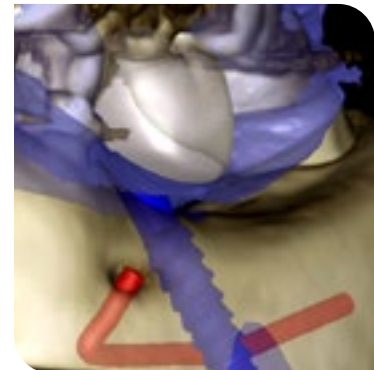
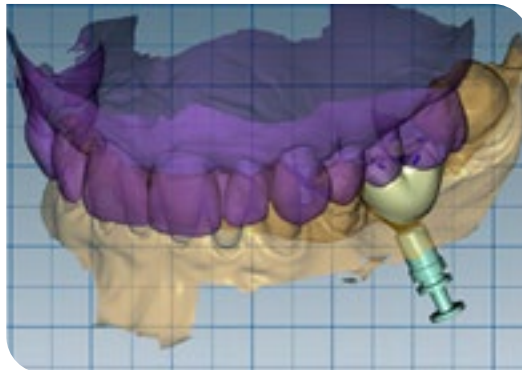


BIONIQ CLINICAL CASEBOOK



The LASAK [BioniQ implant system](#), highlighted in this clinical casebook, prioritizes both simplicity and effectiveness. It meets the rigorous demands for long-term functionality and esthetics in dental implantology. This contemporary system provides versatile instrumentation, accommodating both freehand and [guided surgical techniques](#).

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DELAYED IMPLANTATION AND IMMEDIATE LOADING IN A TEENAGER IN THE ESTHETIC ZONE



Doc. MUDr. Martin Starosta, Ph.D.
(Czech)

- Dr. Martin Starosta completed his dental education at Palacky University in Olomouc, Czech Republic, followed by a residency at the Clinic of Stomatology, University Hospital Olomouc.
- In 1999, he was appointed as a forensic expert in forensic dentistry.
- Dr. Starosta assumed leadership of the Department of Dentistry at the University of Ostrava's Faculty of Medicine in 2023, while continuing to operate his private practice in Olomouc.
- He is a member of the Committee of the Czech Periodontology Society and belongs to international organizations such as the European Federation of Periodontology (EFP) and the International Team of Implantology (ITI). Dr. Starosta regularly contributes to his field through professional reports, scientific articles, and textbooks, and is a respected speaker at conferences both in the Czech Republic and internationally.

ANAMNESIS

An 18-year-old female patient sought treatment for a persistent fistula on tooth 21. The issue stemmed from a bicycle accident five years before, which had injured her upper lip and subluxated the affected tooth. Initially, the soft tissue was sutured, and the tooth repositioned, with follow-up care provided by her dentist. A year after the accident, the patient noticed discoloration of the tooth, prompting a series of endodontic treatments. Due to the tooth's increased mobility, it was stabilized using a composite splint connecting it to the adjacent teeth.

1 Initial situation: The irregularity of the smile line was caused by a deformation of the lip due to trauma.



2 A chronic fistula in region 21. The blocked tooth 21 with a different discoloration. The intraoral radiograph 21 confirmed incomplete endodontic treatment and partial root resorption.



3 After extraction and excochleation, the extraction wound was revised. The vestibular wall of the socket was preserved except for the apical part. The tooth bed was only filled with an antibiotic-containing collagen cone.



4 The extracted tooth was used as a temporary restoration. The root was cut approximately 2 mm below the CEJ so that this part was embedded in the soft tissue. The crown was cemented to the adjacent teeth with composite.

5 After 14 days, we checked the healing and fixed the tooth again with a multi-strand wire from the palatal side.



6 Situation after one month. Immediate loading of the implant was planned. The preliminary impression was used to fabricate a temporary crown.



7 After removal of the crown: a perfectly epithelialized extraction site and preserved interdental papillae. The wire splint with which the dental crown had been temporarily fixed was temporarily retained as a control element for inserting the implant.



8 The mucoperiosteal flap was lifted palatally and partially mobilized vestibularly. A 14 mm long [BioniQ implant](#) from LASAK with \varnothing 4 mm was inserted and a temporary abutment was attached after removing the implant carrier.

9 No problems occurred at the one-month follow-up. The temporary prosthesis was integrated into the surrounding tissue and the esthetics of the soft tissue were preserved.



10 Four months after implant placement and immediate loading, the temporary crown was removed. An all-ceramic crown was fabricated in the laboratory.



11 The patient's smile at the recall after three years. Minimally invasive surgical procedures and preservation of the surrounding tissue made it possible to achieve the best possible esthetic and functional result.



12 The X-ray after three years also shows a healed socket without resorptive changes.

IMMEDIATE IMPLANTATION AND MINIMALLY INVASIVE SHAFT-SEAL TECHNIQUE



MUDr. Vaclav Veselsky
(Czech)

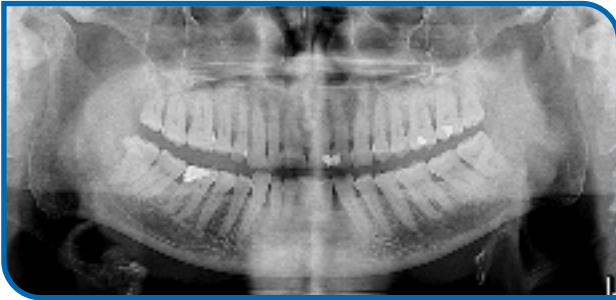
- Dr. Vaclav Veselsky completed his dental education at Charles University in Hradec Králové, Czech Republic, establishing a strong foundation for his career in dentistry.
- From 2008 to 2011, he honed his skills in the Department of Oral and Maxillofacial Surgery at the hospital in Zlín, gaining valuable experience in complex dental procedures.
- Since 2011, Dr. Veselsky has been practicing at EDENT s.r.o., a private clinic in Zlín specializing in comprehensive dental care. This practice not only serves patients but also functions as an accredited center for advanced training in dental surgery and pediatric dentistry, allowing Dr. Veselsky to contribute to the education of future dental professionals.

