Fig. 1: Tooth 12 was horizontally fractured and therefore had to be removed.

Fig. 2: The initial clinical situation is characterized by gaps between the upper and lower anterior teeth.

Fig. 3: Large gap regio 12.

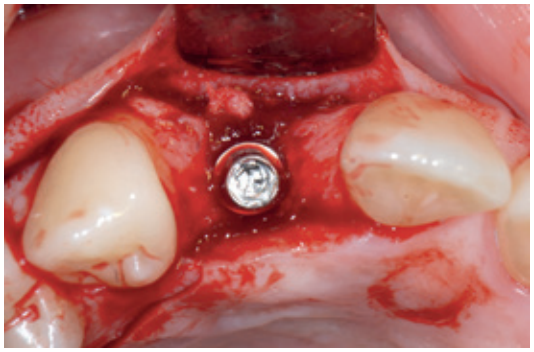

Fig. 7: Positioning of the iSy implant below the dental tubercle for palatal screw retention. Bone chips from the drilling site were inserted buccally.

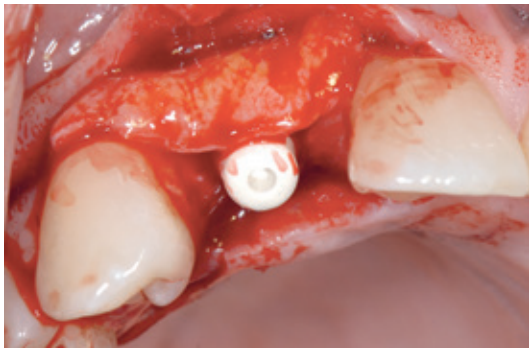

Fig. 8: Soft tissue augmentation using a thick connective tissue transplant harvested from the palate.

ESTHETICS AND FUNCTION IN THE ANTERIOR AND LATERAL AREAS – EFFICIENTLY IMPLEMENTED WITH iSy

Dr. Andreas Kraus, Peiting

The iSy Implant System was launched on the market at IDS in 2013. Along with high quality standards, iSy is also characterized by outstanding efficiency and cost effectiveness. Both these aspects formed the heart of the iSy System concept right from the start and represent the added value of the product concept. At the same time, the completely redeveloped iSy Implant System was provided with quality features and properties that ensure outstanding functional and esthetic treatment outcomes. Dr. Andreas Kraus has been an iSy user from the word go. He uses the system for a wide range of indications and presents two of his own patient cases here.

iSy in everyday use

The iSy Implant System attracted our interest right from the start thanks to its sophisticated product and application concept. After testing the product in the clinic for the standard indications, we extended the range of indications of the system extensively and now feel that there are hardly any restrictions on its clinical use. Our experiences refer to 142 iSy implants that we inserted from April 2013 to September 2015. The two case studies described below reveal the various options that the system offers us in routine clinical use.

Anterior reconstruction regio 12

The 53-year-old patient presented in our clinic with a horizontally fractured tooth 12 with root fillings **(Fig. 1)**.

The clinical findings eight weeks after tooth extraction are shown in **Figures 2 to 4**.

Fig. 4: From the incisal approach there appears to be a soft tissue and bone defect.

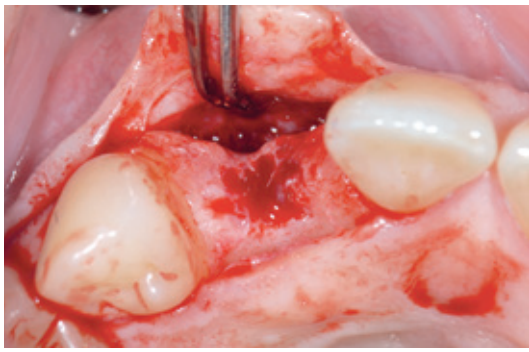

Fig. 5 and 6: Photograph of the implant region. Using the Luer bone rongeur, a plateau was prepared in the correct vertical position. Incision with no vertical relief incision.

