check-up



**Figs. 11 a and 11 b:** The polychromatic designed base of the prosthesis supports the overall harmony of the telescope prosthesis.



**Fig. 12:** Healing of the four inserted CAMLOG® implants was transgingival.



**Fig. 15:** ... and the zirconium dioxide bar bonded tension-free after checking with the Fit Checker™.



**Fig. 16:** A pick-up impression was taken to exactly represent the soft tissue situation.

appointments. Prior to impression taking, straight CAMLOG® Vario SR abutments were inserted in the anterior region and 30 degree angled abutments on the dorsal implants. Impression taking was performed at the abutment level with Vario SR impression caps for the closed tray technique. We fabricated a master model with removable gingival mask in the laboratory and articulated it. Vario SR bar caps were screwed in for construction of the bar and modified. To meet the requirements for a "Passive Fit" of the bar, this was to be bonded in the mouth. In this case the bar caps served as bonding bases. Taking the occlusal distance into account, the technician modelled the bar using a silicone index which indicates the positions of the teeth, and placed the Preci Vertex® slide attachment (CEKA) distally. Realization of the bar in zirconium dioxide was CAD/CAM supported. The model was digitalized using a double scan and the milling strategy calculated (**Fig. 13**). After the sintering process, the bar caps were bonded in the mouth. Transfer of the bar caps from the model situation to

the mouth was performed with stable plastic insertion keys. The fit of the bar was checked with Fit Checker™. Then the caps could be bonded into the zirconium dioxide bar (**Figs. 14 and 15**). The treating clinician sealed the screw access channels with wax and took a pick-up impression for an exact representation of the soft tissue situation (**Fig. 16**).

### Tertiary structure and completion of the bar restoration

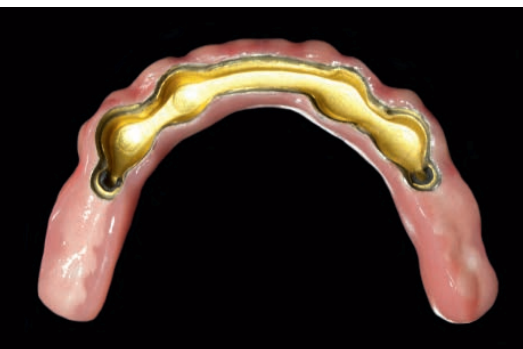
A homogeneous and smooth surface of the primary bar is a precondition for wear-free functioning of the secondary bar. The zirconium dioxide bar was finalized using a turbine, diamond-coated grinding wheels and water cooling (**Fig. 17**) and the bar matrix galvanized. **Figure 18** depicts the individual stages of the process chain for fabricating the bar and the secondary structure. The saliva film between the bar and the matrix, which is made of 99.9 percent fine gold, provides a high level of retention via the adhesion and cohesion forces as well as the two distal slide attachments.



**Fig. 17:** The zirconium dioxide bar was finalized and highly polished using a turbine under water cooling.



**Fig. 18:** Fabrication of the bar, starting from the left with modelling, the unfinished state of the bar, after finalization, the secondary galvanic structure and the tertiary structure.



**Fig. 19:** Basal view of the design of the restoration. With bonded galvanic bar and the distal Preci Vertex® slide attachment.



**Fig. 20:** The delicately designed bar prosthesis with polychromatic base.



**Fig. 23:** The immediate temporary restoration fabricated well before surgical intervention.



**Fig. 24:** The Vario SR prosthetic caps were polymerized intraorally into the immediate bridge.



**Fig. 25:** The screw access channels of the Vario SR sleeves were kept open with individual bonding aids for intraoral bonding of the BioHPP framework.

The tertiary structure – fabricated from a chromium-cobalt-molybdenum alloy using the classical casting technique – was bonded to the galvanic matrix and veneered with high performance polymers (visio.lign, Bredent) (**Fig. 19**). The chewing force damping properties of this modern material meet the functional demands of the masticatory system. The base of the bar prosthesis was given a delicate design (**Fig. 20**). The polychromatic design of the gingival section played a major role in the esthetic overall impression of the restoration (**Fig. 21**). The high retention level of the removable, bar-supported prosthesis gives the patient the feeling of a permanent denture.