ANAMNESIS

A 66-year-old patient sought treatment at our practice following an acute fracture of his intact upper right first premolar (tooth 14). The patient, in good general health, was not on any long-term medication and was a non-smoker. After careful assessment, we proposed an immediate implant placement using a minimally invasive Socket-Seal technique combined with the “poncho” technique.

The procedure began with a gentle extraction of the fractured tooth, taking care to preserve the integrity of the alveolar bone. We then placed a 10 mm long BioniQ Tapered implant with a 4 mm diameter in the space previously occupied by the right root. To support optimal healing and integration, we used LASAK's [OssaBase-HA](#) for augmentation around the implant site.

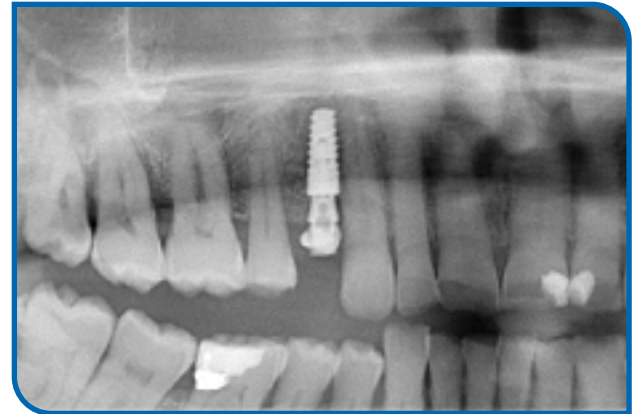
1 Initial X-ray findings prior to acute immediate implant placement in region I4 due to a MD tooth fracture.



2 The two-root tooth was carefully extracted. A 10 mm long, \varnothing 4 mm [BioniQ implant](#) was then inserted in the space of the former right root. The vestibular part was augmented using [OssaBase-HA](#).



3 "Poncho technique": Sealing Socket Abutment using the A-PRF membrane and STANDARD abutment.

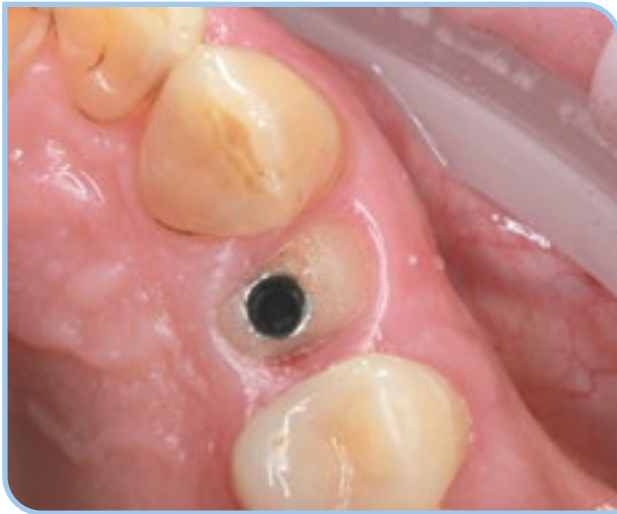


4 Control image after implantation.

5 Situation after five months: after unscrewing the Sealing Socket Abutment, the soft tissues have healed very well, the emergence profile of the soft tissues looks exactly the same as with the original dental crown.



6 The implant stability after five months shows ISQ 78.

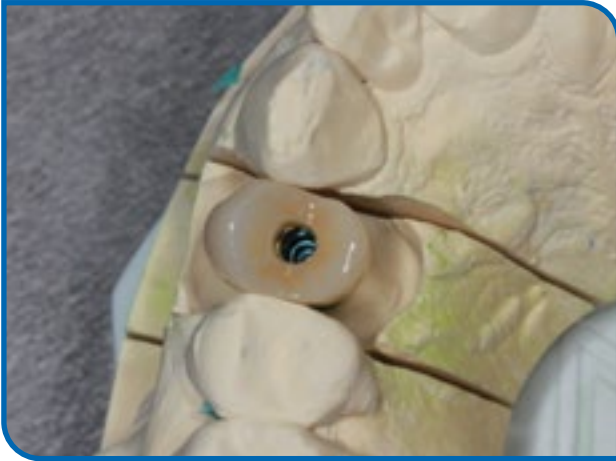


7 The beautifully shaped soft tissue around the Sealing Socket Abutment after 5 months (occlusal view).

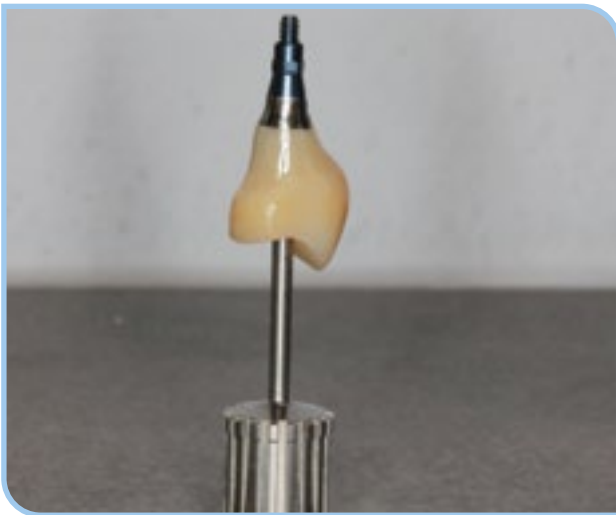


8 The beautifully healed and shaped soft tissue around the Sealing Socket Abutment after five months from a vestibular view.

