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Germany's first implantologist Prof. Dr Hans L. Grafelmann turns 92

By DTI

The founder of dental implantology in Germany, Prof. Dr Hans L. Grafelmann, today looks back on a full and eventful life. In 1968, he pioneered in placing Germany's first dental implants in the form of extension implants in his dental practice. Today, his former patient still carries her fully functional dentures.

In fact, Prof. Dr Grafelmann's CV, the resume of a dentist, an inventor, a patent holder, specialist author and the editor of the first implantological specialist magazine "Orale Implantologie", is a whirl of plans and activities. In January 1970, along with six co-founders, he established Europe's oldest specialist society for dental implantology in Bremen/Germany: the DGZI e.V. (German Association of Dental Implantology). His international engagement and perseverance in gaining acknowledgement for dental implantology and implant prosthetics are unceasing. In Germany alone, he held and headed 25

educational implant congresses in the years between 1970 and 1993.

In all of his endeavors, he is motivated by the fundamental principle that implant therapy will serve the purpose of a worldwide improvement of people's quality of life. His experience as a dental specialist has taught him that often, implants have a longer functional life than the natural dentition. To this date, Prof. Dr Grafelmann advocates the addition of oral implantology to academic education, always also arguing for a close connection to the dental practice: "The best place to learn and teach is the dental chair in which we operate."

This philosophy of dedication, future- and patient-oriented science and practice-oriented education is the legacy which Prof. Dr Grafelmann will leave to dental and implantological experts worldwide, together with his extensive knowledge and experience. On 16 February 2017, he celebrated his 92nd birthday. **DTI**



Obstructive Sleep Apnea causes complications in implant-borne prostheses

By DTI

Researchers from OSI Araba University Hospital in Victoria, Spain, published a study that investigated how Obstructive Sleep Apnea (OSA) affects implant-borne prostheses. The frequency with which a complication occurred and the type of complication were studied in 67 patients. Contradictory to their initial hypothesis, the researchers found a high instance of complications related to OSA.

Of the 67 patients included in the study, the researchers found that 16 experienced complications; 13 of which had OSA. Among these 16 patients with complications, there were 22 prostheses with a total of 30 issues. The researchers found these complications consisted of porcelain fracture, fracture of the screw/implant, loosening of the screw, and

decentration. The average time for a complication to occur was 73 months' post-implantation. During the study, the researchers also noted a strong relation between individuals who suffer from OSA and those who suffer from bruxism. Past studies revealed that those afflicted with bruxism had a higher instance (6/10) of complications with implant prostheses than those without bruxism (13/75). This shows that people suffering from OSA and/or bruxism have a more difficult time with successful prosthetic implantation.

This study shows that 81 per cent of patients with OSA experienced complications with their prostheses. Given that the success rate of implants is reported to be between 92 and 97 per cent, there is a strong correlation between OSA and prosthetic complications. **DTI**

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Long-Term Clinical Success with the Neoss Implant System: A Case Report



By Dr. Thomas Zumstein, Switzerland

In this article Dr. Thomas Zumstein presents a Neoss implant case that has been in function for more than 11 years. The case shows that long-term success and stable bone levels can be achieved in a predictable way with a high level of simplicity using the Neoss implant system.

The clinical case is part of a previously published long-term study population on Neoss implants. The five year data from the study (Zumstein 2012) showed an overall survival rate of 95,0% and an average marginal bone loss of 0,4 mm during the first 5 years in function. These results indicate predictable treatment with good clinical outcome and stable bone levels after 5 years in function. The study has now been followed up for 10 years with no additional failures and no further bone loss since the 5-year follow-up.

Case background

A 41 year old woman came to our clinic with missing first molars on both sides of the mandible (Figure

1). The patient was healthy, with a good oral hygiene, she was a non-smoker and with good compliance. This made her a good candidate for implant treatment.

The main challenge in this case was the large space in the right molar area (position 46). The question in such case is whether to place one or two Implants, and in which positions to place them.