### Third patient case:

A further option for the restoration with implants according to the Maló concept is the direct screw retention with a bridge. In this type of retention, the long-term prognosis also depends on the implant design and the precision of the implant-abutment connection

[6]. Backward planning is a precondition for the predictable prosthetic outcome of an occlusally screw-retained bridge [7]. In order to fabricate a functional and esthetic bridge it is important to know the emergence points of the screw access channels.

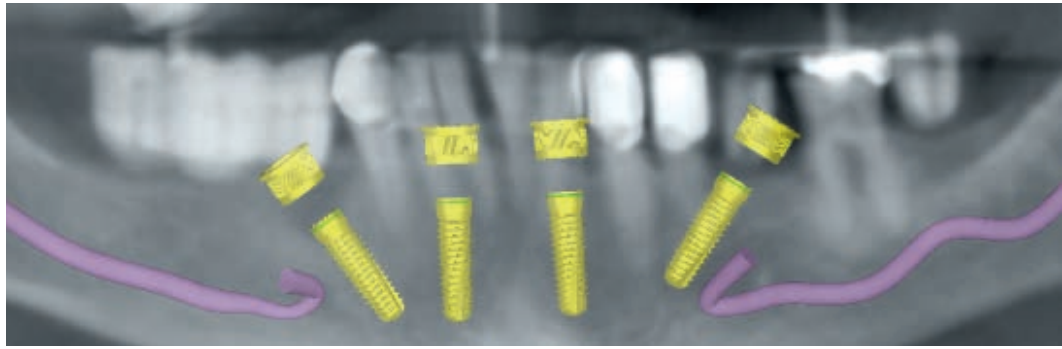
A 65-year old female patient with teeth not worth preserving in the lower jaw was referred to the dental practice (Surgery Dr. Ferenc Steidl, Sömmerda/Bad Frankenhausen; Prosthetics: Sophie Theuer, Werther). The treatment concept according to Maló was applied for implant-prosthetic restoration. Digital implant planning took place after preparing a set-up and DVT imaging (**Fig. 22**). After fabricating an implant drilling template with the CAMLOG® Guide guide sleeves, we prepared the model with CAMLOG® lab analogs. These were fitted with Vario SR abutments and screwed-on titanium sleeves. Based on the set-up, the temporary restoration was made from PMMA using the CAD/CAM process (**Fig. 23**).

### Surgical intervention with immediate restoration

Eight teeth were extracted on the day of insertion. The oral surgeon inserted the implants according to the CAMLOG® Guide protocol. After screwing in the Vario SR components, the soft tissue was sutured. Then the prefabricated temporary restoration was checked, modified slightly, and the Vario SR sleeves polymerized tension-free (**Fig. 24**). The interim prosthesis was removed and cleaned extra-orally. Here, the focus was placed on the design and thus the cleanability of the basal surfaces. The patient left the dental practice after surgery with a permanent temporary restoration.



**Fig. 21:** The inserted bar prosthesis during the final functional check.



**Fig. 22:** Digital planning gives the positioning of the angled distal implants with a safe distance to the nervus mentalis.



**Fig. 26:** Dual-curing composite is used to ensure secure bonding of the veneer shells to the framework material.



**Fig. 27:** The BioHPP framework was activated with vario.link (Bredent) and the veneer shells fixed with combo.lign (Bredent).



**Fig. 28:** For reasons of stability, the anterior lingual section of the bridge was made completely of PEEK material and only veneered labially.