9 The final dental crown on the master model.



10 The final dental crown prepared for trial in the patient's mouth (frontal view).



11 The final dental crown prepared for trial in the patient's mouth (side view).



12 The final crown placed in the patient's mouth in region I4.

BIONIQ GUIDED SURGERY IN CASE OF LOW BONE VOLUME



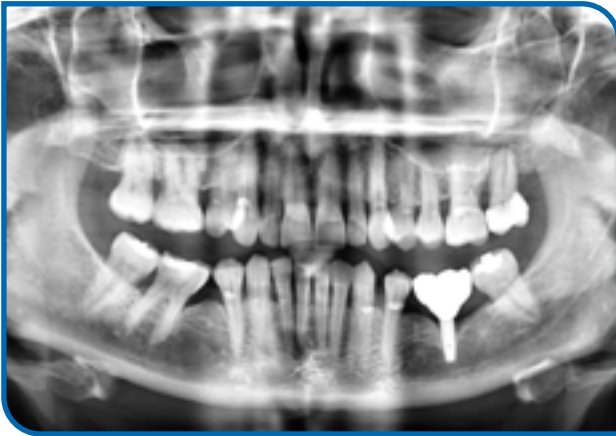
MUDr. Pavel Hyspler
(Czech)

- Dr. Pavel Hyspler completed his dental education at Charles University in Hradec Kralove, Czech Republic, laying the foundation for his distinguished career.
- He gained diverse experience during his residency, dividing his time between a private practice and the Department of Stomatology at Prague University Hospital.
- In 2009, Dr. Hyspler's expertise and leadership skills were recognized when he was appointed head of the Department of Stomatology at Military University Hospital Prague.
- Beyond his clinical responsibilities, Dr. Hyspler actively contributes to the field of dentistry through product development and research projects. He regularly shares his findings through professional reports and as a speaker at conferences both in the Czech Republic and internationally.

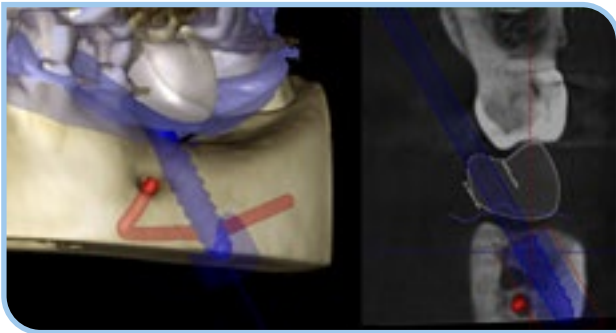
ANAMNESIS

A 52-year-old female patient sought treatment for complications with an implant at the site of tooth 36. The implant, placed approximately six years earlier at another practice, had begun to show signs of loosening. An OPG revealed significant bone loss around the implant, indicative of peri-implantitis. Given the extent of the damage, we decided to remove the failing implant and excochleate the defect. After a three-month healing period, we performed a CBCT scan to plan a new implant-supported restoration. After careful consideration of all available options, we determined that a [tilted implant](#) would be the most suitable approach. This implant was strategically inserted to bypass the mandibular canal, ensuring optimal positioning while preserving vital structures.

1 Initial radiograph before the start of treatment. The bone loss caused by peri-implantitis is visible.



2 CBCT scan three months after implant removal.



3 Planned position of the [BioniQ implant](#) near the mandibular canal.

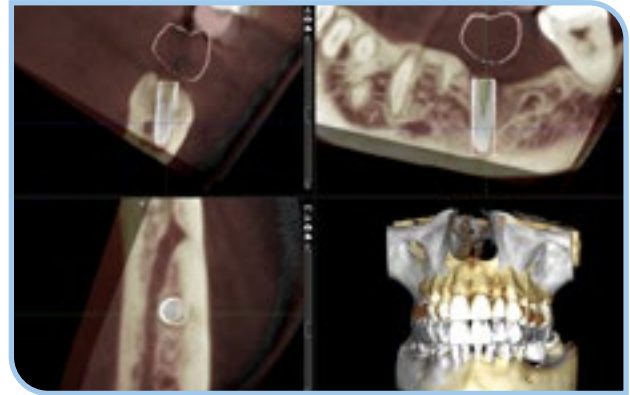
4 Design of a surgical template in the Romexis program, taking into account the requirements for implant position as well as a suitable restoration.



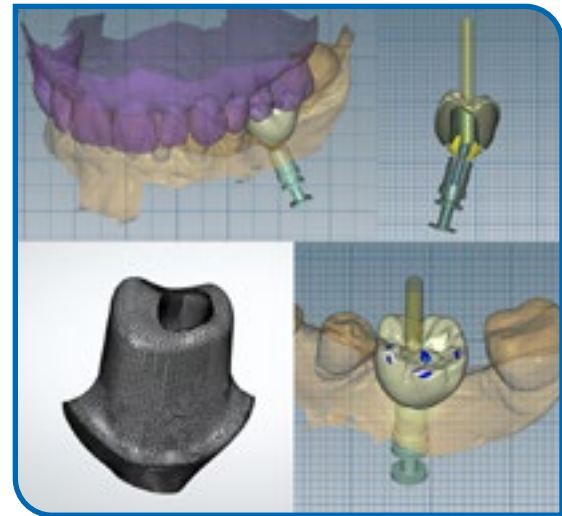
5 The BioniQ implant with a diameter of 3.5 mm and a length of 12 mm was inserted through a surgical template using an [insertion wrench](#) with marked offsets.



