



TECNOimport

DENTAL

Esthetic Casebook

Esthetics with the Straumann® Dental Implant System



Urs C. Belser

D.M.D., Prof. Dr. med. dent

Over the past 15 years, implant dentistry has progressed faster than many other treatment disciplines. Whereas osseointegration was the primary goal a decade ago, it is nowadays taken for granted and implants are expected to remain functional for more than 20 years. As a result patients are coming to expect implant-borne restorations to offer similar results as restorations on natural teeth with regard to both function and esthetics, especially in a visible region of the oral cavity.

The pressure is now on clinicians to achieve results that are virtually indistinguishable from natural teeth over the long term. Supported by new academic curricula, and consensus statements from the practising dental world, we believe that in many instances we are coming ever closer to creating the „perfect“ illusion, by increasingly implementing biomimetic principles derived from growing understanding of the key parameters of the natural dentition when it comes to specific anatomical features and optical properties.

Predictable optimum results in the anterior region can only be achieved through experience, planning and a team approach that binds the patient, surgeon, clinician and dental technician together.

The outstanding results in this overview of esthetic cases from eight countries around the world demonstrate the great progress that has been made and what can be achieved by an experienced team supported by well designed products.



U. Belser

CASE 1: Upper right central incisor



Paolo CASENTINI

DDS, Milan, Italy

Dental technician:

C&P Roberto Colli

Carlo Pedrinazzi

Milan-Segrate, Italy

CASE OVERVIEW

A young male, 34 years old, with good general health, nonsmoker, was referred from his general dentist due to a fracture of tooth 11 (FDI). The patient reported many previous treatments on the same tooth and asked to avoid, if possible, a temporary removable partial denture or fixed partial denture involving the adjacent teeth.

Clinical examination revealed a complete horizontal crown fracture of tooth 11, extending deep subgingivally. Periodontal tissues of the adjacent teeth were healthy and no pathological probing depths were found. Periodontal morphotype was classified as thin and scalloped. After clinical and Radiographic examination tooth 11 was considered non-treatable and immediate implant placement was planned.

CASE 1: Upper right central incisor



Figure 01

Right central incisor with horizontal fracture.

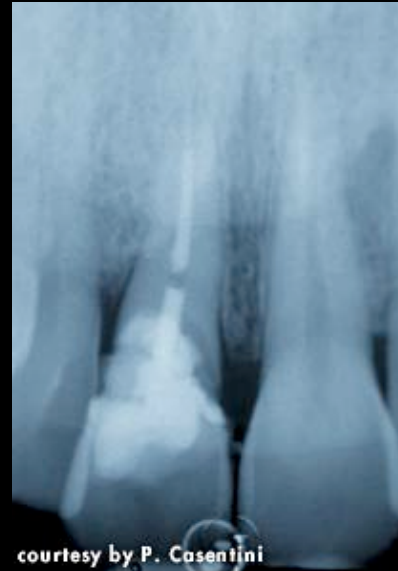


Figure 02

Radiographic examination: there is absence of infection and bone height is substantially maintained.

CASE 1: Upper right central incisor



Figure 03

The implant site is prepared utilizing a surgical stent.



Figure 04

Implant has been inserted: implant shoulder is positioned at crestal level and 2.5 mm apical to the gingival margin.

CASE 1: Upper right central incisor



Figure 05

Soft tissue healing 72 hours after surgery.

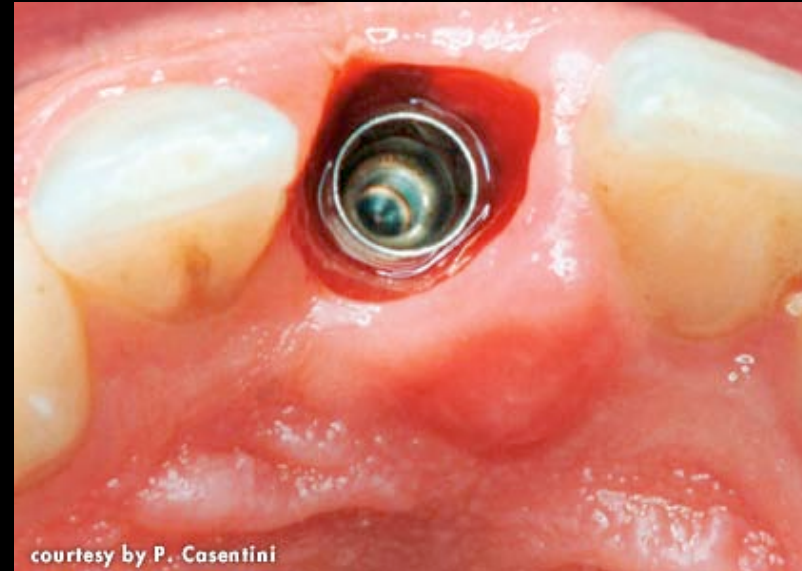


Figure 06

Soft tissue healing after removing the healing cap.

CASE 1: Upper right central incisor



Figure 07

The temporary crown is screwed onto the implant: occlusion is checked with the aim of avoiding any functional contact in occlusion and protrusion.



Figure 08

Soft tissue healing after 12 weeks.

CASE 1: Upper right central incisor

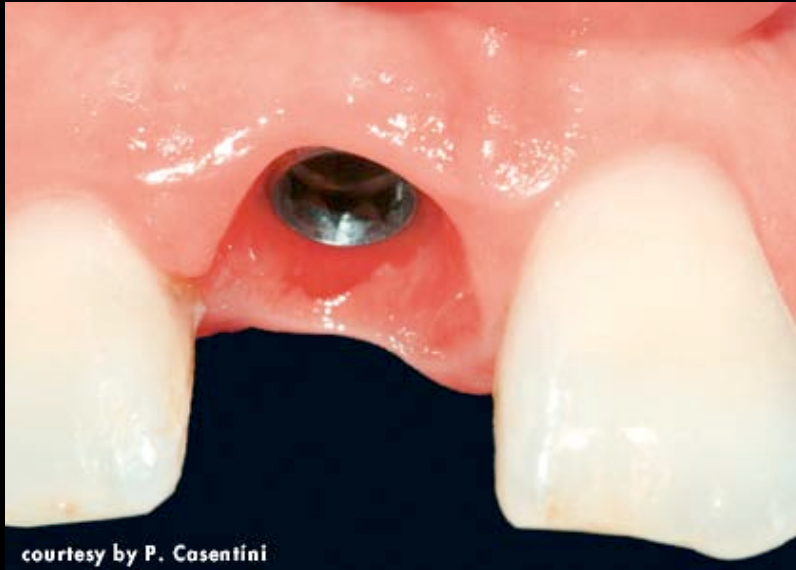


Figure 09

After temporary crown removal, soft tissue morphology is adequate and the papillae have been maintained.



Figure 10

The RN synOcta® abutment is torqued into place with 35 Ncm.

CASE 1: Upper right central incisor



Figure 11

The metal-free In-Ceram crown from different angles before insertion.



Figure 12

The metal-free In-Ceram crown inserted in the oral cavity.

CASE 1: Upper right central incisor



Figure 13

The emergence profile of the definitive crown.



Figure 14

Final X-ray control after definitive crown insertion.

CASE 1: Upper right central incisor



Figure 15

X-ray follow-up at 18 months after loading.



Figure 16

The 18 months follow-up shows stability of the soft tissue morphology.

CASE 2: Upper left central incisor



Dr. Stephen T. CHEN

BDS, MDSc, FRACDS
Melbourne, Australia



Dr. A. J. G. DICKINSON

BDS, MSD, FRACDS
Melbourne, Australia

Dental technician: John Lucas
(Advanced Dental Technologies)
Melbourne, Australia

CASE OVERVIEW

This case illustrates a 5-year follow up of an upper central incisor replaced with an implant-supported crown. The patient was a 45-year old woman who presented in June 1999 with a loose crown on the upper left central incisor (tooth 21, FDI). The tooth had previously been endodontically treated (including apicectomy), and restored with a post-retained porcelain fused-to-metal (PFM) crown approximately ten years earlier. The crown was mobile and displaced coronally. The clinical signs were consistent with a diagnosis of a vertical fracture of the root on the mid-labial aspect. Radiographic examination confirmed the presence of a radiolucent area around the root apex of the 21. There was adequate bone volume apical to the root socket. Due to the minimally restored state of the adjacent teeth and the soft tissue display on smiling, an implant-based restoration was recommended.

CASE 2: Upper left central incisor



Figure 01

Appearance of the upper left central incisor at initial presentation in June 1999. Note that the crown was displaced coronally and the gingiva was inflamed. The proximal restorations of the adjacent teeth had discoloured.

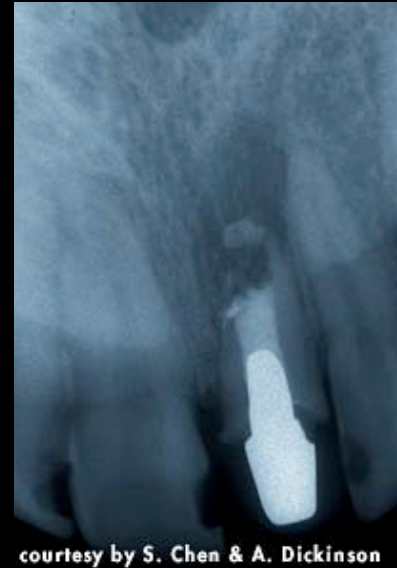


Figure 02

A radiograph of the 21 showed the presence of a periapical area around a shortened root (previous apicectomy) undergoing external root resorption. There was sufficient bone volume apical to the socket to consider immediate implant placement.

CASE 2: Upper left central incisor



Figure 03

Implant surgery was completed in June 1999. Tooth 21 was atraumatically extracted without raising a flap, thus keeping the soft tissue cuff and the alveolar bone intact.