### Fabrication of the screw-retained bridge

Prior to impression taking of the final restoration, the temporary restoration was again checked for occlusal and jaw joint-specific parameters. This was followed by impression taking at the abutment level with Vario SR posts for the closed tray technique. The set-up was extended distally, the section of veneer shells reduced and scanned. As the load on the implants increases with the extension of the free-end bridge, a length of 15 mm should not be exceeded – regardless of the implant length [8]. A BioHPP bridge was fabricated using the CAD/CAM process. BioHPP (Bredent) is a state-of-the-art high performance polymer based on PEEK. The elastic properties of this material resemble those of natural bone. This property allows torsional compensation in case of distortion of the mandibular bone segment, and thus effectively prevents tension which can occur with rigid splinting using conventional, inelastic framework materials such as gold, titanium, CoCr or

zirconium oxide. The modified Vario SR sleeves were screwed into the patient's mouth and bonded tension-free into the BioHPP framework (**Fig. 25**). The bridge was removed following a check of bite registration and completed in the laboratory. The BioHPP was activated (visio.link, Bredent) and the resin shells of the teeth mounted with a silicone matrix of tooth-colored polymer (combo.lign) (**Figs. 26 and 27**). The material dampens bite, provides color fidelity and is plaque-resistant and thus resembles natural teeth. The gingival section of the removable bridge was veneered in two colors by the dental technician and attention was paid to the provision of good hygienic oral care – especially with regard to the basal sections (**Figs. 28 and 29**). The treating dentist inserted the bridge in the dental practice and checked functionality and occlusion. The prosthetic screws were tightened finally with 15 Ncm and sealed with light-curing resin material (**Fig. 30**).



**Fig. 29:** The basal region of the conditionally removable bridge can be cleaned easily by the patient.



**Fig. 30:** The different shades of the artificial gingival section give a lively and esthetic appearance.

## DISCUSSION

Implant-supported restoration is a proven treatment option in elderly patients and offers them new quality of life. The outcome for removable dentures improves with the simplicity of design and the ease with which the abutment teeth can be cleaned. The telescope crown technique or bridge restoration in combination with galvanic abutments has shown itself to be a good means of prosthetic restoration on implants [9]. Handling of the removable restoration is easy for the patient as retention is provided through adhesive forces and not friction. This is ensured by the precision between the zirconium abutments and the galvanic secondary components in combination with intraoral bonding of the secondary components into the tertiary construction. A restoration with hybrid prostheses on four implants in edentulous lower jaws is often sufficient in elderly patients [10]. In addition to

financial considerations, the hygienic options are an important criterion for the success of rehabilitations. The screw-retained bridge restoration according to the Maló concept has proven itself for some years now. New materials such as shock-absorbing plastics support the longevity of the restorations. The digital workflows offer numerous advantages, ranging from admission via 3D planning to digital design of the restoration and CAD/CAM manufacturing technology. Limiting anatomical structures can be recognized quite easily.

My special thanks to Dr. Bernd Bartl, Bad Langensalza; Dr. Ferenc Steidl, Sömmerda/Bad Frankenhausen; Thomas Rothe, Eisenach and Sophie Theuer, Werther for the excellent cooperation and support in documenting the cases.

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## AUTHOR



**MDT Sebastian Schuldes, MSc., Eisenach**

MDT Sebastian Schuldes, born in 1974, completed his training as dental technician from 1991 to 1995, and qualified as master dental technician in 1998/1999. Since 1999 he is managing director of Dentallabor-Schuldes GmbH. From 1999 to 2000 he studied business administration; followed from 2006 to 2008 with a Master of Science (MSc.) – Dental Technology at the Danube University Krems/Bonn. In 2007, Schuldes founded S-implantat – a planning service provider in the field of 3D-navigated implant planning; and in 2011 the milling center zaxocad Dental Solutions.

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## EXTENSION OF THE CAD/CAM PRODUCT RANGE FOR THE CAMLOG® IMPLANT SYSTEM

The new CAMLOG® scan posts were developed for intraoral digital impression taking in combination with Sirona Scanbodies. The scan posts are connecting elements for intraoral and extraoral use of CAMLOG® implants and lab analogs with the Scanbodies available from Sirona. The combination of the Sirona Scanbody and the CAMLOG® scan post allows digital recording of the implant position in relation to the remaining teeth and the soft tissue. To cater for individual soft tissue situations, the new CAMLOG® scan posts offer approximately 5.5 mm intermediate clearance. The scan posts are available since June 2014. A scan post is only screwed to an implant or lab analog with the corresponding

abutment screw for the purpose of optical image capture. The Scanbody is attached after screwing in the post. The precise positioning of the Scanbodies is both tactile via the nose on the base, as well as visually via a marking on the post. The scan posts, including the abutment screws, can be sterilized and are available for all implant diameters of the CAMLOG® implant system.