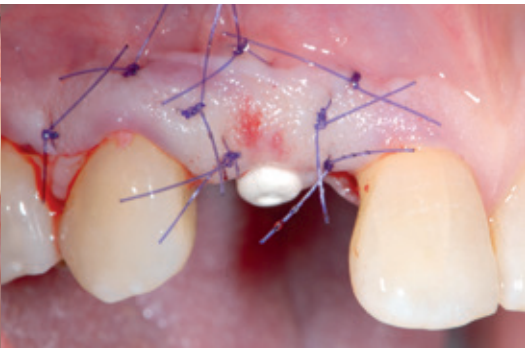

Fig. 9: Suturing around the iSy gingiva former mounted on the implant base (suture material Glycolon®, Resorba, 5.0 absorbable).

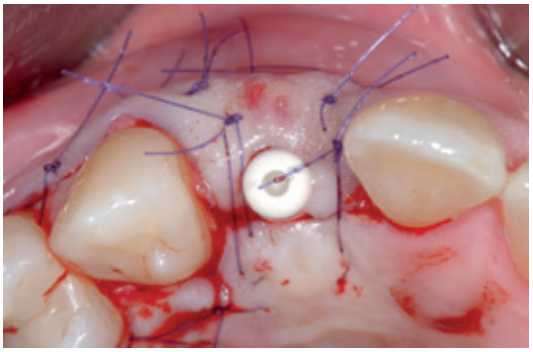

Fig. 10: The soft tissue lies close to the iSy gingiva former (PEEK).

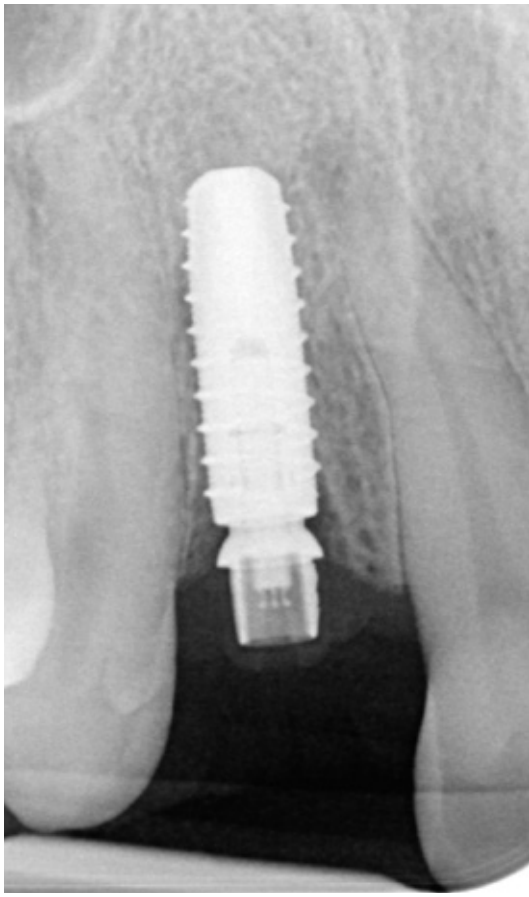

Fig. 11: Control radiograph after implant placement (iSy implant diameter 3.8 mm, length 11 mm).

After explaining the available treatment options in detail, the patient opted for an implant-supported prosthetic restoration. The implantation was done eight weeks after tooth extraction as a delayed immediate implant placement. The iSy implant was positioned so that it sits below the dental tubercle and the restoration can be screwed in from the palatal direction **(Fig. 5 to 7)**.

Transgingival healing

Even though subgingival healing is also possible with the iSy Implant System, we almost always prefer transgingival healing. This is very easily implemented with iSy using the premounted implant base, which also acts as an insertion post, and the PEEK gingiva former that can be attached to the implant base **(Fig. 8 to 11)**. We know from the literature that a transgingival approach in the esthetic zone has no drawbacks, even with moderate bone augmentation [1]. During the healing period, no prosthetic restoration was inserted at the patient's request.

