Teeth within an hour: A ticking time bomb

By Dr. Göran Urde, Sweden

In my lecture at this year’s EAO meeting, attendees received an overview of over 50 years of working with implants and why we did it in certain ways back then and why we do it differently today. When I started placing implants, they were only for specialists in oral surgery and prosthetics. Periodontists were not even allowed to listen to our lectures. One also had to be thoroughly trained if one wanted to purchase implants. Companies kept records of the clinician’s success rates and if he or she had a higher than normal failure rate, they showed him or her the door to figure out alone what had gone wrong.

In some instances, the warranty did not even apply if the dentist was not properly trained if one wanted to purchase implants. Later, everyone was allowed to take a course and to place implants. Often, these were just weekend courses after which the dentist was supposed to be a fully qualified surgeon and prosthodontist and knew everything, including single-tooth restoration, full-arch rehabilitation of severely resorbed jaws with bone grafts and immediate loading concepts. It was totally absurd. To place implants, one needs to be well trained—learn to walk before one starts to run.

To my delight, I see that more and more implant companies are abandoning weekend courses and instead offering high quality courses over a longer period. Attendees have to treat patients under supervision and companies even offer mentor support, which means clinicians are receiving guidance in conducting their treatments. The best courses are of a general nature, where the sole purpose is to train dentists to place implants and do this well and not how to do it with a specific implant system.

One thing that worries me a great deal is the copious cat versions of implants that are being marketed to less experienced dentists who cannot determine what a good product is. I always tell my audience to never treat patients differently to how they would treat their own family. The unfortunate thing is that I often see members of the audience looking down because they feel admonished. They do not understand that they get what they pay for and that failures are very costly and can hurt both their reputation and patients.

Another topic that gets me going is the marketing of new teeth in an hour. Patients that for decades have not taken care of their natural dentition are now being treated in accordance with concepts like immediate loading. Within an hour, any remaining decayed teeth are removed and replaced with implant supported crowns and bridges in the belief that the patients will start taking care of their new teeth. Unfortunately, this is not realistic.

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The use of CBCT and CAD/CAM techniques in complex implant-supported rehabilitation of maxilla—Part I

By Dr. Tomasz Smigiel, Poland

Introduction
Patients who visit our clinic and wish to receive prosthetic treatment are frequently unaware of the possibilities that modern medicine has to offer. Neither are they aware of the fact that implantological treatment is not a ‘one-day’ treatment and that the integration of implants with bone tissues takes some time. That time can range from several weeks to several months. What they are also unaware of is the fact that after some time from the moment the teeth have been extracted, the bone will atrophy and hence it is often necessary to perform augmentation procedures first before dental implants can be placed.

Therefore, a complete treatment may last from several months to up to a year. As a result, the temporary prosthetic restoration, which the patient will have to use till the end of the treatment, is recommended. It is important to notify the patient that following augmentation procedures, using bone blocks and biomaterial, it is inadvisable to use a functionally unstable prosthesis as it may damage the augmentation material and damage the prognosis connected with the graft’s integration.

As a result, in such cases one may apply a temporary prosthesis based on telescopic crowns as the whole load will be transferred onto teeth or implants, not the mucosa. Telescopic prostheses are a type of prostheses that are not functionally unstable, unlike ordinary acrylic prostheses or some other skeletal types.

Case report
A 62 year old patient with residual dentition used an ordinary acrylic prosthesis. The main reason why the patient wished to change the prosthesis was discomfort due to the fact that the palate was covered up while the prosthesis was movable. In order to obtain maximally precise diagnostics, a demonstrative panoramic photograph was taken as well as CBCT.

During the process of treatment planning, a few proposals for prosthetic solutions were presented, including permanent and temporary restorations, based on existing teeth as well as implants of various combinations. However, due to significant atrophy in the lateral part and a low lying fundus of the left and right maxillary sinus, it appeared necessary to perform augmentation procedures (sinus lift), in order to make implantation possible. It became clear that treatment in this case would require more time and hence in the period between procedures, from the moment treatment began till the time the final prosthesis was accepted, the patient should be provided with a convenient temporary restoration. Being fully aware of advantages and disadvantages of different solutions, the patient decided on a restoration based on eight implants with a combined mounting and the use of screw-based abutments and telescopic crowns of implants. Application of telescopic crowns at the front of the maxilla allowed us to make a very convenient temporary restoration, partial prosthesis based on four telescopes.
Each treatment should start with a well-prepared plan. For most pa-
patients appearance after treatment will always be very important that
is why an intraoral analysis must be made in order to assess the static
structure of the mouth, as well as an analysis of the lips’ dynamics along
with teeth exposure during speaking
and smiling (Figs. 1 & 2).