With the CAMLOG® Titanium bases CAD/CAM in combination with the Sirona Scanbodies, digital impressions and computer-guided fabrication of individual and high precision zirconium oxide ceramic abutments continue to be possible for CAMLOG® implants. Owing

to the low gingival height of the titanium bases (0.3 mm) and an overall design height of five millimeters, a high gingiva may lead to overlap of the scan pyramid. With the aid of the new scan posts (intermediate clearance 5.5 mm) exact digital recording of the three-sided pyramid is possible. The data for the CAMLOG® scan posts are included as of Sirona Software 4.2.

The Scanbodies are available from the distribution partners of Sirona Dental Systems GmbH. They are available separately in corresponding connecting sizes for the current intraoral Sirona camera systems, CEREC Omnicam or CEREC Bluecam Scan.

### New products:

- ❶ K2620.3306 CAMLOG® Scan post for Sirona Scanbody Ø 3.3 mm
- ❷ K2620.3806 CAMLOG® Scan post for Sirona Scanbody Ø 3.8 mm
- ❸ K2620.4306 CAMLOG® Scan post for Sirona Scanbody Ø 4.3 mm
- ❹ K2620.5006 CAMLOG® Scan post for Sirona Scanbody Ø 5.0 mm
- ❺ K2620.6006 CAMLOG® Scan post for Sirona Scanbody Ø 6.0 mm



CAMLOG® Scan posts for CEREC Omnicam or CEREC Bluecam Scan





**Peter Rudolf Braun**, lic. oec. HSG (MBA), has over 20 year's experience in various fields of the healthcare industry. After graduating in management sciences at the University St. Gallen, Switzerland, he spent ten years working for the two multinationals Nestlé and CIBA Vision/Novartis in ophthalmology. Then he founded a start-up company specialized on the development and manufacturing of surgical medical devices – also for the field of dentistry. He was managing director of Weleda for five years, a Swiss company in the field of natural cosmetics and complementary medicine. Several years as strategic consultant and interim managing director for restructuring round off his broad management experience. Peter Braun worked in the USA, Spain and The Netherlands for prolonged periods. He is married and lives in Basel with his family.

## PETER BRAUN – INTRODUCING THE NEW CEO OF THE CAMLOG GROUP

Peter Rudolf Braun joined CAMLOG Biotechnologies AG in Basel on June 1, 2014 as Chief Executive Officer. He takes on the operative management of interim CEO Dr. René Willi, whose competence as member and delegate of the board of directors of the CAMLOG Group continues to remain available. The logo editorial team spoke to Peter Braun about his career to date and asked him about the pursuit of his goals and strategies with CAMLOG.

### **Mr. Braun, how do you feel after your first few days at CAMLOG?**

The first few days were very exciting and I learned a lot. All in all, I believe I am the right man in the right place.

### **What were the reasons for choosing CAMLOG as your new employer?**

During my career I gained considerable experience in the fields of healthcare and medical engineering. I am convinced that dentistry, and in particular oral implantology, offer great potential worldwide. Experience from my previous positions stands me in good stead for my new tasks as CEO of CAMLOG – this is where I can employ my strengths to the best advantage.

I was also fascinated by having worldwide responsibility at CAMLOG, one of my main objectives is the continued globalization and propagation of the CAMLOG brand. Due to the cooperation with Henry Schein, CAMLOG benefits from an excellent worldwide network and is well equipped to take a step forward.

And finally, I appreciate the size of CAMLOG – in a medium-sized company like this one still knows the people and decision paths are short.