Simple prosthetic transfer

The prosthetic restoration was completed after three months' healing. The healing proceeded without any complications and the soft tissue was very nicely contoured **(Fig. 12 and 13)**.

The prosthetic concept behind the iSy Implant System enables subsequent steps to be carried out very easily on the implant base: impression taking, bite registration, and the temporary restoration.

Fig. 12: Situation after three months' healing.

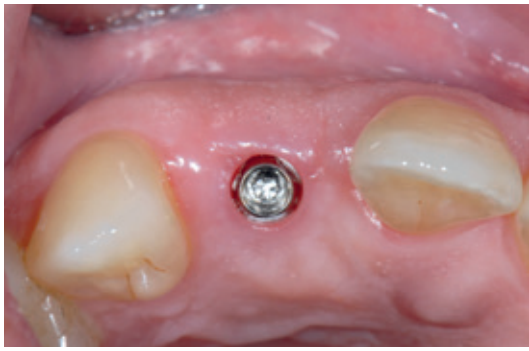

Fig. 13: View of the iSy implant base after removal of the iSy gingiva former. The soft tissue appears nicely thickened and robust.

Fig. 14: The multifunctional cap is mounted on the implant base. It enables highly precise impression taking.

Fig. 15: The retentions were filled with impression material (Impregum™, 3M Espe).

Fig. 16: The multifunctional cap shortened according to the terminal occlusion.

Fig. 20: Taking the impression of the gingiva using the custom gingiva former prepared chairside.

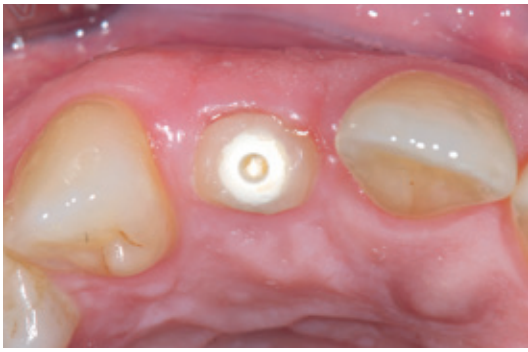

Fig. 21 and 22: Situation two weeks after the soft tissue conditioning.

Fig. 26: The long-term temporary restoration.

Fig. 27: Closing the very large gap was not forced.

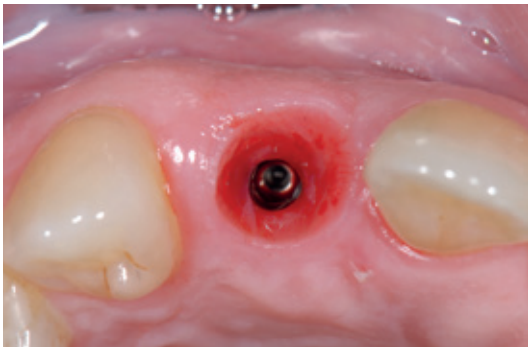

Fig. 28: Situation after removal of the long-term temporary restoration.

For the impression taking and bite registration we used the multifunctional cap that is mounted on the implant base precisely and which is secured against rotating. During the impression taking, ensure that the retentions on the multifunctional cap are filled with impression material. This ensures that the multifunctional cap is held securely in the impression material and the implant position can be transferred to the model with a high degree of precision **(Fig. 14 and 15)**.

The bite registration is done in the standard intercuspation position. To do this, another multifunctional cap (each iSy implant includes two multifunctional caps) is shortened on the basis of the occlusal situation and the bite registration is performed using the Shimstock protocol **(Fig. 16 and 17)**.