6 Accuracy of template [guided implantation](#) – the planned position is represented by a white cylinder. The implant was inserted according to plan with a clinically insignificant deviation.



7 The emergence profile of the mandible, scan of the mandible with scanbody, intraoral scan of the maxilla, and occlusion scan.



8 Design of the individual abutment and the dental crown in the exocad program. An individual abutment with an angled screw channel was planned for better access to the restoration.

9 Final dental prosthesis. The custom abutment was bonded into the zirconia crown in the laboratory.



10 The final result after placing the dental crown at the site of tooth 36.

IMPLANTATION WITH BIONIQ PILOT GUIDED DRILLING IN COMBINATION WITH DYNAMIC NAVIGATION



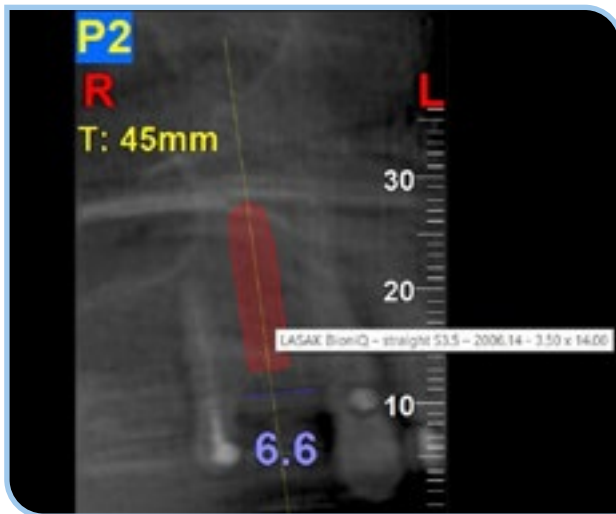
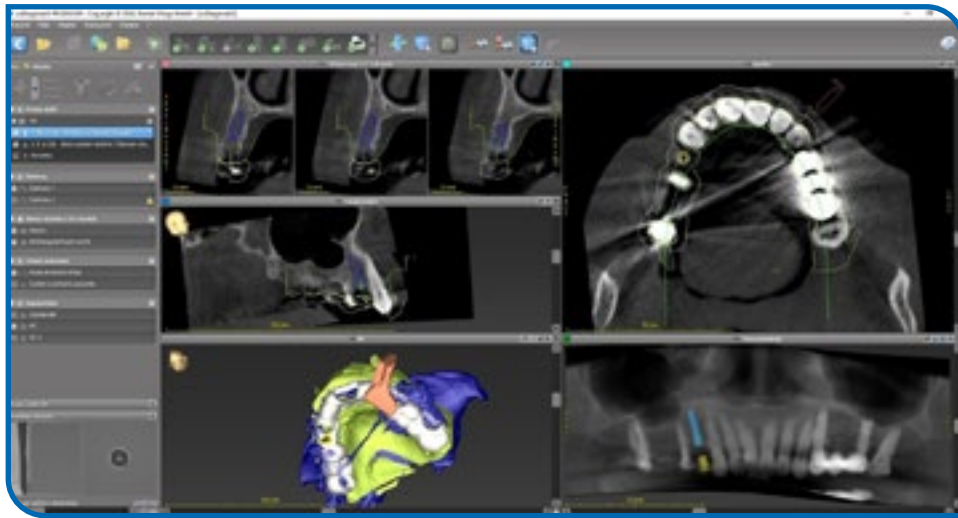
MUDr. Jiri Hrkal
(Czech)

- Dr. Jiri Hrkal earned his medical degree from the Faculty of Medicine at Charles University in Plzen, Czech Republic, establishing a strong foundation for his career in dentistry.
- Since 1992, Dr. Hrkal has operated his own private practice, focusing on dental implantology and implant prosthetics, developing extensive expertise in these specialized fields.
- Dr. Hrkal frequently lectures at training events both domestically and internationally. He shares his professional insights through academic reports and conducts lectures on advanced topics such as dynamic and static navigation, augmentation procedures, and the application of PRGF.
- He is a member of the IGZ and DGI, serves as vice-president of the Czech Society of Implantology, and holds a position on the board of the An-Institute DTMD University Luxembourg.

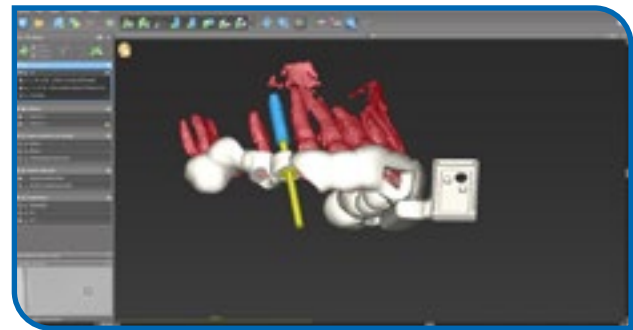
ANAMNESIS

A 65-year-old female patient, in good health and a non-smoker, sought treatment at our practice. Her case required the removal of an unsatisfactory fixed restoration supported by teeth 17, 15, and 14, as well as the extraction of tooth 14. Teeth 17 and 15 had previously undergone endodontic treatment. After a thorough assessment, we developed a comprehensive treatment plan. This included placing a 14 mm long BioniQ Straight implant with a 3.5 mm diameter in the region of tooth 14. We also planned a fixed metal-ceramic bridge spanning teeth 17-15 and a metal-ceramic implant-supported bonded dental crown. Given the complexity of the case we decided on a combined approach using [guided pilot drilling](#) and dynamic navigation.