### **How do you approach your tasks?**

As a first step I hold numerous discussions with employees at all levels. To me, listening is an important management instrument! Experiencing people during discussions and hearing their points of view is the basis for forming an opinion and the best prerequisite for jointly developing creative ideas and strategies. I would like employees to be proud of their company and their contribution to success; everyone can be a driver and make his/her contribution.

In a second step I talk to as many of our country managers and distributors as well as key customers and key opinion leaders as possible to gain a comprehensive internal and external impression of the company and then develop this further in a targeted manner on the basis of the knowledge gained.

### **Where do you think that CAMLOG can make even better use of its potential?**

CAMLOG needs to be more international in its customer orientation. The world, and in particular the market for oral implantology, is changing. In part, other countries are governed by different market conditions and priorities. We need to respond better to the needs of the market worldwide, come up with new ideas and remain flexible.

### **What did you learn when you embarked on your start-up company?**

My start-up company started off with five employees and expanded to 30 after a few years. I have learned that as an entrepreneur you cannot do everything alone. Often, an entrepreneur is only aware of 80 percent of the facts but needs to take decisions fast. This requires a certain risk behavior while at the same time making it abundantly clear which risks not to take under any circumstances.



### **How many countries have you visited during the course of your life?**

I have been professionally active in five continents and have lived in three continents.

### **Which country surprised you the most?**

Over the years I have visited China several times, both professionally and privately. Their somewhat different culture – at least for us Europeans – and their local customs are impressive. I was also fascinated by the contrasts in India. I am fascinated by countries and cultures and love operating in a multi-cultural environment.

### **How do you travel?**

I prefer getting to know a country on business trips as this gives the most natural access to a country and its people. You can see how they earn their living, the difficulties they have to master and how they handle them. And even when I travel privately, I try to avoid the tourist trails. On my trips I often meet up with former business colleagues. I very much appreciate having contacts and acquaintances in the various corners of the world. Package tours or all-inclusive hotels are not really my cup of tea.

### **Which sports do you enjoy?**

Time permitting, I enjoy sailing the high seas. At the weekends I often jog or ride my mountain bike through the beautiful hills surrounding Basel. Being Swiss and having grown up near skiing regions, I also enjoy alpine skiing and cross-country skiing. I stay fit by jogging or Nordic walking daily, best early mornings – that clears your head and gets you ready for a long day.

### **What has been the biggest achievement to date in your life?**

I have had the good fortune of working on numerous exciting projects professionally with interesting people from various cultures, and despite a large work load I have managed to start a family and raise my children. Despite all the compromises necessary, I was able to keep a good balance between family and career. My family and my circle of friends help me to relax and not take everything too seriously.

### **What was your very first job?**

*(laughs)* I started off early in sales! My first job was selling ice cream at the CSI St. Gallen, an international riding tournament in my home town. And I sold cigarettes at the OLMA, an agricultural trade fair. I enjoyed myself

immensely guessing the cigarette brands of unknown persons. I had a success rate of over 50 percent.

### **Are you on Facebook?**

No. With the exception of a portrait on LinkedIn which I use for business reasons, I am deliberately not a great user of Social Media. I do not have the time to use them. My children are Facebook fans, but being friends with your father on Facebook? No way!

### **So you are not on Twitter either?**

No.

### **What would be your first Tweet?**

"I am a fan!"

Thank you very much for this informative interview. We wish you a good start at CAMLOG and every success for the future.



## NEW DISTRIBUTOR FOR CAMLOG IN FINLAND

Since January 2014, Implantona Oy is our exclusive distributor of CAMLOG products in Finland. The small, but energetic company has its head office in Helsinki. The company has four employees: Susanna Rodriguez, Mari Jussila, Sari Susi and Olli Kuussaari – three of them travelling this large country visiting customers. With a population of 5.4 million on an area only marginally smaller than Germany, Finland is one of the least densely populated countries in Europe. The population is centered around the capital in the south of the country, Helsinki.

Olli Kuussaari, the company's CEO, is a dynamic entrepreneur and has been in the dental business for many, many years. Since founding his company in 1998, he has gained valuable experience in the dental field and is successful in marketing and selling implants, biomaterials, surgical instruments and suture material.