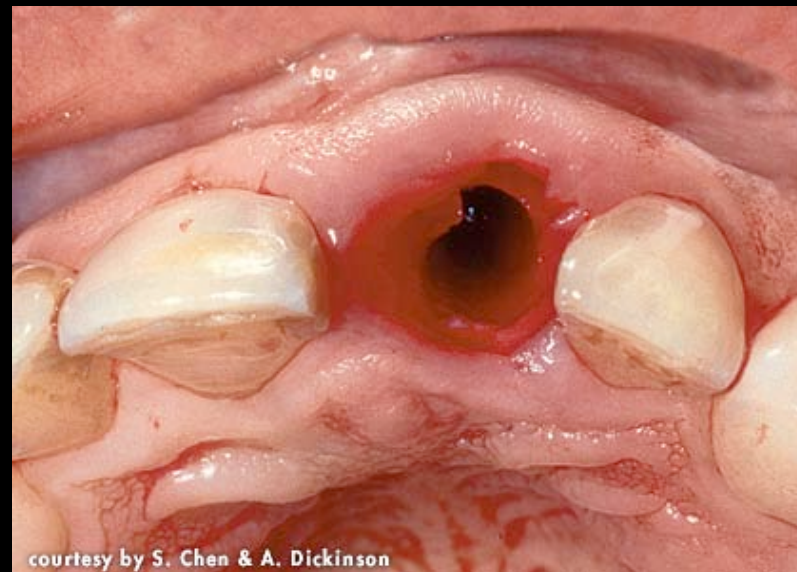


Figure 04

Inspection of the socket showed that damage to the labial plate was minimal. A decision was therefore made to place the implant without raising a flap. The socket was prepared in accordance with the surgical protocol of the Straumann® Dental Implant System. The osteotomy was directed palatally to ensure an optimal axial orientation of the implant. The coronal palatal wall of the socket was prepared with a profile drill to accommodate the flared collar of the implant.

CASE 2: Upper left central incisor

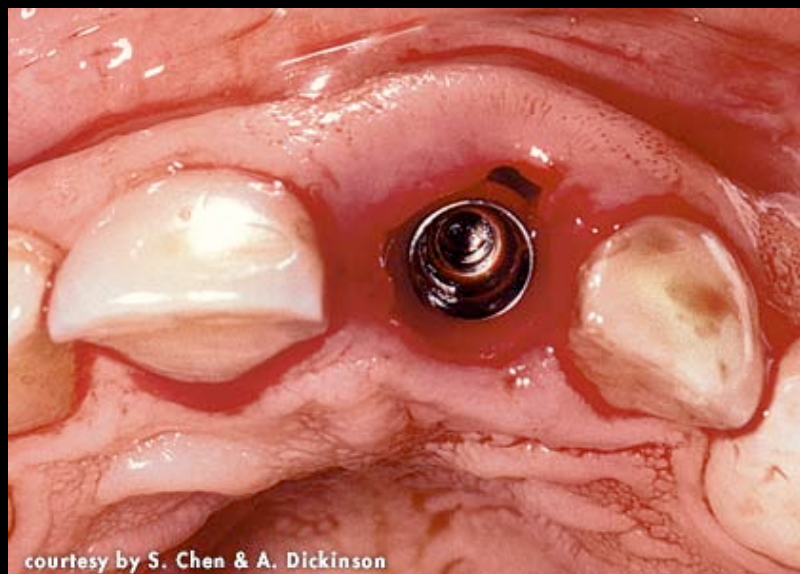


Figure 05

A Straumann® Standard Plus Implant, Ø 4.1 mm RN (SLA® Ø 10.0 mm), was selected and installed. The collar of the implant was submerged 2.0 to 3.0 mm from the mid-labial gingival margin. At this time, the horizontal defect dimension between the implant collar and the labial cortical bone was determined to be 1.0 to 2.0 mm in width. Thus, no bone augmentation procedures were required.



Figure 06

A 2.0 mm extended healing cap was attached to the implant to allow semi-submerged healing. Sutures were not used. The partial denture was adjusted to relieve the implant site, and delivered to the patient.

CASE 2: Upper left central incisor



Figure 07

Systemic antibiotics were prescribed for 7 days postoperatively. In addition, the patient was asked to rinse twice daily with 0.2 % chlorhexidine solution for two weeks. Brushing of the implant site was instituted after two weeks of healing. This image illustrates the clinical conditions after 3 months of uneventful healing.



Figure 08

A periapical radiograph of the implant obtained after 3 months of healing confirmed an ideal bone response. The implant was clinically integrated at this time.

CASE 2: Upper left central incisor



Figure 09

Restorative treatment commenced in October 1999. A screw-retained custom fabricated composite resin provisional crown was used on top of an Octa abutment to prepare the soft tissue cuff to mimic the contour of the adjacent natural tooth. The illustration shows the provisional crown in position.



Figure 10

Once satisfactory and stable soft tissue contours had been established, a custom porcelain fused to metal mesostructure was screw-retained into the Octa abutment. A PFM crown was then cemented to the ceramic mesostructure. The illustration shows the final implant restoration, together with the adjacent teeth restored with porcelain veneers in February 2000.

CASE 2: Upper left central incisor



Figure 11

5-year follow-up

This illustrates the clinical appearance of the implant restoration and adjacent teeth in May 2004, five years following commencement of treatment. Note the stable soft tissue conditions and maintenance of a good esthetic result.



Figure 12

5-year follow-up

A radiograph obtained in May 2004 demonstrates ideal bone conditions associated with the implant.

CASE 2: Upper left central incisor



Figure 13

5-year follow-up

The appearance of the patient's smile and anterior tooth esthetics is illustrated (May 2004).

CASE 3: Upper right central incisor



Soongryong JUNG

DDS, PhD

Korea Esthetic Dental Implant Institut
Gwangju, South Korea

Dental technician: Seong, Wongun

CASE OVERVIEW

A 19-year-old male patient was referred to the clinic for implant placement in area 11 (FDI). His right upper central incisor was removed due to dental trauma 3 months prior to treatment.

Clinical and radiographic examination made clear that an alveolar ridge augmentation was inevitable in order to achieve an optimal esthetic result. An autogenous bone graft was done from the lateral mandibular ramus. After 4 months, a Straumann® Standard Plus Implant, Ø 4.1 mm RN (SLA® 10.0 mm), was placed in the correct three-dimensional position.

After 8 weeks of implant placement, the final crown was inserted. The 1-year radiograph demonstrated an ideal bone crest level around the implant. The 1-year clinical view also showed good harmonious results.

CASE 3: Upper right central incisor



Figure 01

Incisal view on area 11: severe loss of oro-labial width of the alveolar bone and shrinking of the soft tissue.



Figure 02

Labial view on area 11: reduced keratinized tissue due to shrinkage of soft tissue. Ridge augmentation is required before implant placement.

CASE 3: Upper right central incisor

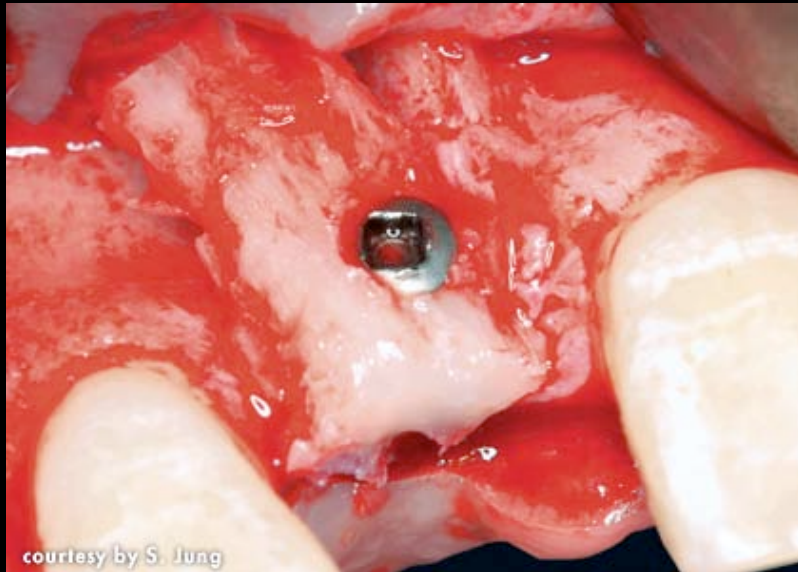


Figure 03

Autogenous corticocancellous block graft from the lateral mandibular ramus is used to fill the defect.

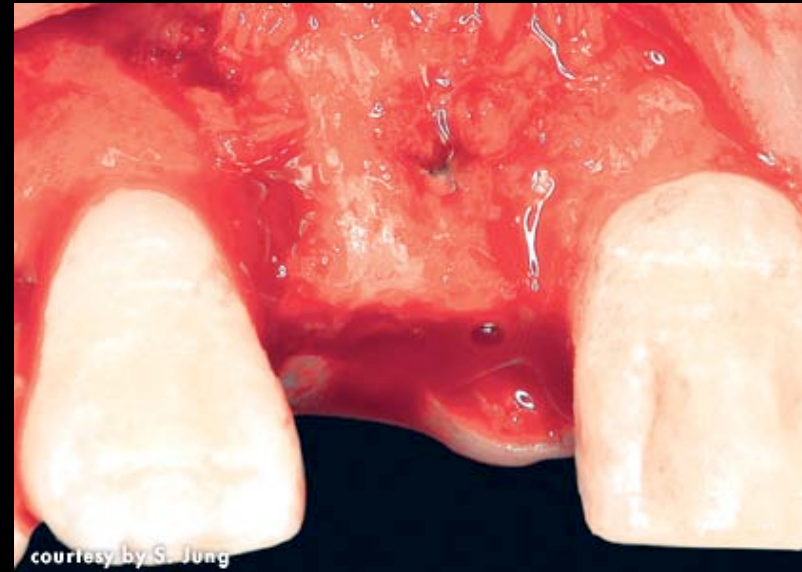


Figure 04

Additional autogenous particulate bone chips are added around the block graft.

CASE 3: Upper right central incisor



Figure 05

Tension free wound closure.