Soft tissue conditioning and prosthetic restoration

To condition the soft tissue in accordance with the planned emergence profile, the gingiva former was modified extraorally with composite material and reinserted **(Fig. 18 to 22)**. The initial slight anemia disappeared after a few minutes and the soft tissue subsequently looked very good.

The modified gingiva former is replaced after about two weeks with a long-term temporary restoration **(Fig. 23 to 27)**. The final restoration of zirconium oxide ceramic is then attached **(Fig. 28 to 33)**.

I would like to thank MDT Verena Grumber, Weilheim, for her assistance with the dental technician aspects of this case.

Fig. 17: The bite registration (LuxaBite, DMG) was carried out using the Shimstock protocol.

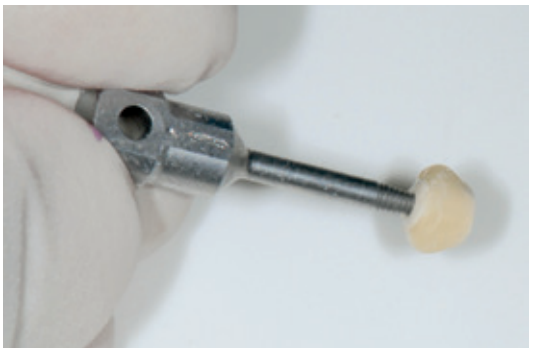

Fig. 18: The iSy gingiva former was modified extraorally with composite to form a trapezoid.

Fig. 19: Situation after insertion of the modified gingiva former. Slight anemia is apparent.

Fig. 23: When the gingiva former was removed, the soft tissue was completely free of irritation.

Fig. 24: Occlusal view of the iSy implant base.

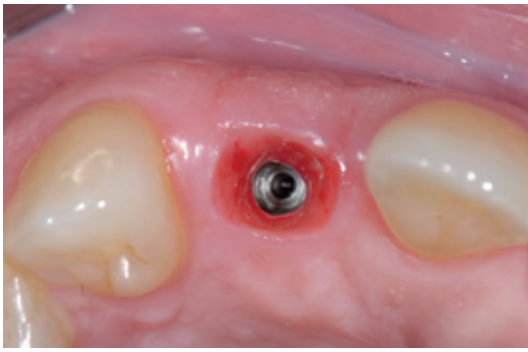

Fig. 25: Funnel-shaped soft tissue contouring around the implant.

Fig. 29: Immediately before insertion of the final restoration.

Fig. 30: The final zirconium oxide ceramic restoration blends harmoniously into the dental arch.

Fig. 31: Close-up of the final restoration from the labial direction …

Fig. 32: … and the incisal direction.

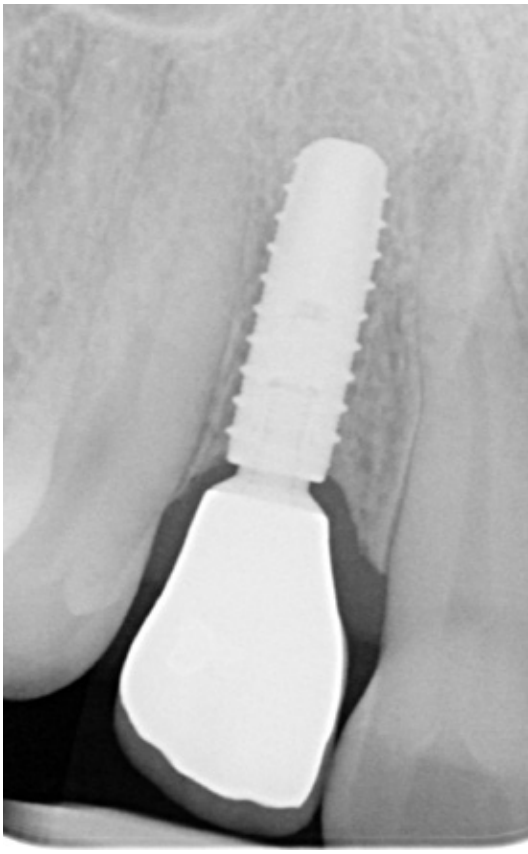

Fig. 33: The control radiograph reveals the outstanding osseointegration with the platform switching achieved with the system.