In such cases, if excellent implant stability can be obtained, I prefer to place one implant in the distal socket and the restoration with a crown with a mesial cantilever. I prefer this for several reasons:

- Smaller space between implant and adjacent teeth
- Less food impaction
- Better possibility to maintain a good oral hygiene
- Better esthetics: "more tooth than tulip"
- Better economic value for the patient

One risk with this approach is unfavorable load conditions due to the cantilever. Therefore it is crucial to

ensure that the implant stability is high and that the occlusal loads of the cantilever are minimized. In addition there are a few additional considerations I make when planning for a cantilever:

- The natural tooth next to the cantilever is very important. It provides sensory feedback and minimizes the risk of overloading the cantilever when biting.
- The cantilever should always be on the mesial side, since the bite forces are higher on the distal side of the reconstruction.
- The patient should not have any periodontal problems. If the patient is missing many teeth, the bite forces on each unit is increased and thereby the risk of overloading the cantilever is increased.

Implant placement

Two Neoss 4,0 x 11 mm implants were placed, one implant was placed in the left first molar area and another in the right first molar area. A distal position was chosen in the right first molar area, correct position and direction was ensured during drilling using a direction gauge (Figure 2). The implant was placed in a slight

supracrestal position (Figure 3).

If you have good keratinized soft tissue and you can place the implant as shown, then bone augmentation (GBR) is not necessary. In this case a cover screw was placed (Figure 4) and the implant was submerged during the healing period.

It is crucial to place the implant with a good primary stability and to obtain correct position and direction of the implant, in order to assure controlled loads and that the implant can be easily restored with a screw retained reconstruction.

Healing protocol

The implants were allowed to heal submerged for 12 weeks. After reopening, PEEK healing abutments were connected to the implants (Figure 5) and the soft tissue were allowed to heal for an additional 2 weeks before impression taking.

Impression taking

After soft tissue healing, impression copings were connected to the implants (Figure 6 and 7), note the good position and direction of the implants.

I recommend to always use an open impression tray. The reposition of the implant replica is much easier for the technician. The impression tray was modified with access holes that matched the implant positions (Figure 8). Extension tubes were mounted on the impression copings and an impression was taken (Figure 9).

Prosthetic workflow

The lab created cast, wax up frameworks in gold (Figure 10) on Neolink abutments. The final crown was a gold ceramic screw retained single crown (Figure 11). Note the tight contact between the crown and adjacent teeth, both mesially and distally.

Prosthetic delivery

At time of prosthetic delivery, the PEEK healing abutments were disconnected and a healthy soft tissue

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Figure 1: Initial situation



Figure 2: Direction gauge during drilling



Figure 3: Slight supracrestal implant placement

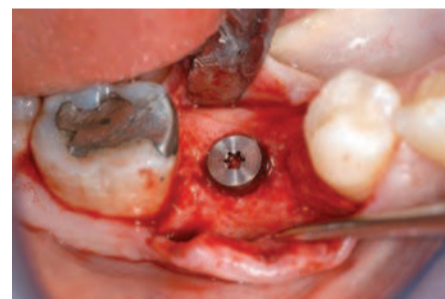


Figure 4: Cover screw connected



Figure 5: PEEK healing abutments



Figure 6: Impression copings



Figure 7: Impression copings



Figure 8: Individualized impression tray

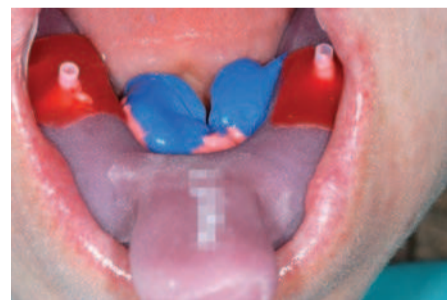


Figure 9: Impression taking



Figure 10: Gold framework



Figure 11: Gold ceramic screw retained single crown



Figure 12: Healthy soft tissue after healing



Figure 13: Definitive prosthesis



Figure 14: Definitive prosthesis



Figure 15: Screw access holes closed



Figure 16: Clinical situation after 11 years

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Figure 17: Clinical situation after 11 years