Figure 06

Post-operative incisal view on the augmented alveolar ridge 4 months later.

CASE 3: Upper right central incisor



Figure 07

Incisal view shows “W” incision line for preservation of soft tissue at the inter-dental area.

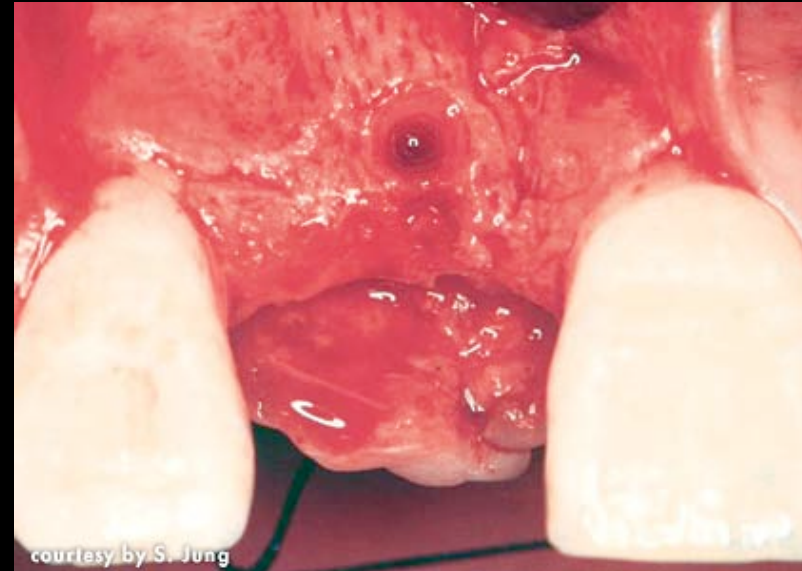


Figure 08

Good incorporation of the grafted bone.

CASE 3: Upper right central incisor

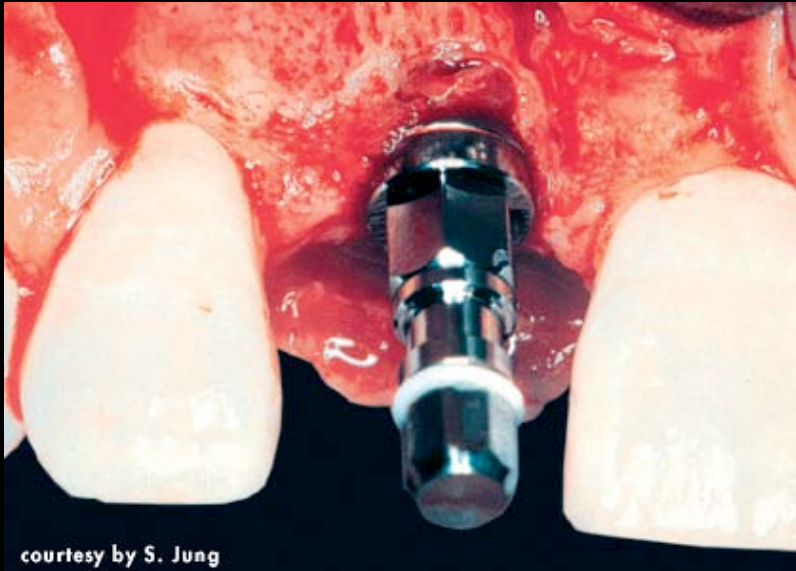


Figure 09

The Straumann® Standard Plus Implant, Ø 4.1 mm RN (SLA® 10.0 mm), is placed in the correct 3-dimensional position.



Figure 10

Semi-submerged wound closure.

CASE 3: Upper right central incisor



Figure 11

Radiographic view 2 months after implant placement.



Figure 12

Incisal view: after healing period of 8 weeks.

CASE 3: Upper right central incisor

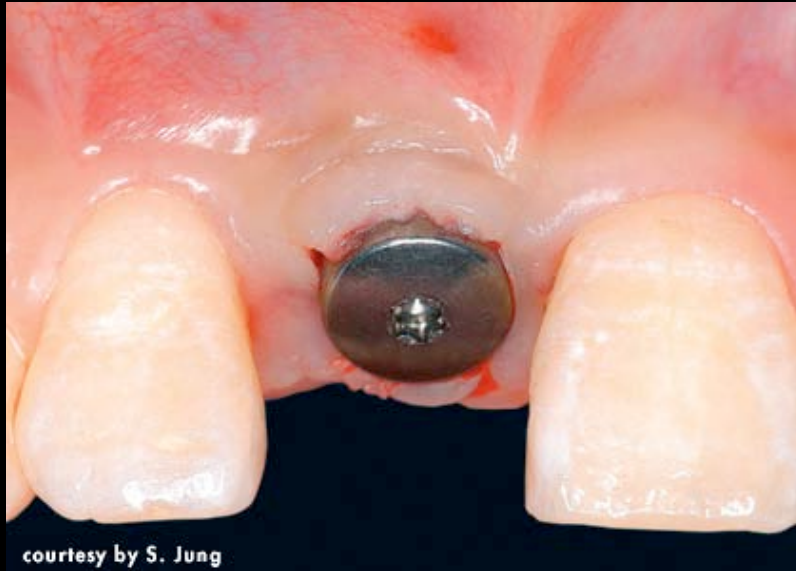


Figure 13

A healing cap was placed for soft tissue molding after the uncovering procedure.



Figure 14

The soft tissue conditioning was achieved with a provisional crown. A RN synOcta® 15° angled abutment was inserted into the Straumann implant with a torque of 35 Ncm using a SCS screwdriver.

CASE 3: Upper right central incisor



Figure 15

Inciso-labial view 1 year following the implant placement.



Figure 16

The 1-year radiograph illustrates an excellent bone crest level around the implant.

CASE 3: Upper right central incisor



Figure 17

Esthetic results with the final crown 1 year following the implant placement.

CASE 4: Upper left canine



Dr. Yasushi NAKAJIMA

Osaka, Japan

Dental technician: Mr. Masatoshi Hotta

Dental craft Bloom, Sakai City, Japan

CASE OVERVIEW

Patient (50, male) with chief complaint: Missing tooth # 23 (FDI).

Deciduous tooth #63 (FDI) was removed due to caries and a removable denture was placed.

No systemic disease was present that would prohibit implant treatment. Gingival plaque control was established and scaling/ root planning was performed at the sites with pocket probing depth (PPD) >4.0 mm. Sites with more than 5.0 mm PPD were not observed. Planning of implant placement: When # 63 was removed, a lack of 5.0 mm vertically on the buccal bone wall was confirmed. A Straumann® Standard Plus Implant, Ø 4.1 mm RN (SLA® 12.0 mm), was placed 2 months after tooth extraction as early implant placement.

Sufficient mesio-distal width (7.0 mm) existed at the site of # 23.

Sufficient bone height was observed on the x-ray finding. However, a GBR procedure was necessary because of insufficient buccal bone volume confirmed at the time of tooth extraction. An ideal wax-up of the provisional restoration with optimal contours and emergence profile was placed to prepare the site for the final restoration.

CASE 4: Upper left canine



Figure 01

Deciduous Tooth # 63 was removed two months prior due to caries.

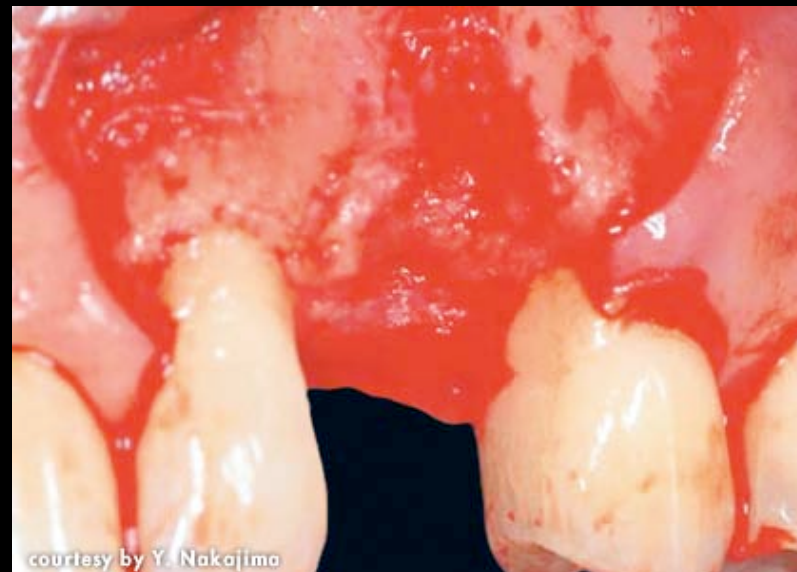


Figure 02

Palatal incisions and divergent release incisions were performed at the site of # 23. A muco-periosteal flap was elevated without any damage to the papilla area. A 2 wall bony defect presented and GBR procedure was necessary.

CASE 4: Upper left canine

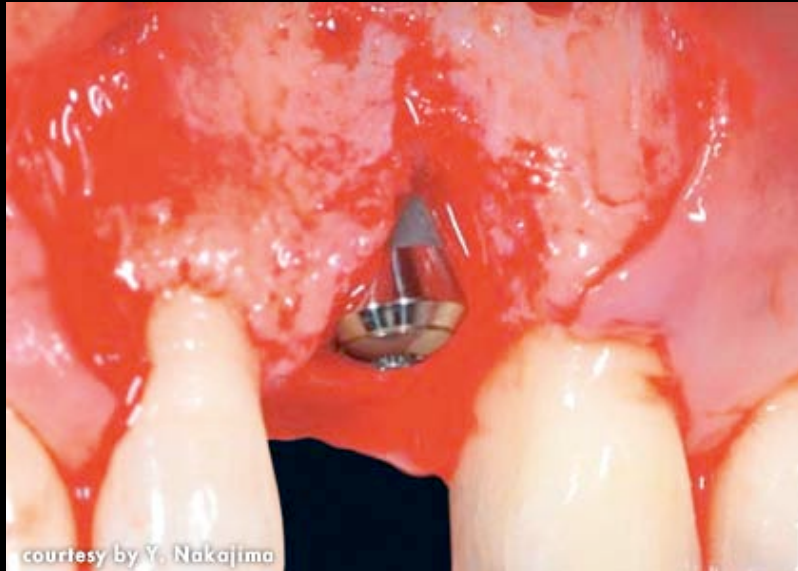


Figure 03

A Straumann® Standard Plus Implant, Ø 4.1 mm RN (SLA® 12.0 mm), was placed. The axis was slightly angulated labially.

