Introduction

Function and esthetics of the orofacial system are equally important throughout all age groups. This applies in particular to elderly patients with dentures. They want to feel confident and comfortable – for a stable and well-fitting restoration is a key to active participation in a social environment. The ability to laugh and speak without restrictions and to enjoy culinary delights is largely determined by the quality of the prosthetic restoration.

Even if the requirements for prosthetic restorations are defined clearly, many patients do not – or too late – opt for implant-supported rehabilitations as they shy the costs, time and especially the surgical intervention. Often, elderly patients are also compromised due to their medical history, which is why implant therapy can only be carried out with special precautionary measures. Removeable implant-supported restorations are appropriate in clinical situations with edentulous jaws – often over years – and the related atrophies, in combination with increasingly impaired dexterity which may hamper adequate cleaning. Meanwhile, this treatment option is considered the preferred restoration concept. Various solutions ranging from two to four implants with different attachment options and loading concepts – depending on the clinical situation – can be employed here.

The SynCone concept (see also page 28ff) developed by Dr Dittmar May and clinically proven for ten years now, makes ideal use of the features of the Ankylos system in providing a cost and time efficient solution for edentulous patients in particular. Here, the prosthesis is anchored by telescopic crowns and splinting is achieved indirectly by the prosthesis. Therefore, in order to provide sufficient stability, reinforcing the prosthetic base with a cast metal framework is recommended. A prospective study with a total of 122 patients and a success rate of 94.06 percent and an average observation period of 79 months has shown that forgoing direct splinting works even when the implants are loaded immediately, and that osseointegration is not compromised despite the apparently less rigid splinting of the newly placed implants.

Of course, the combination of SynCone and immediate restoration is virtually unbeatable in terms of attractiveness for the patient, however, the single-stage protocol may not always be the most sensible approach.
PATIENT CASE

The following example of a nearly 90-year old female patient at the beginning of treatment, demonstrates that the desire for high-quality dentures is not a question of age. When the patient presented with her wish for a new restoration, she was most upset by the limited fixation of the mandibular prosthesis. The highly sensitive but also very sprightly lady mainly suffered from restrictions of speech.

The clinical and radiological diagnosis of the mandible showed highly atrophied posterior regions, whereas the anterior interforaminal region showed sufficient space to at least place three Ankylos implants of adequate dimension. The reduced masticatory forces of the 90-year old patient appeared sufficient to provide support for a delayed restoration with SynCone. Due to the advanced age of the patient and pre-existing general disorders, Dr Beata Simon wanted to discuss the feasibility of implant placement with an experienced colleague. She approached me with her case, as she knew me from various lectures and workshops specifically on the SynCone concept. Together we planned the three interforaminal implants in combination with a removable and metal-reinforced prosthesis anchored on SynCone. To save the patient having to undergo major grafting procedures, and in view of the meanwhile reduced masticatory forces due to the age of the patient, it was decided to accept three easy to place implants as being sufficient to provide support, although four implants are indicated by the manufacturer for stabilizing restorations in the mandible. Due to the physical and psychological limitations of the patient it was decided to refrain from immediate loading of the implants – a wise decision as was discovered soon.

The implant placement of the three Ankylos implants was performed as outpatient care and minimally invasive. The implant sites were prepared according to the manufacturer’s recommendations, the implants were placed and sealed with a cover screw (Fig. 1). The soft tissue was repositioned and carefully sutured. Due to the advanced age of the patient one could not necessarily assume that the patient would always comply with the required oral hygiene measures. Hence, the therapeutic concept followed was as conservative as possible.
One day after surgery the patient again came to the practice for a control visit and presented with a large hematoma which extended nearly across the entire chin region extraorally – an unusual complication to this extent, considering the rather atraumatic protocol (Fig. 2). It quickly became apparent that the patient had taken acetylsalicylic acid medication after surgery, contrary to recommendations, which was certainly the reason for the extensive hematoma. The further healing process was inconspicuous, there was neither pain nor swelling. Recalls were initially at short intervals, and the implants were uncovered after approximately three months. A new prosthetic restoration with metal reinforcement was fabricated in the laboratory based on SynCone abutments.