1 A CBCT scan of the maxilla was taken and then merged with the model scan using the coDiagnostiX software. A fixed metal-ceramic dental bridge on teeth 17-15 and a metal-ceramic implant-supported bonded dental crown for region 14 were planned and designed.

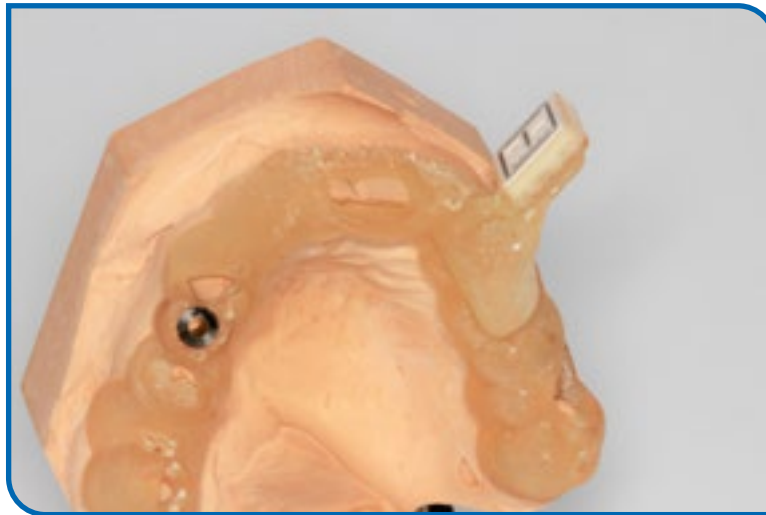


2 Based on the measurement of the bone volume, a 14 mm long BioniQ Straight implant with a diameter of 3.5 mm was planned for region 14.



3 In order to make the implant placement as precise as possible (given the limited bone supply and the implant length of 14 mm) and to avoid the nearby root of the neighboring tooth, a combined surgical template was designed.

4 The tooth-supported surgical template contained a guide sleeve for the static template-guided pilot drilling and a holder for the dynamic navigation sensor. The template was produced using a 3D printer.



5 The implant bed preparation was started using the surgical template with the [BioniQ S2.9 guided drill](#) under the supervision of the DENACAM dynamic navigation system.

6 The template was removed and the preparation was completed with conventional instruments using the dynamic navigation system. The exact position of the planned implant was checked on the screen.



7 X-ray control image after the implantation. The implant was inserted as planned.



8 The final result after placing a fixed dental bridge on teeth 17-15 and an implant-supported dental crown on tooth 14.

THE RIGHT DENTAL IMPLANT PROSTHETICS FOR LONG-TERM SUCCESS WITH BIONIQ PLUS IMPLANTS



“This case demonstrates exceptional tissue stability, attributable to three key factors: the high quality of LASAK implants, a carefully designed prosthetic restoration that avoids ‘overstimulation’, and the patient’s diligent oral hygiene practices, which she maintains admirably despite her advanced age.”

Dr. Volker Bonatz M.Sc. M.Sc.

(Germany)

- Dr. Volker Bonatz received his dental education at the Christian-Albrechts-University of Kiel, Germany. He then gained diverse experience during his residency, serving at the Wilhelmshaven Naval Medical Corps and in various specialist practices.
- He earned a Master of Science (MSc) in Oral Surgery/Implantology in 2010, and a Master of Science (MSc) in Aesthetic Reconstructive Dentistry in 2013.
- He speaks at conferences in Germany and internationally on implantological and prosthetic topics. He is also a member of the German Society of Oral Implantology (DGOI).
- Dr. Bonatz operates a private practice in Landau, specializing in implantology and aesthetic-functional treatments. His approach focuses on providing patients with aesthetically pleasing and long-lasting functional solutions, carefully tailored to each individual’s manual dexterity and financial considerations.

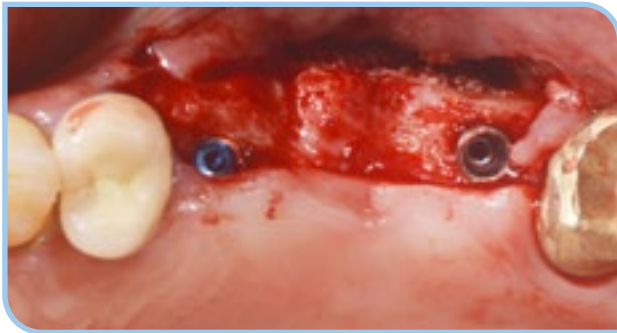
ANAMNESIS

A 70-year-old female patient presented with a significantly damaged tooth 26. This tooth was part of a bridge construction that had been in place for over three decades. Upon examination, we found the tooth to be extensively destroyed subcoronally. Our treatment plan involved the careful removal of the compromised tooth 26, including its roots, without the need for osteotomy. Following the extraction, we proposed placing [BioniQ Plus implants](#) in the areas of teeth 25 and 27.