The market penetration of implants is very low in Finland. Nonetheless, some

1.4 million inhabitants are missing one or more teeth. This implies a very large potential for treatment with dental implants – but with only a small number of clinicians active in implantology. As dental implantology is only touched marginally during foundation studies at Finland's universities, dentists only come into contact with implants during specialization. This is why dental specialist associations and implant manufacturers make an important contribution to the training and further education of dentists active in implantology.

For example, Implantona Oy offers a four-day coaching program which, next to clinical treatment therapies, also covers practice management, patient information and marketing in a dental practice. Olli Kuussaari and his team successfully conduct events with international speakers several times per year, for example, the Helsinki Symposium in September 2014 with Prof. Dr. Mariano Sanz (Spain) and Prof. Dr. Carlo Maiorana (Italy).

In 2014, Implantona Oy had a promising start with the distribution of CAMLOG products. They have set high goals for the future and first results show them to be well on their way. We wish our partner in Finland continued success!

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## IMPULSES FOR SUSTAINABLE SUCCESS

With this edition of logo we are starting a new series of articles which specifically address management and marketing for dental practices and the laboratory. We will be looking in-depth at topics from the fields of practice development, practice marketing and patient communication. With this new series we would like to give you impulses for sustainable success.

Why are we doing this? Because we are convinced that the success of dental practices and laboratories today no longer is exclusively dependent on the art of medicine or technology, but on a number of other factors as well. And strategic practice management is one of these special factors.

### Our approach

In order to successfully manage a dental practice or a laboratory long-term, this requires not only state-of-the-art dentistry, but also strategic business management, good practice

and laboratory management as well as professional communications. Modern practice marketing today is not focusing on dentist-patient communication, but rather on the dialog between dentist, practice personnel and patient as well as the communication to cooperating dentists and the laboratory. Internal practice communication (communication to employees) is often a neglected success factor and it pays to look at this more closely. With this series of articles we would like to highlight the relevance of these topics for success-oriented practices and laboratories.

### Management vs. Marketing Marketing vs. Advertising

Every dental practice has an image, whether intended or not. Conscious image-building measures offer a large potential for increasing practice awareness and controlled patient lead generation and loyalty. The main challenge is to continuously develop your

image further to ensure sustainable and thus long-term business success. Practice marketing is often seen as a synonym for practice advertising, but it is much more than that: practice marketing describes a strategy which aligns all the activities of a practice to the needs of the market. Therefore, practice marketing is a decisive management function. In contrast, advertising describes the dissemination of information which is to generate an impulse with existing or potential patients, to trigger an action or suggest or create a feeling.

Our articles will focus on professional practice development. Away from advertising – to strategic practice marketing!



## SOFT TISSUE MANAGEMENT – COURSE FOR ADVANCED AND EXPERIENCED IMPLANTOLOGISTS

A special course highlight is offered by the dissection course “Soft tissue management” in dental implantology. Soft tissue management is decisive for functional, clinically and esthetically optimal outcomes. Dr. S. Marcus Beschnidt and Prof. Dr. Dr. Rudolf Seemann, two experienced experts, teach the theoretical basics and offer the opportunity of training the presented techniques on human specimens. Friday morning initially covers clinical information and theory. Friday afternoon and the whole of the second day are dedicated to implementing what has been learned. Every participant has the opportunity of applying the various techniques extensively. This is supported by excellent equipment, for example, a Zeiss stereo microscope for visualization.