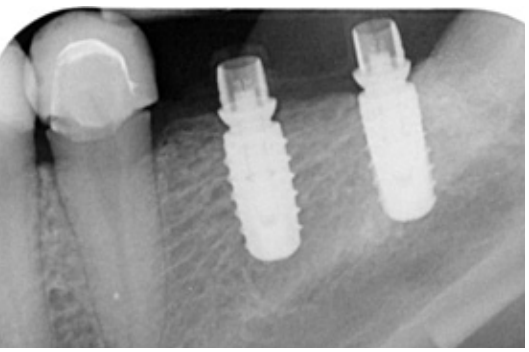

Fig. 34: Second case study: Insertion of two iSy implants with diameter of 4.4 mm, length 11 mm.

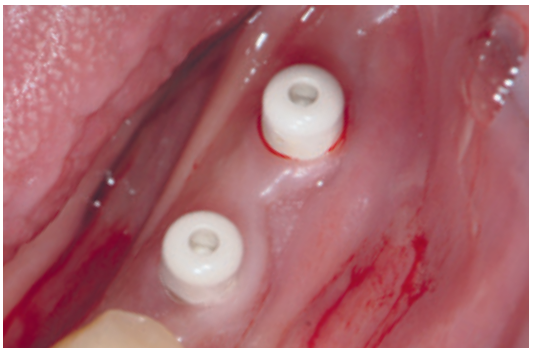

Fig. 35: Situation after two months' transgingival healing.

Fig. 36: Occlusal view of the implant bases. Preparation of tooth 35 for a full ceramic crown.

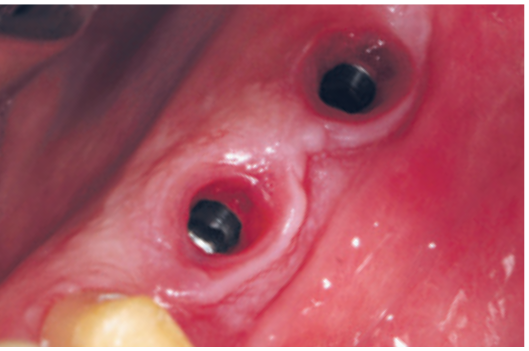

Fig. 40: Two weeks after the impression taking and the bite registration the implant bases were removed.

Fig. 41 and 42: The hybrid abutment crowns were screwed in from the occlusal approach. The screw channel was sealed with a filling composite.

Fig. 43: The clinical result immediately after the placement.

Second case study: Functional restoration in the lateral area

For the second case study, two iSy implants were used in the lateral area regio 36 and 37. The implant placement was carried out in August 2013. The surgical and prosthetic protocol could be reduced to a minimum in accordance with the underlying concept of the iSy Implant System. No additional augmentation measures were carried out apart from buccal insertion of bone chips harvested during the preparation of the implant bed. The clinical protocol adhered to the familiar iSy concept with transgingival healing. We achieved the final restoration very quickly from implant placement, osseointegration, and soft tissue healing as well as impression taking and bite registration.

The final full ceramic restorations (IPS e.max® Press, Ivoclar Vivadent) were screw-retained occlusally. The ceramic crowns were fabricated in the laboratory as a single unit, stained and glazed, and bonded to the iSy titanium bases with Multilink® implant using CAD/CAM. The ceramic surface in the screw channel was etched extraorally with 5% hydrofluoric acid and silanized (Monobond Plus, Ivoclar Vivadent). After insertion of the hybrid abutment crowns, these were tightened with 20 Ncm. The screw channel was then sealed up completely and esthetically with filling composite **(Fig. 34 to 44)**.