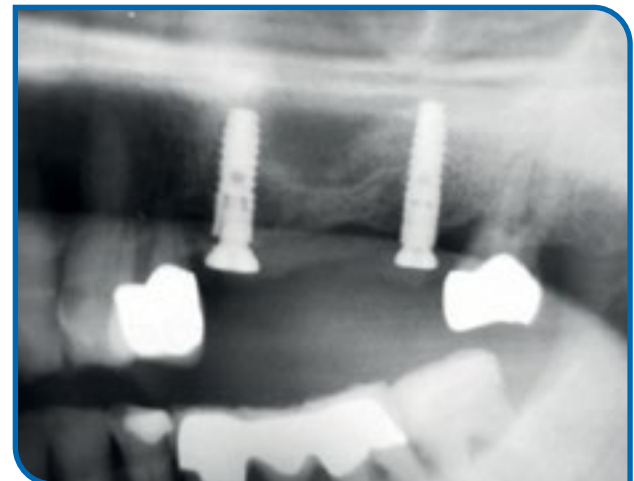
1 The initial situation – tooth 26 is destroyed subcoronally.



2 After healing, two 12 mm long [BioniQ Plus implants](#) with a 3.5 mm diameter and 1.7 mm high machined neck were inserted and the area was simultaneously augmented with autologous bone and [PORESORB-TCP](#). The augmented area was covered with a collagen membrane ([Collagene AT](#)[®]).

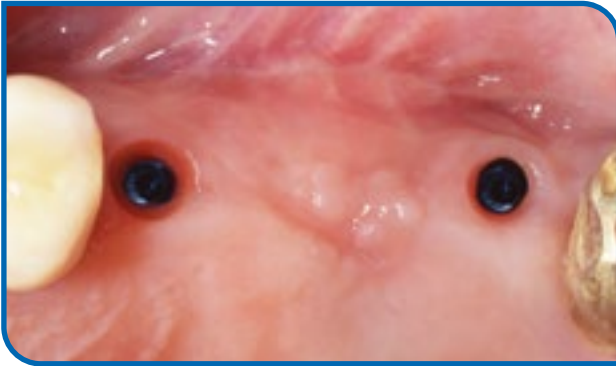


3 The selection of this type of implant took into account the esthetic characteristics of the upper posterior region.



4 Postoperative control radiograph: the gingiva former at 24 still needs to be retightened.

5 The prosthetic phase followed five months after open healing.



6 The ISQ value determined after exposure was 74 ISQ on both BioniQ Plus implants.



7 The occlusally open and screw-through design.

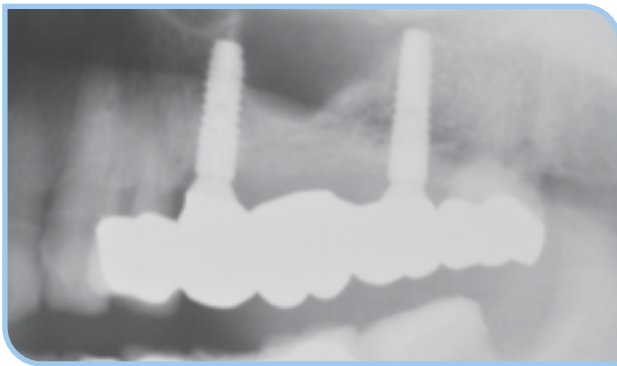


8 The dental technician decided to complete the prosthetics "in one session". The model situation with a zirconium oxide bridge placed on the prefabricated abutments.

9 Both esthetic abutments with periodontal-friendly cervical design are screw-retained intraorally.



10 Excellent fit and functional as well as highly esthetic result. The final prosthesis was placed five months after implant placement. The occlusal screw openings were "service-friendly" sealed with composite.



11 X-ray control image 23 months after implantation.



12 Good soft tissue stability is also evident 23 months after implant placement. Satisfactory cleaning also contributes to this.

COMPUTER-ASSISTED SURGICAL PROCEDURES WITH LASAK BIONIQ IMPLANTS



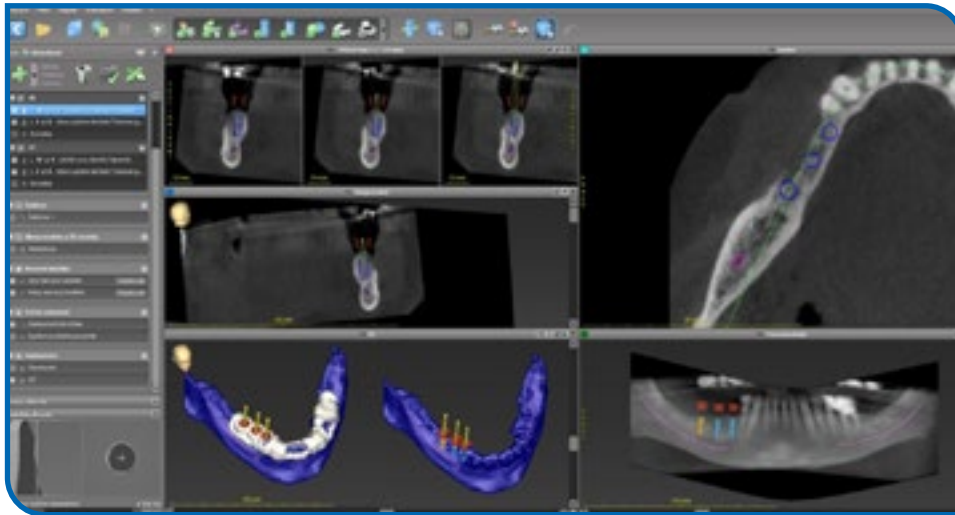
MUDr. Jiri Hrkal
(Czech)