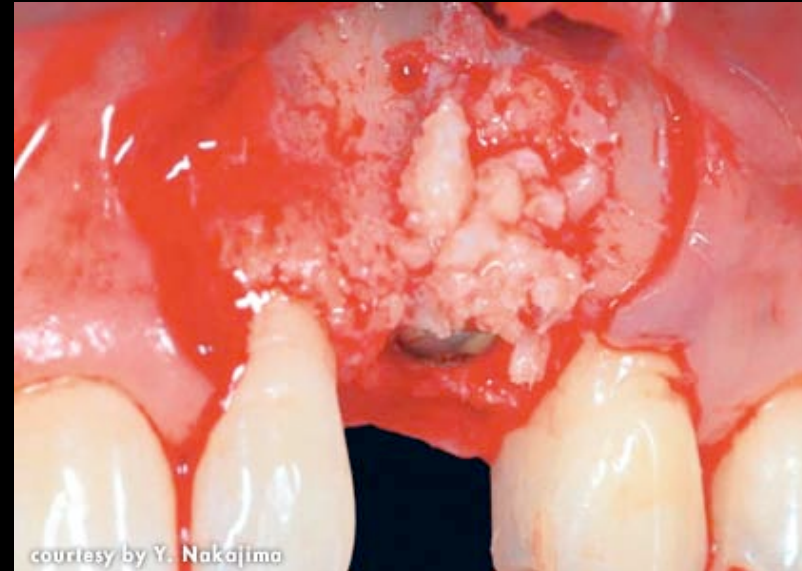


Figure 04

Autogenous bone chips were harvested from the site's apical region and placed into the bony defect around the implant.

CASE 4: Upper left canine

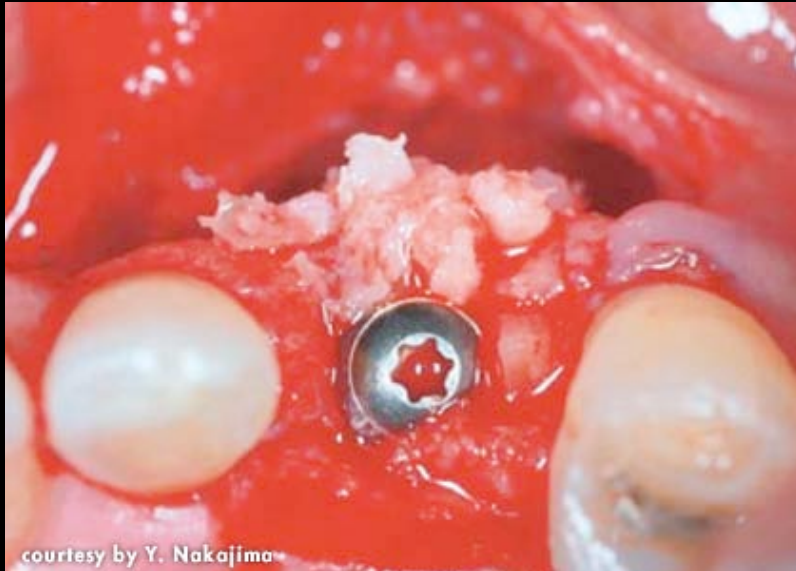


Figure 05

Autogenous bone graft material was “overfilled” on the bony defect.



Figure 06

A resorbable membrane was placed on the bone graft.

CASE 4: Upper left canine

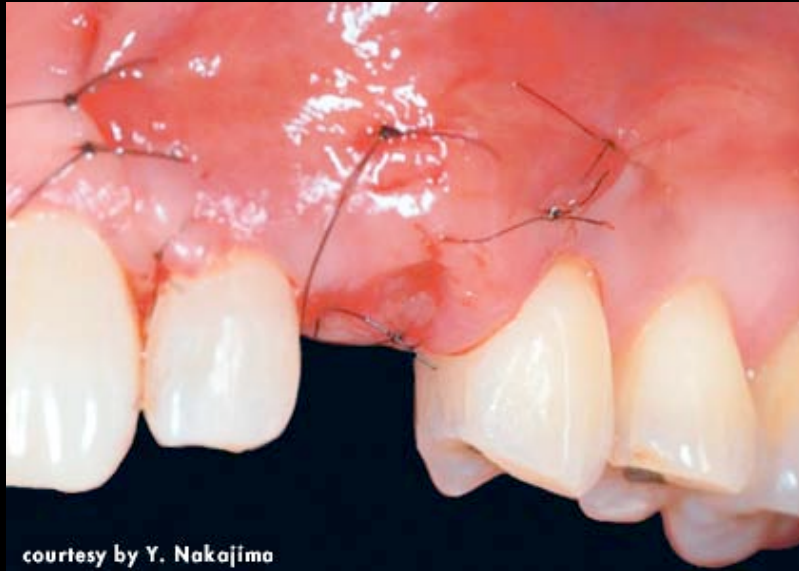


Figure 07

Tension free wound closure was performed.



Figure 08

After 4 months, a minor gingivectomy was performed.

CASE 4: Upper left canine



Figure 09

Provisional after two weeks in position.

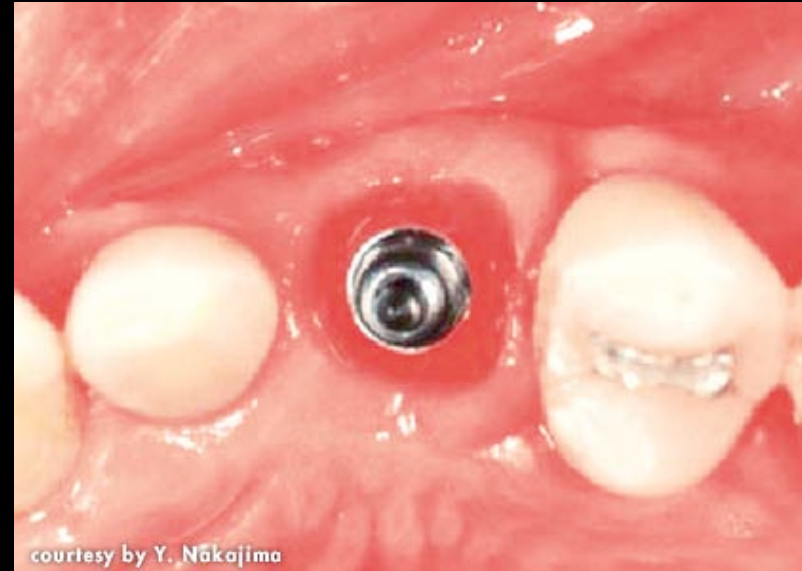


Figure 10

Impression for final restoration was taken after 4 weeks of mucosa conditioning.

CASE 4: Upper left canine



Figure 11
Selection of a RN synOcta® angled abutment.

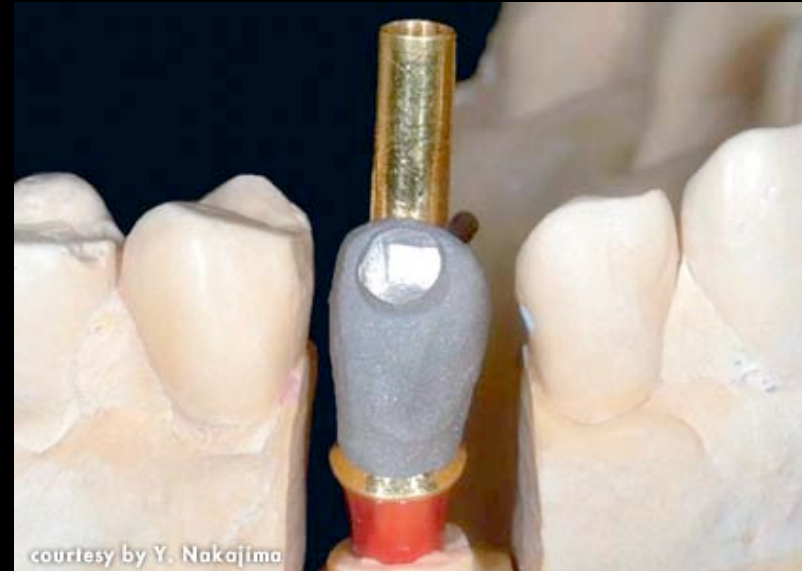


Figure 12
Cast on master model.

CASE 4: Upper left canine

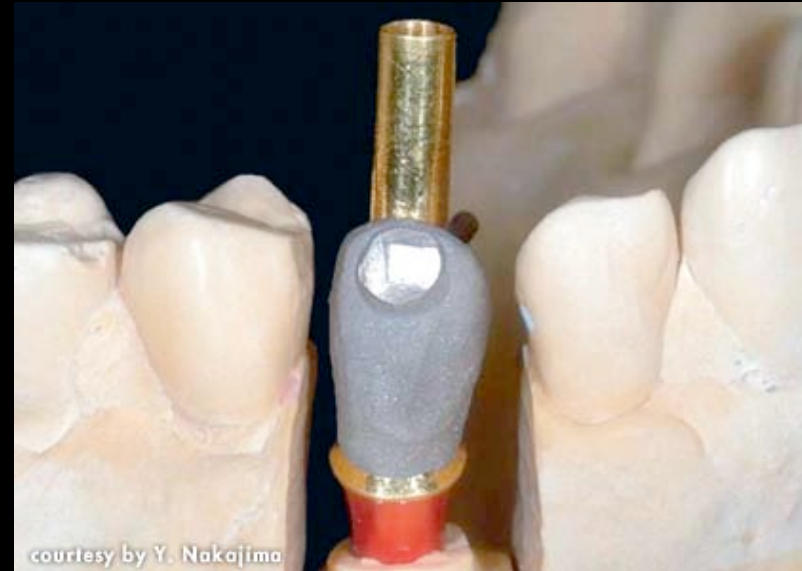


Figure 13/14

Porcelain fused-to-metal (PFM) crown was inserted with screw retained suprastructure.
Screw access hole was filled with composite version.