The clinical and radiographic situation 25 months after implant placement can be seen in **Figures 45 and 46**. The treatment outcome is functionally and esthetically stable. The highly efficient and safe use of the iSy Implant System was able to maximize the cost/benefit ratio for the patient.

I would like to thank MDT Herbert Hasler, Murnau, for his assistance with the dental technician aspects of this case.

Conclusion

The iSy Implant System is an absolute plus for our implant dentistry treatment spectrum. The motivation for us to use iSy lies in the well thought-out and patient-appropriate product concept. The obvious transgingival approach resulting from the premounted implant base offers a number of advantages. The final restoration can be carried out with this two-part implant system with only a single abutment change, with corresponding positive outcomes for the biology of the hard and soft tissue [2]. Platform switching will soon be incorporated into the system with a conical implant-abutment connection and also offers a number of advantages [3, 4]. A slightly subcrestal positioning of the iSy implant encourages adequate gingival thickness when combined with platform switching – and soft tissue augmentation where necessary – which has positive outcomes for preserving the crestal bone level [5].

That iSy is also economically very attractive for all those concerned may encourage opting for an implant therapy concept and satisfies patient requests for prosthetic restorations that combine esthetics, function, and long-term stability.

Fig. 37: The iSy multifunctional caps are easily mounted on the implant bases for impression taking.

Fig. 38: Adequate vertical space is seen in the intercuspation position.

Fig. 39: Determination of the jaw relations in the terminal occlusion. The registration material (LuxaBite, DMG) is applied only in the areas missing occlusal contacts.

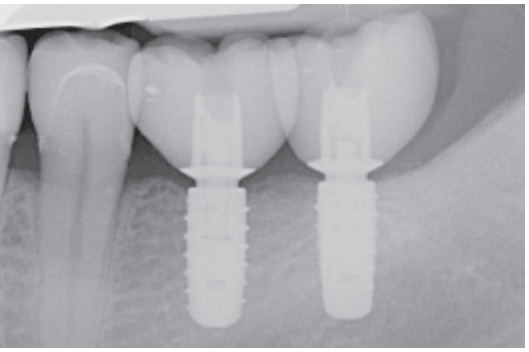

Fig. 44: The radiographic outcome immediately after the placement.

Fig. 45: Stable conditions 25 months after surgery.

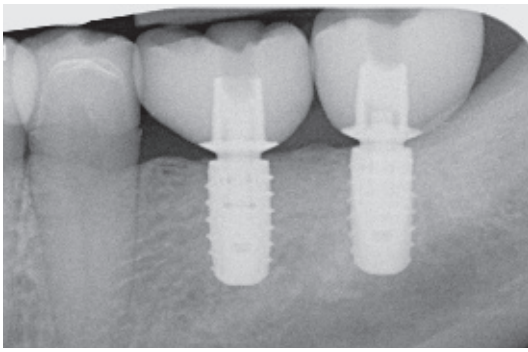

Fig. 46: An impressive result seen in the radiograph 25 months after surgery.

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AUTHOR

Contact details

Praxisklinik Pfaffenwinkel
Kraus & Reichenbach
Hauptplatz 10b
86971 Peiting
Germany
Telephone +49 8861 6024
E-mail dr.kraus@praxisklinik-pfaffenwinkel.de

Dr. Andreas Kraus

Dr. Andreas Kraus completed his state examination after his study of dentistry at Julius Maximilian University Würzburg in 2000. After several years as a partner in the Implantatzentrum Bad Wörishofen Dres. Masur, Kraus, Märkle, he has worked in the joint practice Praxisklinik Pfaffenwinkel Kraus & Reichenbach since 2011. His field of specialization is implant surgery and prosthetics. In 2010 he was nominated as an implant dentistry specialist (EDA). Memberships: Kempten working group, DGZMK, DGI, BDIZ, EDA, ITI.