

## Critical Review of Some Dogmas in Implantology – Are They Out-of-Date?

Many theses and dogmas in the field of Implantology have been considered to be truths. These theses, which have been published in literature and scripts, have even led to legal disputes, for example regarding expertise cases. In addition, some private health insurance companies are not willing to pay patients for the services of the dentists if the dentists do not perform treatments according to „old truths“ or out-of-date theses, although some of these theses have not proved to be true for about 10 years.

Due to their lack of evidence and support, these theses and dogmas are discussed. There are 11 examples, as follows:

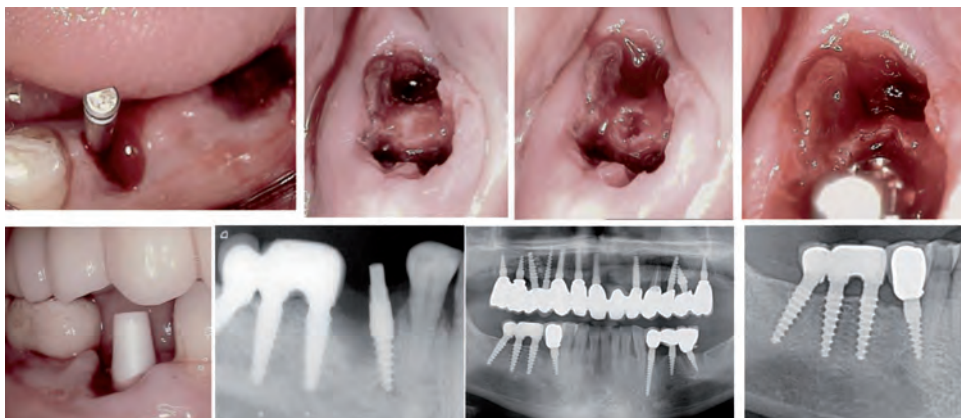
- 1) **„Pressure necrosis“**: Some 10 years ago, it was considered as harmful to the bone when it got laterally compressed or condensed when the implant was inserted! Recent studies, however, have shown that bone condensation is healthy for the bone instead of harmful for it. The concept of „primary stability“ was not very known and popular! Currently, dental offices and several international studies have shown the following:
- 2) **There is now lack of evidence to support the „dogma that bone should heal without being loaded“!** Meanwhile, even classical implant systems are inserted according to our surgery protocol, and the achievement of primary stability at a torque of 30 Ncm to 70 Ncm has become the most important criterion for dental implantation. For instance, dentists will no longer need to fear that the insertion of implants at a torque of 50 Ncm or 60 Ncm is not the state of the art procedure. However, there is a problem with „Global Player“ systems: the deformation of the implant during the insertion so that the implant can only be inserted at a maximum torque of 40 Ncm. With the one-piece and two-piece Champions, the problem can be solved. Regarding the two-piece implant, this implant type has a Shuttle, and the internal thread can be inserted at a torque of 70/80 Ncm, which does not lead to material wear.



**Fig.1:** In spring 1999, implants were inserted in the 1st, the 2nd and 4th quadrants. Within 10 days after the implantation, the impressions were taken and the implants were immediately loaded

with splinted and passive-fitted crowns. During ten years and after a parodontal treatment, except for the tooth 23 in the maxilla, the tooth 45 and the bridge 35-37 could not be preserved.

**Fig.2 and 3:** In 2010, multiple immediate implantations were performed in the maxilla. The implants could be immediately loaded with a splinted and passive-fitted supraconstruction only 10 days post surgery. After the maxilla had been treated with Implantlink, temporary material, the mandible was treated as well.



**Fig. 4-10:** MIMI® immediate implantations were performed in the 3rd quadrant and in regio 45. Before the final prosthodontic restoration could be fitted, the implant had to get stabilized and splinted (to avoid lateral shear forces) for 8 weeks. The treatment was successful, promoting natural regeneration. Preferably, I like to use hyaluronic

acid and collagen, and the combination of these two products provide for more rapid hard and soft tissue regeneration. Wherever possible, you should avoid using non-resorbable „partybreakers“ (because then, osteoblastic activity cannot occur) when performing a „socket preservation“! You can see the condensation in the area of the bifurcation 36, and all Champions achieved primary stability at a torque of 40 Ncm. Fig. 11 shows the radiological result a year after having cemented the crown 45.

