

# Possible applications of a new implant system

Dr. Dr. Martin Keweloh, Dr. Hans-Georg Rollny, Jürgen Dieterich Zahntechnik

- Dr. med. Dr. med. dent. Martin Stefan Keweloh, Facharzt für Mund-Kiefer-Gesichtschirurgie, Wetzgauer Str. 62, 73557 Schwäbisch-Gmünd, www.praxisklinik-mkg.com
- Dr. Hans-Georg Rollny, Praxis für Zahnheilkunde, Ackergasse 9, 73525 Schwäbisch Gmünd, www.dr-rollny.de
- Jürgen Dieterich Zahntechnik, Spinnerei 48, 71522 Backnang, info@dieterich-zahntechnik.com

PRAXISKLINIK  
MKG

Dr. Hans-Georg Rollny  
Praxis für Zahnheilkunde

JÜRGEN DIETERICH  
ZAHNTECHNIK

## Task definition

This evaluation is intended to demonstrate the use and suitability of a new endosseous implant system under clinical conditions. The implants are surgically placed in the partially edentulous or edentulous jaws of patients for functional and aesthetic oral rehabilitation. Subsequently, the prosthetic restoration with single crowns, bridges, partial or total dentures is carried out. The procedure was documented and evaluated in three phases, preoperative - intraoperative - postoperative. In the preoperative phase, the initial situation was recorded with radiological findings and a treatment plan was drawn up. Different indications, such as direct implantation after extraction, late implantation or in connection with direct or previous augmentation were considered in the patient selection. During the intraoperative phase, the implants were placed in a first step and subsequently left in the patient's mouth for several months for osseointegration. In the second step, the treated region was opened up again in order to subsequently shape the soft tissue with healing caps. Finally, the patients received prosthetic treatment in the post-operative phase. As a result, the prosthesis

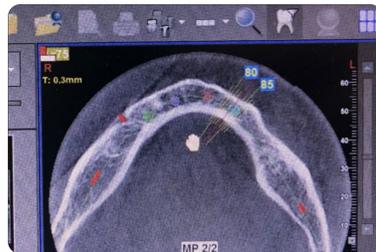
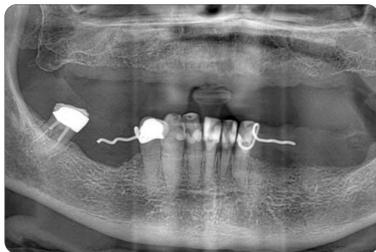
was complete and the treatment was successfully completed. All steps had to be documented in writing, radiologically and photographically. In addition, the cases included were accompanied and documented over the following period.



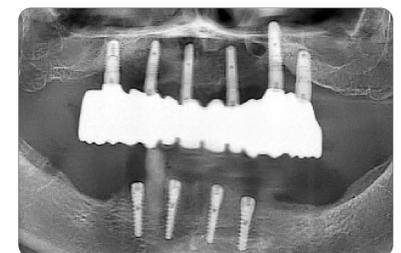
## Implementation

example

Patient female, 74 years old, smoker. Lower jaw edentulous after removal of teeth not worth preserving immediately before implantation. After local anaesthesia and before implantation, teeth 43/41/31 were extracted. After the ridge incision and preparation of the drilling positions, the pilot drillings (1.5mm) for the implants were made with the help of a drilling template. All further drilling was carried out with the drill belonging to the system according to the drilling protocol corresponding to the implant diameters and lengths. Extension drillings with the final drills in ascending diameter, as well as the corresponding countersinks. With the inserter, the implants were placed slightly subcrestal (approx. 0.2mm) as intended. The primary stability was monitored by torque control during insertion. The cover screw loaded with chlorhexidine gel at the coils was screwed in. Bone chips were deposited on the implant shoulders, which are located deeper in the vestibular region. These were obtained by collecting the drill chips produced during the milling of the implant gallery. No mobilisation of the soft tissue was required for wound closure, an artificial membrane was not used. The radiological control shows a prosthetically ideal positioning of the implants.



The following implant sizes were used: regio 44, 34 - ConeConcept 38-115, regio 42, 32 - ConeConcept 33-130. A healing time of at least 4 months was planned. For the period until the prosthetic restoration, the patient wears an interim replacement in the form of a total lower jaw prosthesis. The area of the implants was taken into consideration and left out during the fabrication. The exposure was carried out 4.5 months after the implantation by exposing the soft tissue above the cover screws. Healing caps of size S were used in appropriate heights adequate to the thickness of the mucosa. Osseointegration was checked by means of a knock test after evaluation of a previous X-ray control. Subsequently, the mucosa was applied to the healing caps with middle sutures. After a short regeneration period of the mucosa, the impression was taken. First the healing caps were unscrewed, removed and marked according to their position. Then the impression posts of sizes S and M were screwed in hand-tight. The impression caps for closed impressions could then be easily attached. The impression was taken using a customised standard impression tray and an impression material with a high final hardness. After curing, the impression was removed without any problems and the impression caps were securely anchored in it. The production of a master model was carried out with model implants belonging to the system on which the further working steps were implemented in the laboratory. For the first try-in, the 4 telescopic primary abutments were milled in the laboratory using the Ti ConeConcept CAD CAM system from the abutments Ti ConeConcept CAD CAM belonging to the system and produced with a plastic rail for precise insertion. First the remaining tooth 43 was removed. Afterwards the try-in was carried out without any problems and completely free of tension. The mucosa was found to be in perfect condition at the next try-in appointment. With the bite template, which was also delivered, a jaw relation determination was carried out. Until the next try-in appointment, a metal framework with the secondary crowns as well as receptacles for the friction elements were produced. Above the secondary framework, an individually fabricated complete denture with activatable friction elements (Sitec) was first worked up in wax. After a successful try-in, the complete prosthesis could then be finished in the laboratory. At the final insertion appointment the patient's primary abutments were inserted and fixed with the prosthetic screws at a torque of 25Ncm. The screw channels were covered and closed with composite material. The removable prosthesis found an excellent hold on the telescopic implant abutments and can be easily removed and replaced by the patient for daily cleaning and care.



## Conclusion and Outlook

On the basis of this case study an appealing restoration is presented, even if the initial situation is not easy. An optimum result was achieved in terms of aesthetics, function and oral hygiene. The RatioPlant® ConeConcept implant system offers a selection of implants and prosthetic components for many situations. With the help of the clearly arranged and colour-coded RatioPlant® ConeConcept instrument tray, the implants could be inserted in a time-saving and situation-specific way. The use of CAD CAM elements allows the safe, precise and aesthetic implementation of many prosthetic indications, both for fixed and removable solutions.

The follow-up documentation of numerous ConeConcept case studies prove the satisfactory application and underline the success of the well thought-out implant system.