CASE 4: Upper left canine



Figure 15/16

X-ray at 2 years after implantation and 2-year follow-up of implant site. Implant was controlled by the Cumulative Interceptive Supportive Therapy (CIST) program and well maintained implant tissue was observed for 2 years without any complications.

CASE 5: Upper right lateral incisor



Dr. Enzo VAIA

Naples, Italy

Prosthodontist: Dr. Vincenzo Nasti

Dental technician: Sig. Sergio
Cimmino

CASE OVERVIEW

A 21-year-old patient in excellent dental-periodontal health was affected by agenesis of tooth #12 (FDI). Replacement of the missing dental element involved a removable resin prosthesis with wire hooks on distal elements. In order to ensure esthetic and functional comfort after surgery, it was decided to use an orthodontic attachment from tooth 13 to 23 with a passive wire supporting a resin tooth with a direct orthodontic attachment.

A diagnostic wax model was taken and a prosthetic stent prepared. To ensure a suitable emergence profile, a Narrow Neck Implant was placed. During surgery, a graft of connective tissue taken from the palate was performed in the vestibular region in order to restore root convexity. Immediately after surgery, the orthodontic wire was remounted with the resin tooth suitably unloaded, in order to avoid premature functional loads on the implant.

After 4 months, once healing was achieved, the impression of the implant was taken, and the restoration was fabricated using a direct individual abutment onto which a gold-ceramic crown was cemented.

CASE 5: Upper right lateral incisor



Figure 1:
Clinical view after applying orthodontic fittings with a passive wire supporting a resin tooth in 12 (FDI).



Figure 2:
X-ray image of upper anterior region.

CASE 5: Upper right lateral incisor



Figure 3:
Insertion of depth gauge to check the axis of
insertion of the implant and its length.

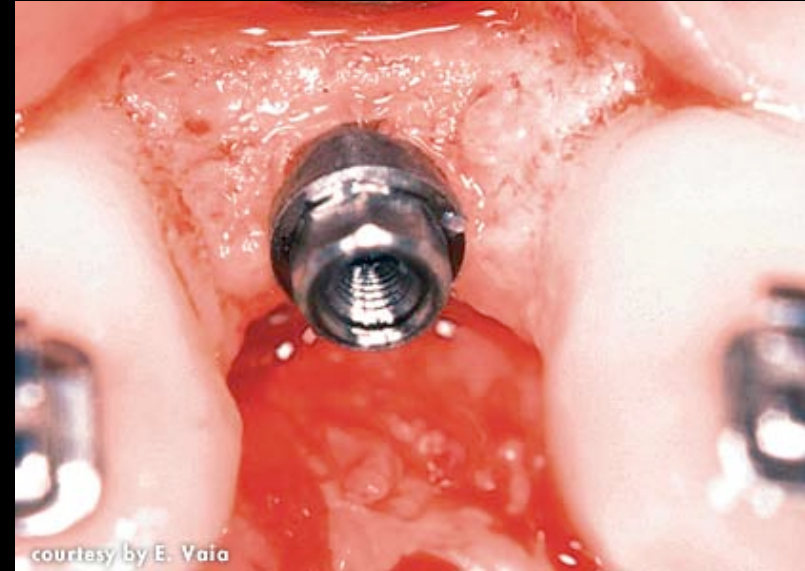


Figure 4:
NN Implant fitted in the 12 region.

CASE 5: Upper right lateral incisor

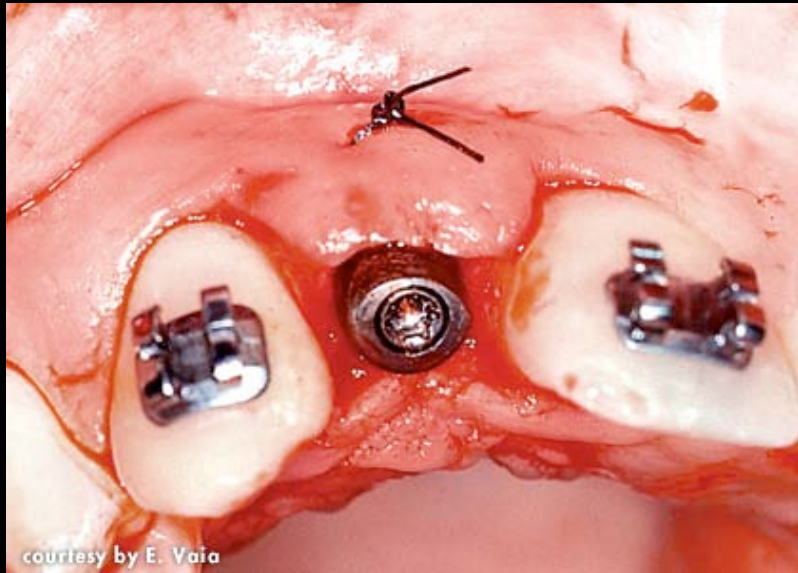


Figure 5:

Suture of connective tissue taken from palatal flap.



Figure 6:

Repositioning of the passive orthodontic wire to which the missing tooth is attached. Note the absence of contact between the tooth and the implant to avoid premature functional loads during the osseointegration stage.

CASE 5: Upper right lateral incisor



Figure 7:

Clinical healing of the implant. Note the excellent state of health and the scalloped morphology of the peri-implant mucous membrane.

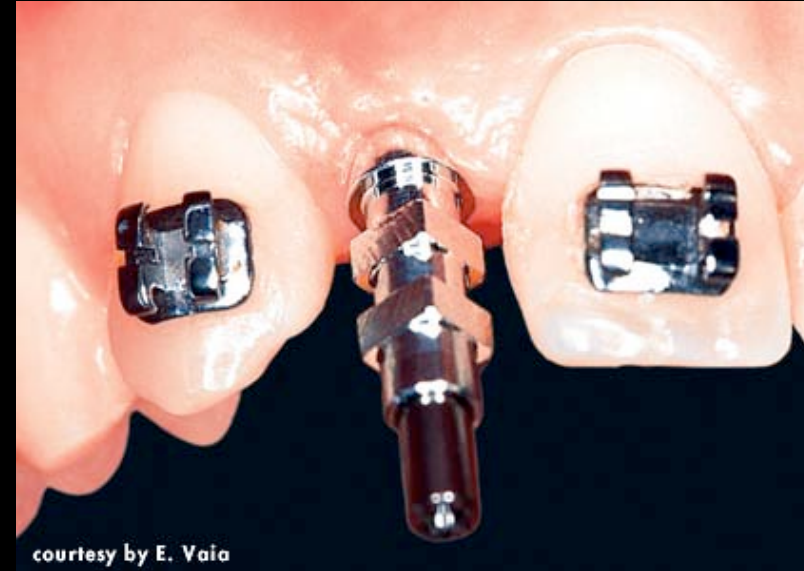


Figure 8:

NN Impression post is screwed onto implant to take the final impression.

CASE 5: Upper right lateral incisor



Figure 9:
Mounting of the titanium abutment
customized in the laboratory by the dental
technician.



Figure 10:
Gold casting test.

CASE 5: Upper right lateral incisor



Figure 11:
Crown and abutment mounted onto analog of
NN Implant.



Figure 12:
Clinical result obtained.

CASE 5: Upper right lateral incisor



Figure 13a/b/c:

Detail of the implant in the 12 region and tooth 22 (year 2001).

CASE 5: Upper right lateral incisor



Figure 14:

Follow-up X-ray (year 2001).

Figure 15/16:

Clinical check-up and X-ray after 3 years (year 2004).

CASE 6: Upper right central incisor



Case overview

Implant placement of central right incisor with
bone augmentation procedure

PD Dr. Thomas von ARX

Dept. of Oral Surgery and Stomatology

University of Berne, Switzerland

Prosthodontist: Dr. F. Zanella, Brig, Switzerland

CASE 6: Upper right central incisor



Figure 1:

20-year old female, high lip line.
Avulsion and loss of central right incisor at the
age of 15 years.



Figure 2:

Atrophy of the alveolar ridge on facial aspect.

CASE 6: Upper right central incisor

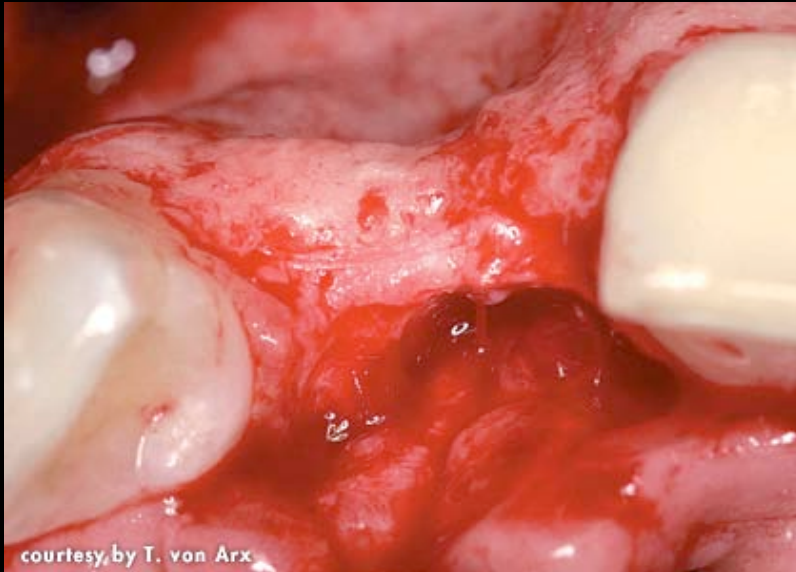


Figure 3:

Narrow crest (3 mm) with extended vestibular undercut and large incisive foramen.