In addition, the following theses have been reviewed:

- 3) **The thesis that bone needs to heal on the implants for at least 3 months in the mandible and for at least 6 months in the maxilla lacks support.** It is curious that the industry, opinion makers still believe that the healing time is reduced because they have improved the surface of their products. Wrong! In fact, the healing time can be considerably reduced because meanwhile, small-dimensioned implant sites are prepared for classical implant systems as well, and bone therefore no longer needs to „grow on“ titanium surfaces. In this way, their implants can achieve primary stability! The period of transition between primary osseointegration stability and secondary osseointegration phase just takes 8 weeks, independently of whether the required primary stability has been achieved in the mandible or in the maxilla and of whether the implantation has been successful.
- 4) Unfortunately, the concepts of **immediate loading and immediate restoration of implants** have been criticized by opinion makers led by the industry and even by some private health insurance companies who are unwilling to pay for the treatment even if the success of this current treatment method is at least equivalent to the success of conventional treatments! For several years, we have proven that the current treatments are successful in our day-day work in dental offices: for the correct indication and when the procedure is followed correctly, the success with immediately restored or loaded implants can be at least equivalent to treatment success with delayed restored or loaded implants. In fact, lateral shear forces such as micro- and macro-motions during the first two to eight weeks after surgery are to be avoided! It is very important that the one-piece implant gets stabilized during this phase before the final prosthodontic restoration can be fitted. During this phase, the patient is provided with splinted fixed temporary restorations, which are cemented, for example with Harvard cement. Single tooth gaps are restored immediately and inter-proximally with plastic material. There might be the following problem with one-piece implants: if the temporary restoration gets broken, the implant treatment will not be successful, and the patient will have problems with the implants. That is why the patient should participate actively: the temporary restoration should not break! There are less problems of this kind with two-piece Champions® implants.
- 5) **The dogma that the minimum distance between implants should be 2-4 mm has not been proven correct,** according to research. On the contrary: several, post-implantation (and reliable) documentations have shown: even an inter-implant distance of 0.5 up to 2 mm is not a reason for an implantation failure or inter-implant bone loss. In order to perform a successful implantation, as the example of my „Twin-implantation“ of two implants for a molar gap in 1999 showed, is the following: an intact, peri-implant nutrition is necessary. This means: the observed failures in cases where the distance between the implants was too small have been caused by other factors! Unfortunately, false interpretations have led to a false conclusion and to a false dogma! In these cases, bone loss or even necroses have been caused by an intra-operative periosteal removal or a periosteal injury and not by an inter-implant distance that is smaller than 2-4 mm, according to our experience.
- 6) **The dogma that you should avoid primary splinting of natural teeth and implants (without periodontitis) because of different resilience factors** is no longer true! However, there is one exception: splinting should not be carried out when the natural tooth is intruded. In this case, the tooth can no longer be preserved. An implant system with an intramobile element has not often been proven successful. If the natural tooth in a bridge is in a mesial position in relation to the implants, this tooth is a receptor, which means it serves as an organ of sense for the prosthodontic restoration. Over 10 years, success rates of hybrid bridges have sometimes been higher than success rates of only implant-supported prosthodontic restorations. Slight lateral motions (loosening degrees I and II) of teeth in combination with implants are very unlikely to cause problems with the prosthodontic restorations as long as the prosthodontic restorations are passive-fitted.
- 7) **The dogma that immediate implantations are to be avoided** because success prognoses are thought to be lower than those for delayed implantations is not true either. According to this dogma, infected or chronically inflamed bone structures should heal for 3-6 months before you can implant. Currently, with surgery techniques, the success prognosis for immediate implantations is as high as for delayed implantations. On the contrary, with such an unnecessary long healing time of several months, the patient may lose crucial structures, for example hard tissue and soft tissue structures. With appropriate materials such as conical triangular drills, bone condensers and modern implant designs, hyaluronic acid and cost-efficient collagen, we can avoid alveolar collapse, and we can insert primary stable implants only in healthy bone areas. As a rule, only one surgery session is necessary. In addition, hard tissue and soft tissue are protected to the maximum.
- 8) **Unlike what some dentists may still fear, it is not true that transgingival drilling causes epithelial cell penetration in the bone cavity and connective tissue encapsulation of the implants** because: connective tissue encapsulation of implants is caused by macro-motions and micro-motions within 2-8 weeks post surgery! Wouldn't the prevention of re-ossification because of the penetration of (no longer nourished) epithelial