Next to regular clinical and radiological inspection of the implants, the fit of the prosthetic restoration is checked and lined if required (Fig. 3a and 3b). Meanwhile the patient has reached the age of 96 and enjoys every day with her securely supported and firmly anchored prosthesis. In her own words, she is highly delighted by the excellent chewing abilities and the fact that she can speak again without her speech being impaired – something she had missed considerably (see page 35 for the extensive interview).

All in all, this is an impressive example of how we can restore a high degree of quality of life, also for the elderly, with little effort and correct assessment of the overall situation – in this case by the excellent cooperation between an experienced dental surgeon and a prosthetically active dentist, even across continents.

Tips by the user:

**Avoid mistakes**

**Avoid foreign matter in the caps**
Foreign matter in the caps prevents the caps from being placed in their final position on the abutments.

**Shorten margins**
SynCone dentures are exclusively implant-supported. The base must be ground down sufficiently, functional margins need to be removed. The maxilla is prepared without a palate plate.

**Uncover the secondary cones**
Uncover the edges of the secondary cones in a circular manner. Relieve the base, if required, in the center region of the alveolar ridge and especially distally at the end caps.

**Harmonize occlusion**
Uniform and simultaneous loading is desirable with static occlusion to avoid levering.

**Plan for metal reinforcement**
A reworked old prosthesis is usually a long-term temporary denture. As a rule, the acrylic resin used for the prosthesis is not suitable for absorbing mastication forces long-term. For final restoration it is important that the SynCone caps are bonded to a stable cast metal framework.

**Compensate the divergence of posts**
Angled abutments are available in 7.5 degree, 15 degree, 22.5 degree and 30 degree to compensate the axial divergence of the implants to give a joint direction of insertion for the SynCone abutments. If necessary, check parallelization with the parallelometer using an alginate impression.

**Select correct abutment height**
The height of the abutments should show a uniform level. The “gingival height” of the abutments must be selected such, that all the cones are placed supragingivally.
Liselotte Sterra was a guest at the DENTSPLY Friadent World Symposium 2012 in Hamburg and followed the lecture of Professor Romanos.

**iDENTity** Were you not afraid of pain and the surgical intervention?
**LISELOTTE STERRA** No, I felt nothing because of the anaesthesia.

**iDENTity** Restoration with SynCone is a special concept. Did you specifically decide on this concept?
**LISELOTTE STERRA** No, I left that to the two dentists. All I wanted was a firmly seating prosthesis which was easy to clean. My brother was given a new prosthesis by the mobile dentist who visits the retirement home. But it does not fit properly because his jaw bone is atrophied, as the dentist said.

**iDENTity** But with you, everything is OK?
**LISELOTTE STERRA** Perfect, both of them really did a good job. But there is one thing I would like to add: one sees more and more advertisements in the newspapers for implant treatment. I do not think that is good, that is not a serious approach, because this won’t let you detect if someone’s an expert or not. My neighbor is a retired dentist. He says that there have already been many complaints because things were not done properly.

**iDENTity** Ms Sterra, many thanks for the interview. We wish you many, many more years of health and joy with your prosthesis.

**BOOK TIP**
Immediate loading of implants represents a challenge for many dental professionals - especially in highly demanding cases. Based on 15 years of clinical experience, most of which were spent working with Ankylos, Professor Dr Georgios E. Romanos describes useful and practice-relevant guidelines and techniques in his new book “Advanced Immediate Loading” (Quintessence, ISBN-No.: 978-0-86715-491-7). Read more about successful long-term results with this treatment concept – even in edentulous jaws, grafted bone or simultaneous sinus floor elevations ...
References
Spanning generations – the Ankylos SynCone concept

Literaturverzeichnis
Generationen übergreifend – Das Ankylos-SynCone-Konzept