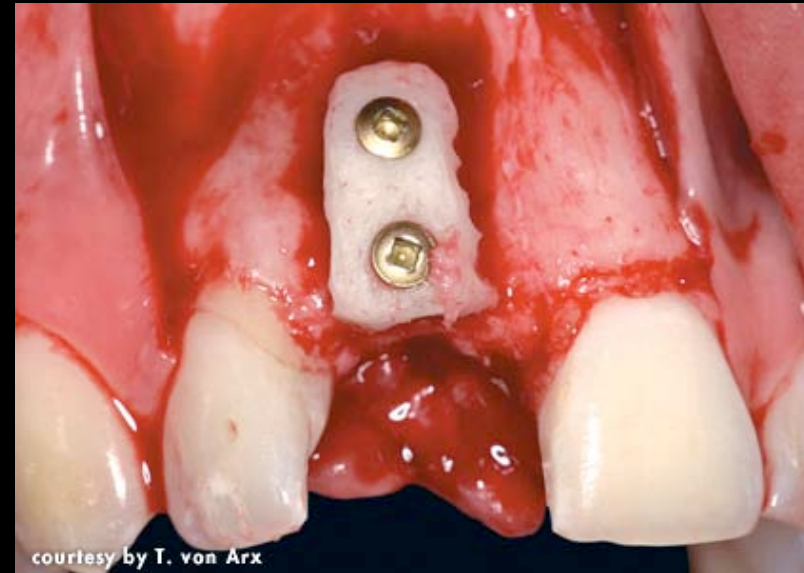


Figure 4:

A block graft was harvested from the symphysis and stabilized with two miniscrews for lateral ridge augmentation.

CASE 6: Upper right central incisor



Figure 5:

The occlusal view shows the enlargement of the alveolar crest to a width of 6 mm.

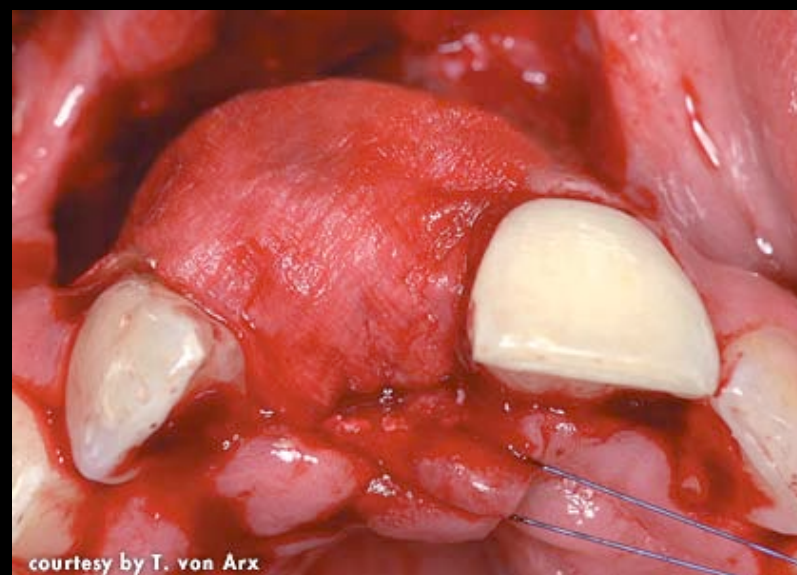


Figure 6:

Following the placement of xenogenic bone substitute particles around and onto the blockgraft, a collagen membrane was applied in a double layer-technique.

CASE 6: Upper right central incisor



Figure 7:

The postoperative periapical radiograph shows the blockgraft and the two fixation screws.



Figure 8:

5 months after the augmentation, the patient was scheduled for implant placement.

CASE 6: Upper right central incisor

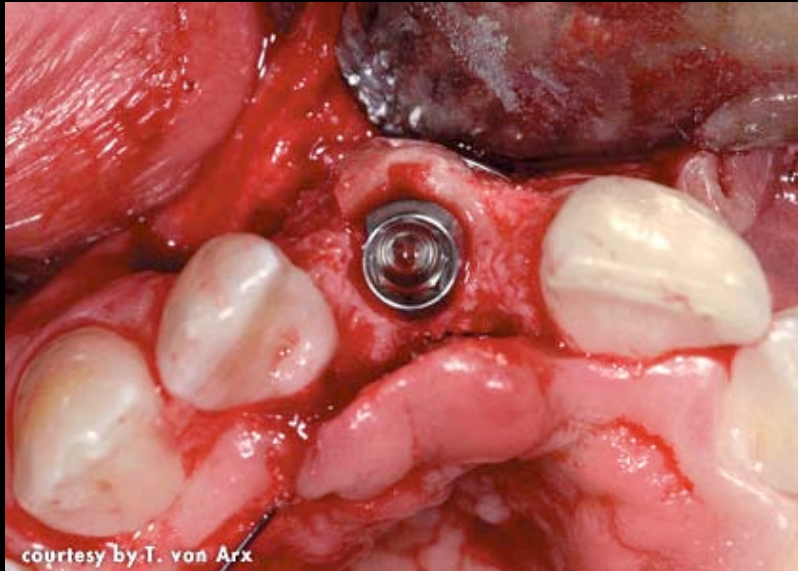


Figure 9:

A Straumann dental implant was placed in a correct position for optimal esthetic outcome.



Figure 10:

The prosthetic work was done by the private dentist of the patient (Dr. F. Zanella, Brig, Switzerland).

CASE 6: Upper right central incisor

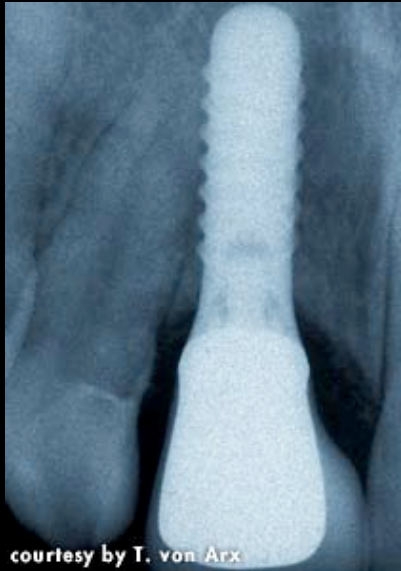


Figure 11:
Periapical radiograph following placement of the implant crown.



Figure 12:
Gummy smile and esthetic demands by the patient were a challenge to the surgeon and the prosthodontist. Final result 10-months after final restoration.

CASE 7: Upper lateral incisors



Gérard AOUATE

DDS, PhD, Paris, France

Dental technician: Patrick
Genini

CASE OVERVIEW

This case presentation describes the treatment of a young male adult presenting congenitally missing upper laterals. Hypodontia results in some loss of function, such as chewing, and affects esthetics. In young patients, when teeth are absent, prosthodontic rehabilitation can be accomplished with fixed or implant-retained prostheses. Implant therapy is the treatment of choice for the replacement of missing teeth and the Straumann® Dental Implant System is ideally designed to provide hard and soft tissue support for a predictable stability and location of the gingival margin where the long-term esthetic outcome is paramount.

CASE 7: Upper lateral incisors



Figure 1:

Shows a young patient (20 years old) with congenital hypodontia. The upper lateral incisors as well as the four first premolars are missing. Provisional resin bonded crowns replace the upper lateral incisors waiting to be permanently restored with implant-supported restorations.

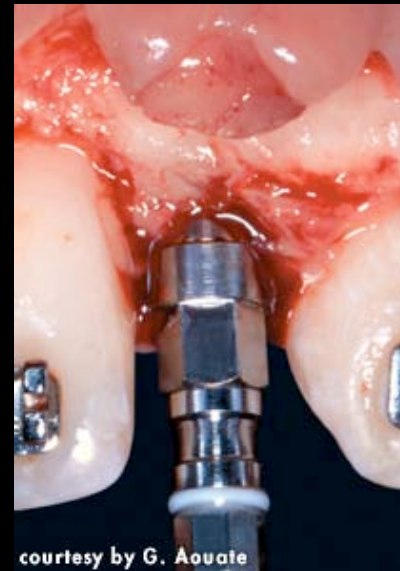


Figure 2:

Straumann® Standard Plus Implants, Ø 3.3 mm NN (SLA® 10.0 mm), are used to replace both missing lateral incisors in the maxilla.

CASE 7: Upper lateral incisors



Figure 3:

A free connective tissue graft, harvested from the tuberosity area, is intended to improve the labial aspect of the implant site. The healing cap contributes to the soft tissue enhancement.



Figure 4:

The soft tissue aspect at the completion of the implant placement. The connective tissue grafts are sutured to the labial flap in order to increase the volume of soft tissue around the implants.

CASE 7: Upper lateral incisors



Figure 5:
Narrow Neck implant with impression cap in place.



Figure 6:
Modification of the titanium abutment is required prior to construction of the provisional restoration.

CASE 7: Upper lateral incisors



Figure 7:

The all-ceramic crown placed on the model with gingiva mash helps to evaluate the emergence profile.

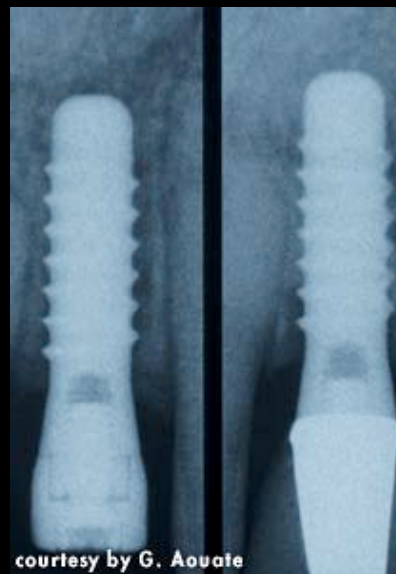


Figure 8:

Tooth #12: Control radiograph taken at implant placement (left) and after 1 year (right).