- Dr. Jiri Hrkal earned his medical degree from the Faculty of Medicine at Charles University in Plzen, Czech Republic, establishing a strong foundation for his career in dentistry.
- Since 1992, Dr. Hrkal has operated his own private practice, focusing on dental implantology and implant prosthetics, developing extensive expertise in these specialized fields.
- Dr. Hrkal frequently lectures at training events both domestically and internationally. He shares his professional insights through academic reports and conducts lectures on advanced topics such as dynamic and static navigation, augmentation procedures, and the application of PRGF.
- He is a member of the IGZ and DGI, serves as vice-president of the Czech Society of Implantology, and holds a position on the board of the An-Institute DTMD University Luxembourg.

ANAMNESIS

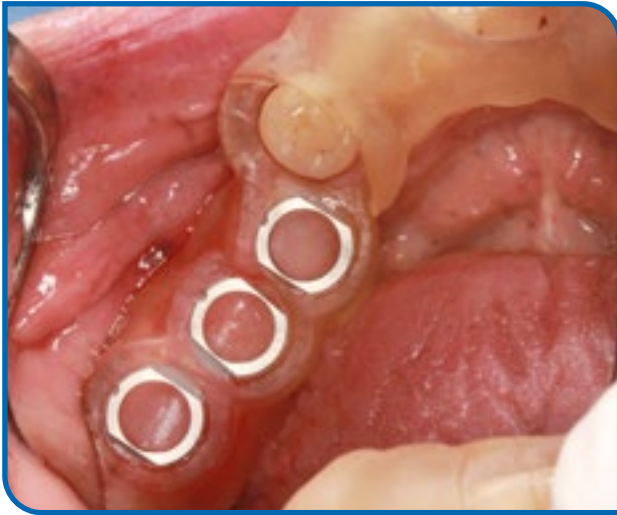
A 76-year-old patient, in good health and a non-smoker, sought treatment at our practice for an unilaterally shortened dental arch in his right mandible. His primary request was for a fixed, implant-supported denture to restore functionality and aesthetics. After a comprehensive evaluation, including a CBCT scan and dental impressions, we developed a treatment plan tailored to the patient's needs. Our approach involved placing three [BioniQ implants](#) in the regions of teeth 45, 46, and 47. These implants would serve as the foundation for a fixed, screw-retained metal-ceramic dental bridge designed to provide a durable and natural-looking solution.

1 Planning of the implants and the surgical template, taking into account the available bone volume and suitable restoration: at 45 and 46, always a 10 mm long BioniQ Straight implant with \varnothing 3.5 mm and at 47 a 10 mm long, Conical BioniQ implant with \varnothing 4.0 mm..



2 A 3D-printed tooth-supported surgical template was designed. The [BioniQ instrument set for guided surgery](#) was used for implant placement.

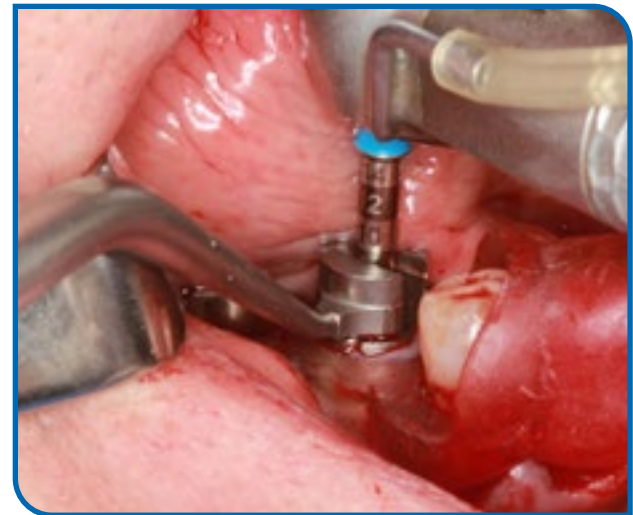
3 After rehearsing the exact fitting of the tooth-supported surgical template in the mouth, the implants were placed in the planned positions.



4 In accordance with the surgical protocol, the S2.9 guided drill with the required length and an S2.9 drill guide (with the same color strip) of the smallest diameter of 2.3 mm were used.

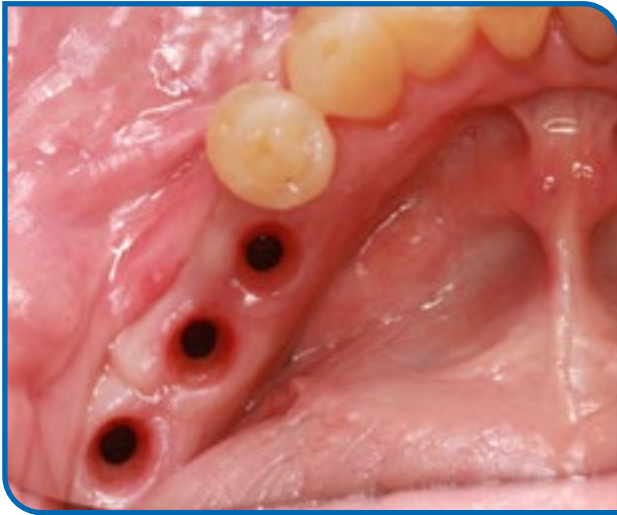


5 Then the treatment was continued with the drills and the drill guides for the appropriate implant diameter.



6 The preparation was completed using guided countersinks and threadformers with C-guides. After the surgical template was removed, the implant was placed.