The course will be held in English. On Friday evening there will be a dinner with the speakers. To ensure the quality of the course, the number of participants is limited. Further information on the event is available from Nadine Kutta, at Tel. +41 61565-4152 or by e-mail: [nadine.kutta@camlog.com](mailto:nadine.kutta@camlog.com)



**Date: 26./27. September 2014**

**Venue:**

Anatomical Institute of the  
Medical University Vienna  
Währingerstrasse 13  
1090 Vienna  
Austria

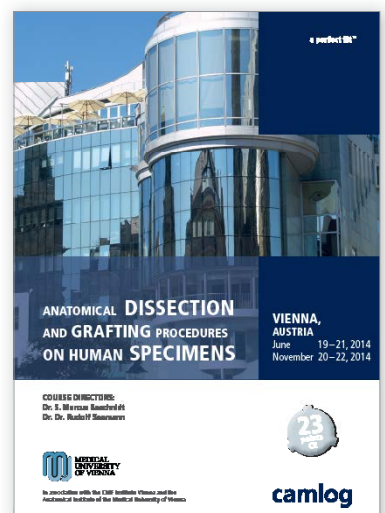


## THREE-DAY COURSE “ANATOMICAL DISSECTION AND BONE GRAFTING PROCEDURES ON HUMAN SPECIMENS” IN VIENNA

From November 20-22, 2014 the Medical University Vienna offers a three-day hands-on course for dental surgeons to expand and deepen their knowledge and experience in the field of bone grafting.

The theoretical part of the course conveys extensive knowledge about the anatomy of the skull and the oral cavity. Instructed by the speakers Dr. S. Marcus Beschnidt and Prof. Dr. Dr. Rudolf Seemann, the participants will experience intensive application and training of various techniques in the dissection laboratory on the afternoon of day one and the second day of the course. The third day of the course is dedicated to the treatment of possible complications relating to surgery.

The course will be held in English. The course will be credited with 23 further education points. The number of participants is limited. Further information on the event is available from Nadine Kutta, at Tel. +41 61565-4152 or by e-mail: [nadine.kutta@camlog.com](mailto:nadine.kutta@camlog.com)



**Date: 20./22. November 2014**

**Venue:**

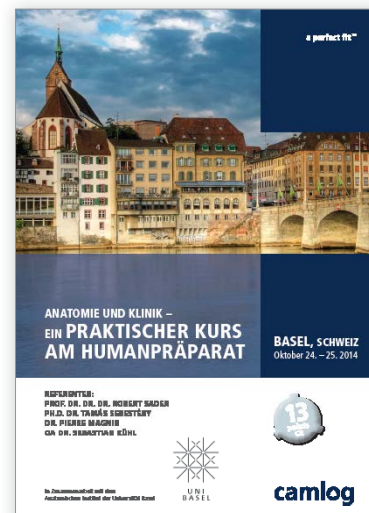
Anatomical Institute of the  
Medical University Vienna  
Währingerstrasse 13  
1090 Vienna  
Austria

## PRACTICAL COURSE WITH HUMAN SPECIMENS

On October 24-25, 2014 a "Practical course with human specimens" will be held in the Anatomical Institute of the University Basel. Dentists active in implantology have the opportunity of refreshing their knowledge of anatomy and to train various surgical techniques.

The knowledge of oro-facial anatomy and its particularities still remains the basis for safely planning and implementing implant surgery. This basic knowledge is refreshed and deepened in the theoretical part of the course. It is an important part for the practical workshops. Different augmentation techniques for hard and soft tissue and their application in dental practice are presented and discussed. Instructed by the speakers Prof. Dr. Dr. Robert Sader, PhD Dr. Tamás Sebestény, Dr. Pierre Magnin, MSc. and Dr. Sebastian Kühn, the participants will train surgical techniques, as for example the preparation of the nervus mentalis and the lingual artery as well as sinus floor elevation according to Summers on provided human specimens fixated according to Prof. Thiel.

The course is ideally suited for dentists active in implantology who wish to further their knowledge and would like to specifically treat possible complications relating to oral surgical interventions. The course will be held in German and is credited with 13 education points. To ensure the quality of the course, the number of participants is limited. Further information on the event is available from Nadine Kutta, at Tel. +41 61565-4152 or by e-mail: [nadine.kutta@camlog.com](mailto:nadine.kutta@camlog.com)



**Date: 24./25. October 2014**

**Venue:**

University Basel Anatomical Institute  
Pestalozzistraße 20  
4051 Basel