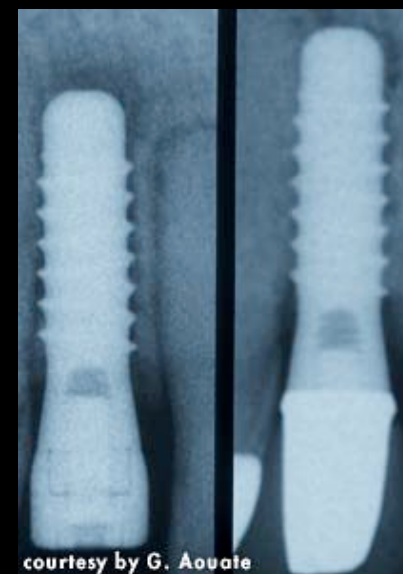


Figure 9:

Tooth # 22: Control radiographs taken at implant placement (left) and after 1 year (right).

CASE 7: Upper lateral incisors



Figure 10/11/12:

Harmonious integration of the implant-borne prostheses after one year.

CASE 8: Central maxillary incisors



CASE OVERVIEW

Replacement of adjacent maxillary central incisors with Straumann utilizing synOcta® 1.5 abutments with customized gold copings.

Will MARTIN

DMD, MS, Center for Implant Dentistry
University of Florida, Gainesville, USA
Surgeon: James Ruskin, DMD, MD
Dental technician: Todd Fridrich, CDT

CASE 8: Central maxillary incisors



Figure 1/2:

This 25 year-old female patient presented complaining of esthetic dissatisfaction and loose maxillary central incisors. Radiographic examination confirmed peri-apical radiolucencies and revealed external root resorption.

CASE 8: Central maxillary incisors



Figure 3:

After extraction of tooth 8 and 9 (ADA), the patient returned for definitive treatment subsequent to an extended healing period (12 months) utilizing a resin-bonded fixed provisional restoration. Hard and soft tissue examination revealed excellent health. Detailed site evaluation (width and height) revealed both sites were appropriate for implant placement.



Figure 4:

A surgical template was utilized to communicate the desired mesio-distal and oro-facial position of the implants to the surgeon. In addition, another template was utilized to capture the proper vertical dimension of the implant position.

CASE 8: Central maxillary incisors



Figure 5/6/7:

Although not recommended as routine, a punch incision was utilized to minimize surgical trauma to the appropriately contoured adjacent soft tissues. The implants were considered primarily stable, allowing for immediate loading with provisional restorations.



CASE 8: Central maxillary incisors



Figure 8:
6-weeks post-placement. Notice the matured gingival margin position and health of the surrounding soft tissues.



Figure 9:
Removal of the provisional restorations and abutments revealed excellent tissue health and dimensional contour. The provisional restorations had preserved papillary form both adjacent to the natural teeth and between the two implants.

CASE 8: Central maxillary incisors



Figure 10/11:

At delivery, the implants are irrigated and dried, and the synOcta® 1.5mm abutments are positioned and torqued to 35 Ncm. The customized copings (synOcta® gold copings) are then placed and also torqued to 15 Ncm. Customized copings (synOcta® gold copings) provide for screw-retained machined components at the shoulder level, and an accessible and contoured cement margin for the definitive restorations.

CASE 8: Central maxillary incisors



Figure 11/12:

At delivery, the implants are irrigated and dried, and the synOcta® 1.5mm abutments are positioned and torqued to 35 Ncm. The customized copings (synOcta® gold copings) are then placed and also torqued to 15 Ncm. Customized copings (synOcta® gold copings) provide for screw-retained machined components at the shoulder level, and an accessible and contoured cement margin for the definitive restorations.

CASE 8: Central maxillary incisors



Figure 13/14/15:

Implant restorations at the time of delivery,
nine months post-loading.



CASE 8: Central maxillary incisors



Figure 16:
Radiograph at 2 years post-loading.



Figure 17:
Implant restorations at 2 years post-loading.

CASE 9: Central maxillary incisors



Dr. Ralf MASUR

Bad Wörishofen, Germany

Dental technician: Ralf Bahle, ZTM

CASE OVERVIEW

61-year-old patient with deep periodontal damage at teeth 11 and 21 (FDI), recession of the interdental papilla of approximately 4.0–5.0 mm, and remaining sulcus depth of about 5.0 mm. It was determined that the teeth were not worth saving. Approximately 4 months after extraction and simultaneous augmentation of connective tissue, bone was augmented with a bone block from the region of the right mandibular ramus (ramus region 48). The particular difficulties presented by this negative soft tissue profile lay in the large amount of soft tissue required in order to cover the voluminous bone block, and the reconstruction of the pronounced vertical damage. After 3 months of implant placement and healthy gingival and mucosa, the final crown was inserted.

CASE 9: Central maxillary incisors



Figure 1:

Initial situation in a 61-year old male patient. Severe periodontal bone loss at teeth 11 and 21. Complete loss of the interdental septum and papilla.



Figure 2:

Clinical appearance 4 months after extraction with simultaneously placed connective tissue graft.

CASE 9: Central maxillary incisors

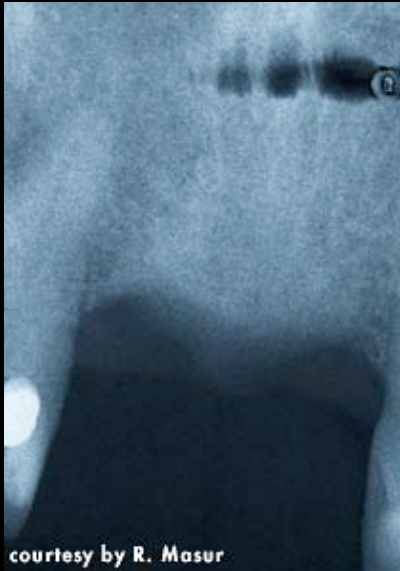


Figure 3:

The x-ray demonstrates the severe vertical bone defect at the missing teeth and of the mesial septum of the neighboring teeth.

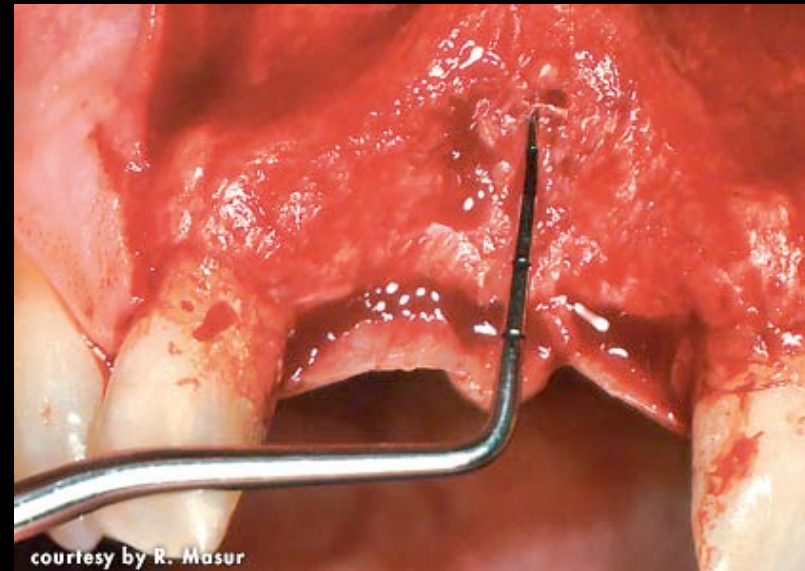


Figure 4:

The surgical site demonstrates the three-dimensional defect. A vertical bone loss of 8.0 mm in the labial interdental region and a horizontal component of approximately 6.0 mm bone loss also becomes apparent.

CASE 9: Central maxillary incisors

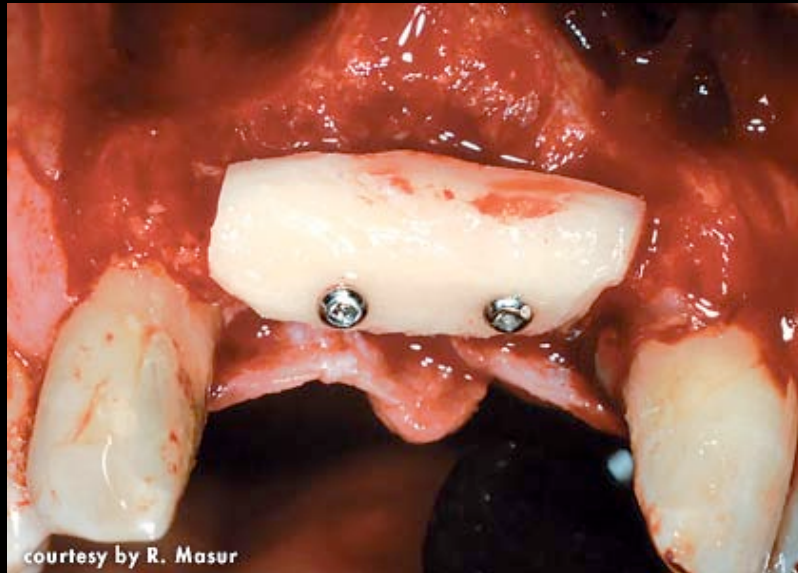


Figure 5:

An autogenous block graft harvested from the right mandibular ramus is fitted precisely to ensure bony regeneration.



Figure 6:

The x-ray 4 months after the augmentation demonstrates the good integration of the bone block.

CASE 9: Central maxillary incisors



Figure 7:

The clinical situation 4 months after block grafting shows very good wound closure and restoration of the lost hard tissue. Nevertheless, the compromised papillae of the adjacent front teeth (interdental papilla) is significant.