We analysed the aesthetic aspects
in a way that enables us to reach
an optimal balance between white
(teeth) and pink (gums) aesthet-
ic. Of course, in toothless patients,
one should take note of the fact that
teeth setup as well as reconstruction
of atrophied tissues will constitute a
support for the lips. Such an analy-
sis may be made on the basis of a
model that the patient uses. In
this case, first sanitation of the max-
illa had to be performed, next a tem-
porary acrylic prosthesis was made.

In the next phase, implants were
inserted. In compliance with the
results of the CBCT study, a sinus
lift procedure was performed with
a simultaneous implantation in
the region of lateral teeth. Eight
implants were inserted, raising both maxillary sinuses at the same time. After six weeks, the
implant exposure procedure was

Because of the fact that implants
were partially anchored into the
bone at the lateral section, partially
within the augmentation mate-
rial while primary stability was
achieved, we decided to expose
implants at lateral sections without
occlusal load so as to perform the
so called bone training with a view
to improving the condition of the
bone being regenerated. An impres-
sion was taken (Fig. 7 & 8) for the
positional model and for the prepa-
ration of the temporary prosthesis
based on telescopes.

The model was scanned while the
abutments were made ready in
such a way that they could serve as
telescopic crowns, also in the final
stage (Fig. 9). Primary and secondary telescopic
crowns were designed on the abut-
ments (Figs. 10 & 11) on the assump-
tion that secondary crowns had
been made ready twice; that is, for
the sake of temporary prosthesis
and at the same time for gluing it
into the final construction (Figs. 12 & 13). Abutments were mounted on
implants by means of Pattern Resin
(Figs. 14 & 15) in such a way that the
position does not change during

A temporary skeletal prosthesis,
based on four telescopes, shall be
placed on such a foundation (Figs.
16 & 17). Primary telescopic crowns
were glued last (Fig. 18).

Secondary telescopic crowns, made
from acetal by means of the CAD/
CAM virtual designing method,
were tried on primary crowns (Fig.
19). Figures from 20 to 22 present
a macroscopic view of zirconia pri-
mary crowns testing and acetal sec-
ondary crowns.

At that stage, our patient received a
temporary prosthesis, while lateral
implants remained unloaded (Figs.
23 & 24). In the second part of the ar-
ticle, we will present the designing
process (Figs. 25 & 26) along with
the process of manufacture of the fi-
nal construction made from TRINIA
material with glued zirconia crowns
as well as veneering by means of
porcelain composite material.

Work completed in cooperation with
Tibi-Dent laboratory in Warsaw, Po-
land.

Editorial note: This article is the first
one from the two parts series. Part II

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Fig. 9: Scanned abutments at the frontal section for the sake of design-
ing telescopic crowns.
Fig. 10: A design of primary telescopic crowns from zirconium oxide
Fig. 11: Transparency on to make the thickness of the walls of the crowns
visible along with the position of the abutments.

Fig. 12: Secondary telescopic crowns made from ac-
tal resin prior to being glued into the construction.
Fig. 13: Primary telescopic crowns made from zirconia,
packed and designated.

Fig. 14: Transfer of abutments from the model to the
mouth by means of pattern resin.

Fig. 15: Tightened abutments prior to the mounting
of primary telescopic crowns.

Fig. 16: Temporary telescopic prosthesis, of skeletal
Type.
Fig. 17: Temporary telescopic prosthesis of skeletal
Type. inside of the denture.
Fig. 18: Mounted primary telescopic crowns made
from zirconia, an abutments.

Fig. 19: Test of secondary telescopic crowns made
from acetal resin.
Fig. 20: Primary zirconia crowns in situ
(right-hand side).

Fig. 21: Primary zirconia crowns in situ (left-hand side)
together with a secondary crown made from acetal
resin as a try.

Fig. 22: A set of telescopic crown (palatal view) prior
to being installed into the skeletal prosthesis.

Fig. 23: Palatal view of functional telescopic crowns
and exposed implants.

Fig. 24: Telescopic denture of skeletal type enables the patient to func-
tion comfortably during the transitory period. It also enables checking the aesthetics and functionality before the final crown based restoration
is finished.

Fig. 25: Design of the final restoration.
Fig. 26: Scan of the temporary prosthesis (in blue) to visualise the space
needed to make porcelain crowns.
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