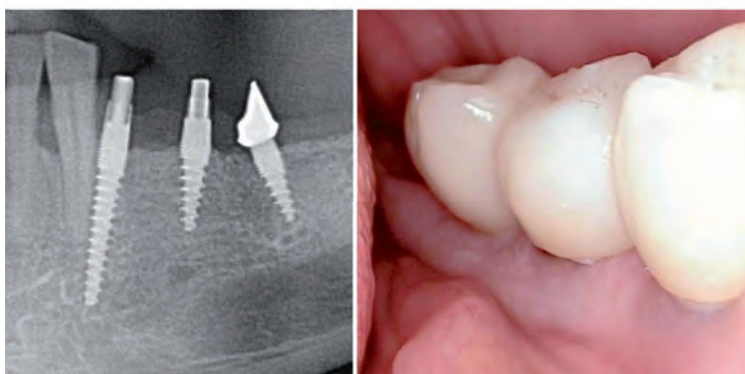
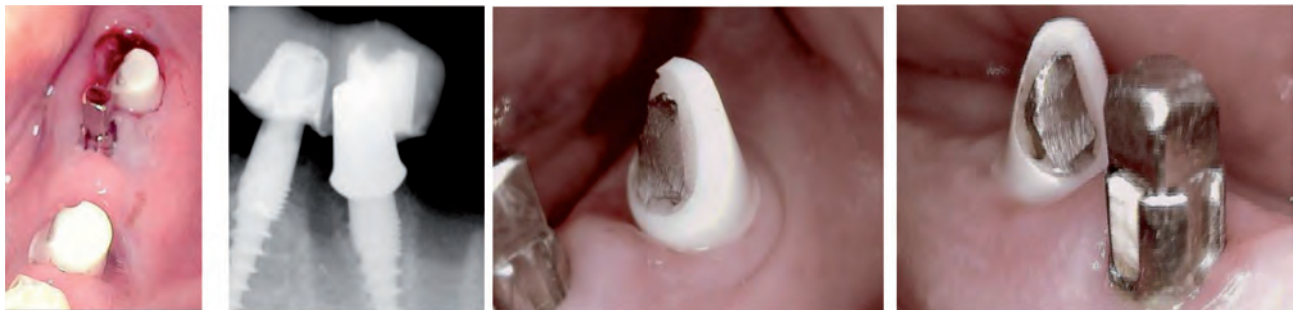
cells in fresh alveoli (for example, after a tooth extraction) contradict Nature? Evolution of Nature, about 40000 years ago, has an advantage over the about 80 year-old field of Implantology (Strock, Harvard University 1939)!

- 9) **Studies have shown that it is not correct that short and small-diameter implants are to be avoided and have a shorter shelf-life than long and large-diameter implants!** Several recent studies and scientific publications worldwide and also our observations and follow-ups in our dental offices for decades have shown that long or large-diameter implants are not more successful than short (length < 10 mm) and small-diameter implants. In fact, the dogma that there should be a large amount of titanium in bone is questioned, and professional associations should also change their views about it. Factors such as sufficient peri-implant nutrition and the prevention of iatrogenic periost injury will lead to higher long-term success rates for dental implants.
- 10) **In practice, the dogma that implants can just be inserted where the teeth were before and where the prosthodontic restorations must be fitted is not correct!** In fact, implants can be inserted from distal to mesial (for example, to avoid bone augmentations). A non-axial prosthodontic loading is unlikely to cause problems with the implants and the prosthodontic restorations even after decades! I must say that the implants that I inserted 15 years ago in augmented bone with alloplastic material were rather suboptimal after a few years. There were some complications, peri-implantitis occurred, and surgical/prosthodontic follow-ups were necessary!

However, implants that have been inserted in the patient's own bone as well as the supraconstructions have looked good even after more than a decade— there have been nearly no bone loss or dental esthetic problems. Long-term bone and soft tissue health and aesthetics have been improved.

Thus, the following dogma should be questioned as well:

- 11) **The dogma that augmentations should always be performed to provide a solid basis for the implant has been questioned!** Actually, performing a dental implantation according to MIMI is more beneficial for the patient, and optimal care for our patients is our priority. However, dentists are not paid less for a MIMI treatment than they are if they perform conventional implantations. Of course, we are not just paid according to the number of implant placements and the treatment time (as it is said in the „GOÄ“, the German medical fee schedule and the „GOZ“, the German scale of fees for dentists ), but we are paid according to quality and value! Although augmentations and sinus lifts cannot be avoided in a few cases, standard augmentations are often not necessary. Augmentations can lead to lower success rates of implantations instead of higher success rates.



**Fig. 12 and 13:** Clinical and radiological situation directly after implantation and condensation and cementation of zircon Prep-Caps

**Fig 14 - 17:** Eight weeks post surgery, the prosthodontic restoration, which was fitted with Implantlink Semi (available also in „Champions-Liga“), was removed. A year later, the clinical and radiological results were very good. Then, the crowns could be fitted (without the need of an afterburning of ceramics in the dental laboratory).

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