

Stefan Ihde

Principles of BOI



Clinical, Scientific and
Practical Guidelines to 4-D
Dental Implantology

DVD-VIDEO



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Springer

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With DVD

With 388 Figures and 8 Tables

Stefan Ihde, Dr.
Zahnärztliche Klinik
Dorfplatz 11
CH-8737 Gommiswald

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Clinical observation of unexpected and undesirable treatment outcomes provided permanent motivation for further research into the procedure of basal osseointegration per se and of pertinent implants, tools and treatment strategies. Cordial thanks to the team at the Gommiswald Dental Clinic, whose good ideas and commitment helped me keep up my motivation throughout all these years.

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August 2004

Stefan Ihde

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Authors

Dr. Stefan Ihde

Implantologist, Periodontologist
Zahnärztliche Praxis
Dorfplatz 11, 8737 Gommiswald
Switzerland
e-mail: dr.ihde@implant.com

Contributors

Dr. Zoran Aleksic

Belgrade School of Dentistry, Perio Dpt.
Dr Subotic str4
11000 Belgrade, Serbia and Montenegro
e-mail: draleksic@ptt.yu

Professor Dr. Vitomir S. Konstantinovic

Chief of Department
Maxillofacial Surgery of Stomatological Faculty
of Belgrade University,
11000 Belgrade, Serbia and Montenegro
e-mail: vskvita@eunet.yu

Dr. Florian Krass

Rigiblickstr. 117, 6353 Weggis, Switzerland
e-mail: softcare@gmx.net

Prof. Dr. Vojislav Lekovic

Belgrade School of Dentistry, Perio Dpt.
Dr Subotic str4
11000 Belgrade, Serbia and Montenegro
e-mail: vojalek@eunet.yu

Dr. Thomas Maier

Implantologist
Bahnhofstr. 7, 73447 Oberkochen, Germany
e-mail: dr.maier-zahnkosmetik@t-online.de

Nazir Zeciri

Dental Technician
Herrenackerstrasse 28, 8730 Uznach, Switzerland
e-mail: nzeciri@implant.com

Michael Zach

Attorney at Law
Eickener Str. 83, 41061 Möchengladbach, Germany
e-mail: info@rechtsanwalt-zach.de

English translation

Per N. Döhler

Triacom, Barendorf/Lüneburg, Germany

Mag. Wilfried Preinfalk

Medword, Vienna, Austria

Struggles and Successes

Implantology is, like chess, governed by the laws of Nature. We cannot see our opponent, but we know that she is fair, honest and patient. Adapted from Warrior of the Light: A manual by Paulo Coelho

1.1 Struggles

When too many people agree on the same subject, it is high time to call it into question. Few other areas of medicine are better characterized by this statement than dental implantology. Why? Because both academic “researchers” and practitioners focus their efforts solely on crestal implants. In other words, they completely ignore any designs or concepts other than screws and cylinders, which guide the masticatory forces, into bone areas that mainly consist of cancellous tissue. If the available vertical bone supply is insufficient, measures are taken to rebuild the morphology of the bone tissue – whether by transplantation, by augmentation or by induced growth. Unless aesthetic considerations play a major role, these modifications of the bone situation are performed solely to facilitate the use of crestal implants, which would be impossible to insert otherwise. In many cases, these adjuvant measures are considerably more time-consuming and more expensive than the patient can afford. Meanwhile, no implant treatment is performed *whatsoever*, and the patient is left without an adequate fixed restoration. At the same time, the focus of dental implant treatment tends to shift away from the dental offices as these adjuvant measures gain respectability, towards the specialists capable of performing them. Due to the additional cost of these adjuvant measures, many patients are unable to afford adequate implant treatment. The consequence is that their masticatory function cannot be restored in a truly comprehensive manner.

The implant technique of “basal osseointegration” (BOI) has been developed with a view to addressing the situations outlined above, among other problems. In this book we are going to explain why lateral access to the jaw bone should be the standard technique in dental implantology. Conventional implant designs can occasionally be used as additional treatment options.

Some dental “experts”, sharing neither the vision nor the experience of BOI users, have in the past raised vocal opposition to this system. It is not uncommon for traditionalists, who once rose to

fame by using specific methods, to eagerly oppose the obsolescence of their knowledge by obstructing progress actively. In their capacity as court-appointed experts, they can literally boycott new treatments for a long time.

Due to an almost religious belief in scientific medicine – it has been argued that this belief is a substitute for religion itself (Lütz 2002) – patients are often unable to inform themselves in a realistic manner about novel treatment modalities. Nevertheless, BOI implants have become increasingly popular in recent years. As a result of the high degree of patient satisfaction, the patients ultimately “vote with their feet”.