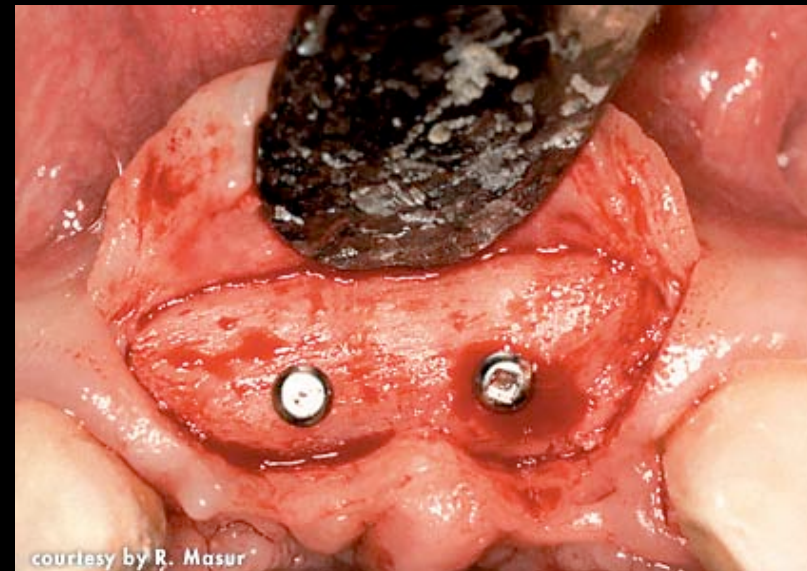


Figure 8:

Minimally invasive opening of the surgical site for insertion of the implants shows a vital block graft with very good vascularisation and minimal resorption.

CASE 9: Central maxillary incisors

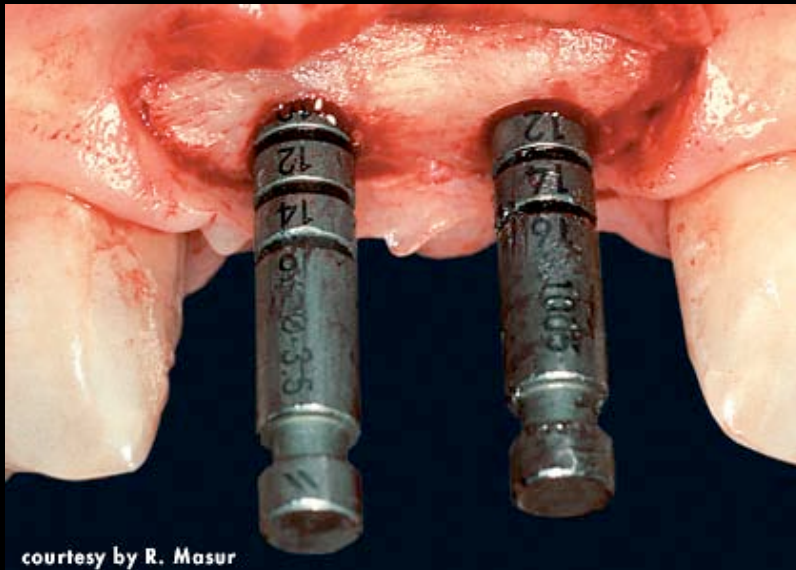


Figure 9:
Depth gauges are inserted into the implant beds to allow evaluation of the axial alignment of the implants.

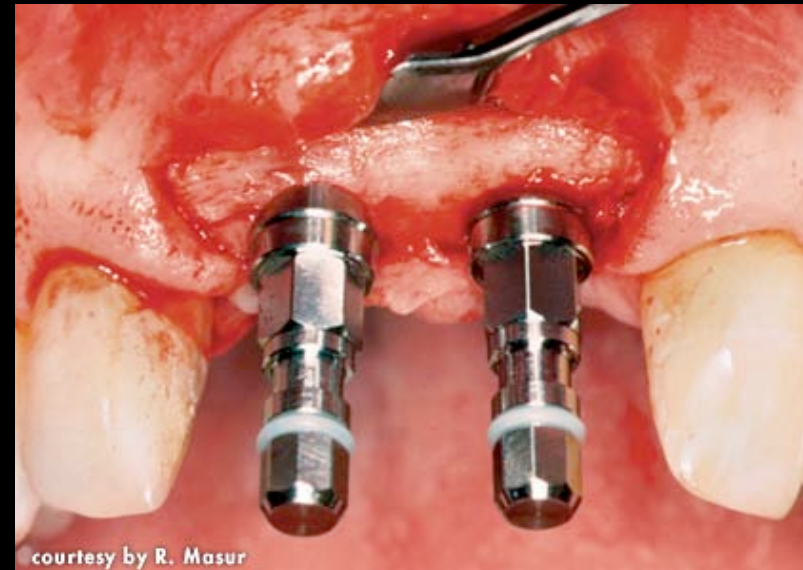


Figure 10:
View of the inserted implants in the final three-dimensional position.

CASE 9: Central maxillary incisors

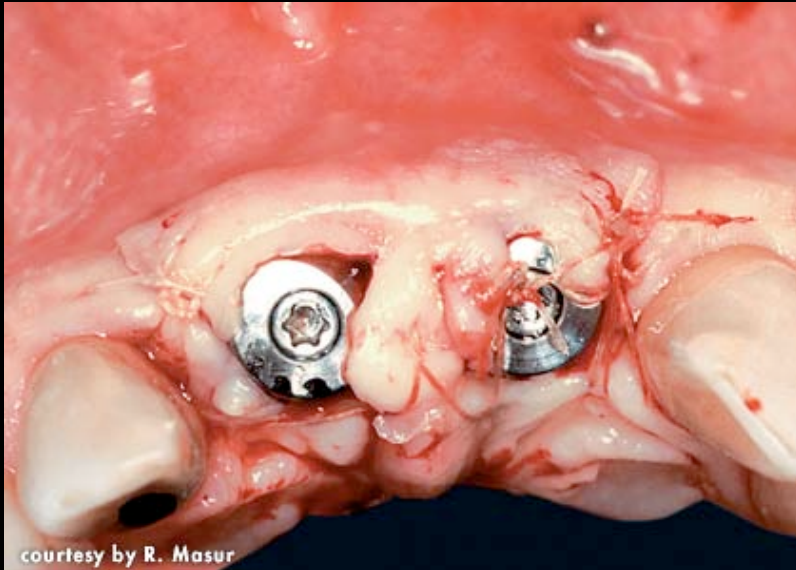


Figure 11:
Suture (4-0, absorbable) with a rotation flap in order to enable optimum volume regeneration of the inter-implant soft tissue. The beveled esthetic healing caps were positioned with their bevel facing between the implants for a tension free inter-implant-tissue closure.

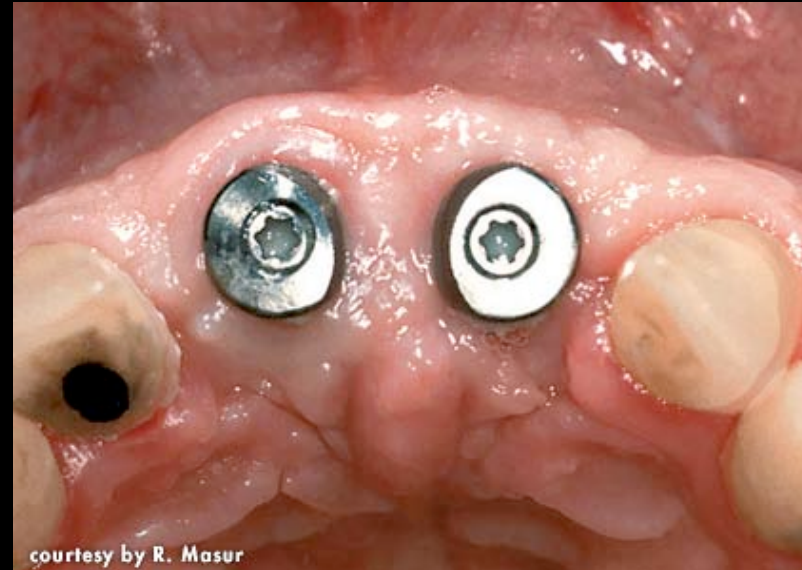


Figure 12:
After a healing period of 3 months, the hard and soft tissue regeneration in combination with a volume gain is demonstrated.

CASE 9: Central maxillary incisors



Figure 13:

3 months after implant insertion the harmonious integration of the block graft and the resulting successful vertical augmentation of the defect is clearly visible on the radiograph.



Figure 14:

RN synOcta® cementable abutments and well-shaped soft tissue after trial wearing of the metal ceramic crowns. The implant shoulders are only minimally submerged to provide optimal preservation of the reconstructed bone. The skillful dental technician's reconstruction optimizes the impression of the well-shaped soft tissue and for esthetic closure of the interdental space.

CASE 9: Central maxillary incisors



Figure 15:

Final clinical picture after incorporation of the metal ceramic crowns shows the harmonious course of the soft tissue margin and the healthy gingiva and mucosa.

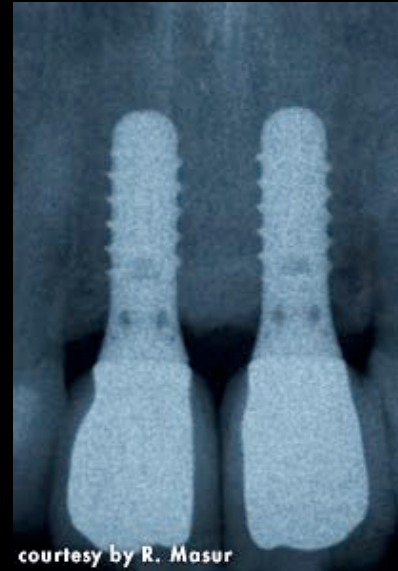


Figure 16:

Control x-ray 6 months after prosthetic reconstruction and 9 months after transgingival implant insertion. In keeping with the principle of biologic width, the bone level is maintained at the SLA®/smooth surface interface.

CASE 9: Central maxillary incisors



Figure 17:

The final clinical situation of the implant and prosthetic reconstruction 6 months after insertion of the crowns with natural restoration of the anatomy.



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