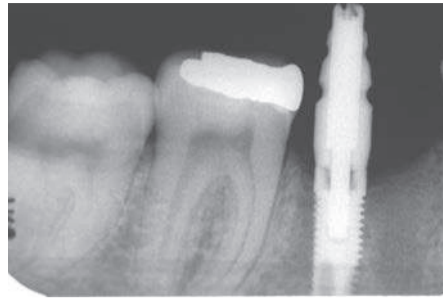


Figure 18: Baseline radiograph, right first molar area

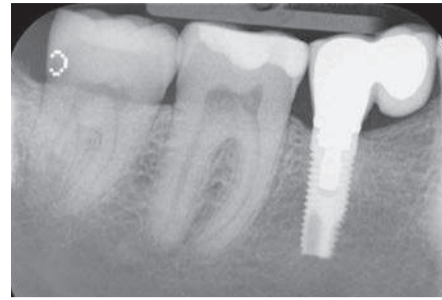


Figure 19: 11-year radiograph, right first molar area

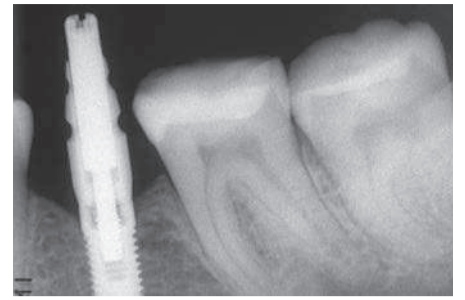


Figure 20: Baseline radiograph, left first molar area

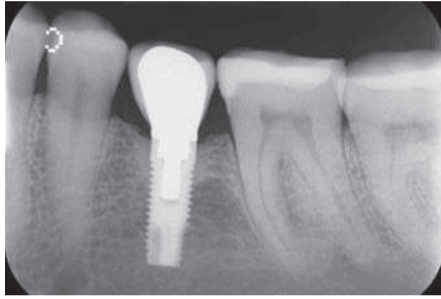


Figure 21: 11-year radiograph, left first molar area

around the implant was revealed (Figure 12).

The definitive prostheses were tried in (Figure 13 and 14). Articulating foil was used to avoid direct occlusal contacts. The screw access holes were closed after try in and delivery (Figure 15).

Good contact of the screw retained implant reconstruction to the adjacent teeth is important to avoid food impaction. The cantilever must be able to clean with super floss or at least with interdental brushes.

Long-term follow-up

Figure 16 and 17 show the clinical situation after 11 years. Note how stable the soft tissues have remained over

time. The bone levels also remained stable over the entire 11 years. Figure 18-21 show baseline and 11 year radiographs of both reconstructions. Note how the bone levels are slightly higher after 11 years than at time of impression.

Conclusion

This case shows that long-term stable bone and soft tissue levels can be

achieved in a simple and predictable manner using the Neoss implant system.

References

Zumstein T, Billström C, Sennerby L. A 4- to 5-year retrospective clinical and radiographic study of Neoss implants placed with or without GBR procedures. Clin Implant Dent Relat Res 2012;14(4):480-490. [DTI](#)

Graftless treatment of severe maxillary resorption

By Nobel Biocare

For patients with severe maxillary resorption, extensive grafting procedures can mean lengthy treatment times. But there is an alternative: By anchoring in the zygomatic bone, the NobelZygoma implant system can enable an immediate loading protocol for a graftless treatment. This dramatically shortens time-to-teeth and can allow patients with severely resorbed maxillae to return to a normal quality of life.¹

The new NobelZygoma 0° and NobelZygoma 45° implants anchor in zygomatic bone and provide an excellent option for treating severe maxillary resorption. They have an unthreaded implant body designed to interface with soft tissue, and depending on the anatomical situation parts of the implant body can be located outside of the maxillary sinus. For the extra-maxillary placement, the coronal part of the implant should still have bone support. This technique enables a position of the implant head close to the crest of the alveolar ridge that facilitates a prosthetic procedure which in turn offers easier cleaning and better comfort for the patient² while improving phonetics³

The straight implant head and mount-free insertion of the NobelZygoma 0° implant allow for greater flexibility during implant placement. The clinician can also enjoy prosthetic versatility with the new 45° and 60° Multi-unit Abutments. The NobelZygoma 45° implant comes in an extended range of implant lengths, from 30mm to 52.5mm, all with an external hex connection. [DTI](#)

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