No doubt, treatment with BOI implants can only be performed and its outcome evaluated in a competent manner by users who have been thoroughly trained in the technique and are up to date on the current experience. Anyone rejecting the technique out of hand will of course never be able to acquire and master it. We shall therefore present the BOI technology in this book, demonstrate its practicability, and document its successful outcome based on specific case reports.

Dentists who perform BOI treatments are still required to have additional solid training. What we are currently observing is that more and more universities are becoming active in this field, having first acquired the technique themselves. Since the universities’ *raison d’être* is the propagation of knowledge, this development of course deserves praise. By contrast with most current teachings in the realm of crestal implantology, the propagation of knowledge about the real-life properties of bone and its behaviour play a prominent role in BOI. Of equally great importance are prosthodontic concepts and the teaching of how to restore the human masticatory function. Many universities were too late getting on the BOI train. One might well ask how this could have happened – several factors come to mind:

- A comprehensive concept of mastication is absent from the academic teaching curriculum. Some universities do not currently teach this field at all, while others teach quite divergent views.
- The teaching and practice of dental implantology is spread across several departments: prosthodontic

departments implant “simpler” cases, departments of oral surgery implant “more difficult” cases, and the maxillofacial surgeons are holding their own when it comes to maintaining their niche in maximally invasive bone transplantations. Even orthodontists occupy a small region within dental implantology related to enossal anchorage. Needless to say, all these departments fight each other for access to the few patients and to third-party research grants.

- In a way, BOI implantology is a part of all of these subfields, an interdisciplinary endeavour, focussing on functional therapy and with a strong surgical aspect. Psycho-social and economical aspects also play a role: Not only is the BOI procedure the fastest and safest treatment procedure in dental implantology today, it is also the cheapest.
- Some universities increasingly realize that post-graduate instruction in BOI implantology is an immense field that might very well generate huge amounts of financial resources. Students from all the sub-disciplines cited above need some training in BOI implantology – and ultimately all active or future dentists.

During my BOI-related travelling activities, I have found that fellow dentists in the ex-Communist countries are much more familiar with the basics of bone physiology and mastication therapy than dentists in the former Western countries. However, interdisciplinary training seems to be scarce at some institutions.

According to Scortecchi (2001), 99% of patients not eligible for treatment with screw implants can be treated by BOI without bone transplantation. This high success rate is in accordance with our own experience.

At present, insurance companies are beginning to find out that BOI treatment is by far more safe, faster and cheaper than conventional bone augmentation followed by crestal implantation. On the other hand, the appearance of BOI on the stage means that more patients will undergo treatment more readily: a great number of patients who have toyed with the idea of implant treatment before but shied away from bone transplantation or prolonged chair times are beginning to see a realistic chance of obtaining fixed restorations on implants within an acceptable timeframe.

It is necessary and fair to mention that disk implantology and the BOI technique, like all dental implant techniques, went through an early phase of treatment failures with implants and prosthetic superstructures being lost. The same learning curve had to be mastered in the development of all other implant techniques or, for that matter, any other medical treatment. Many problems in connection

with basal osseointegration arose from the fact that a number of views on procedures, beliefs and treatment approaches were adopted from untested crestal implantology. They were adopted without knowing the reasons why the original technique had actually worked, or not worked, in specific cases. In our view, some of the “rules” that evolved from the literature on crestal implantology are definitely wrong. Some of them cannot be generalized but are based solely on empirical observations that may possibly apply to crestal implants. Anyway most of them had to be revised in the past decade.

1.2 Other Major Considerations

Learning the surgical procedure is not difficult *per se* if good instruction is provided. Trainees have to need to shake off several prejudices that are considered widely to be facts.

1. A common misconception today is that the lateral osteotomy for BOI cannot be created with the same low-speed instruments as commonly used in crestal implantology. Regardless, however, there are great advantages in using high-speed instruments and ultrasonic tools not only on teeth, but also in the bone.
2. The claim that the temperatures associated with high-speed instruments will affect bone healing is defeated by clinical experience.
3. The concept of immediate loading with BOI implants is continually discussed under false premises, as most concepts of crestal implantology rely on unloaded osseointegration of implants. Crestal implants, especially in the maxilla, are inserted in bone areas that consist mainly of cancellous tissue. These areas are not capable of accepting and transmitting masticatory loads in the early phases of treatment. This only becomes possible once the bone tissue has been adequately conditioned by the endosseous implant surface. Chapters 9 and 23 will provide the reader with the necessary background to weigh up the pros and cons of immediate loading more realistically.
4. The claim that implant placement is contraindicated in periodontally involved areas is also based on false premises. In crestal implantology sterile insertion is a major requirement since no gap is left for suppuration. Pre-existing residual osteitis within the bone or micro-organisms introduced during the insertion can bring treatment with crestal implants to an end very quickly. BOI implants, by contrast, are highly resistant to infection. The reader is referred to Chapters 8 and 23 for a detailed discussion of this issue.