7 After three months, the implants were exposed, and the impression was taken.



8 A fixed screw-retained metal-ceramic dental bridge was designed. The trial fitting of the superstructure shows that it fits correctly.



9 The final prosthesis was screwed into the patient's mouth. The patient's expectations of a functional and esthetic result that is stable and sustainable in the long term were met.



10 The X-ray check after fitting the final restoration.

IMPLANTS AND PROSTHETICS FOR THE AGEING PATIENT



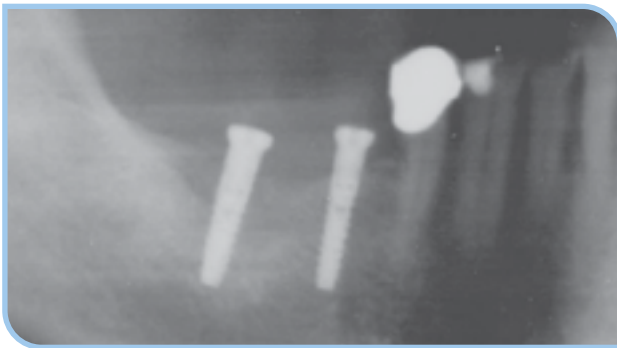
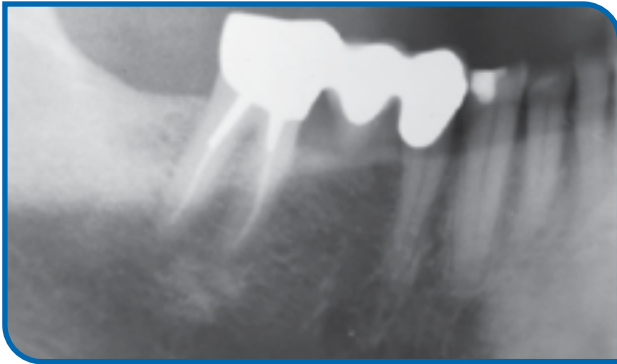
Dr. Volker Bonatz M.Sc. M.Sc.
(Germany)

- Dr. Volker Bonatz received his dental education at the Christian-Albrechts-University of Kiel, Germany. He then gained diverse experience during his residency, serving at the Wilhelmshaven Naval Medical Corps and in various specialist practices.
- He earned a Master of Science (MSc) in Oral Surgery/Implantology in 2010, and a Master of Science (MSc) in Aesthetic Reconstructive Dentistry in 2013.
- He speaks at conferences in Germany and internationally on implantological and prosthetic topics. He is also a member of the German Society of Oral Implantology (DGOI).
- Dr. Bonatz operates a private practice in Landau, specializing in implantology and aesthetic-functional treatments. His approach focuses on providing patients with aesthetically pleasing and long-lasting functional solutions, carefully tailored to each individual's manual dexterity and financial considerations.

ANAMNESIS

A 70-year-old patient sought treatment for discomfort in the right mandible, specifically in an area where a bridge had been in place for approximately 30 years. We found that the mesial bridge abutment at tooth 45 was subcoronally destroyed. Additionally, tooth 47 exhibited tenderness when pressure was applied to the bite block. Given the patient's age and the condition of the jawbone, we aimed to avoid augmentation. Instead, our treatment plan involved placing particularly [narrow implants](#) in the atrophied areas. Due to the absence of an antagonist tooth, it was determined that replacing tooth 47 with a third implant was unnecessary.

1 Initial situation: a subcoronally destroyed mesial bridge abutment 45 and a tooth 47 with a pressure sensitive bite block. An atraumatic and extremely bone-preserving tooth extraction followed. The alveolar walls were almost completely preserved.



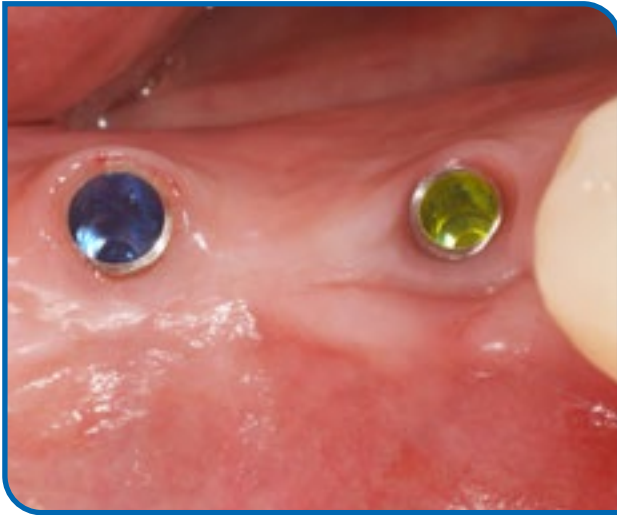
2 Insertion: at 45 a 12 mm long [BioniQ Plus implant](#) with \varnothing 2.9 mm and at 46 an equally long implant with \varnothing 3.5 mm. Both implants have a pronounced machined neck to prevent plaque accumulation over time.



3 The implants were inserted with primary stability and with the machined surface up to bone level. The X-ray check confirms that the [BioniQ Plus implants](#) inserted are of sufficient length.

4 During open healing, cleaning checks were carried out with instructions to also clean the cover screws using special brushes to ensure an inflammation-free peri-implant gingiva.

5 Due to the open healing, surgical exposure was not necessary. The Ostell was used to document the strength, which was well above 70 ISQ for both implants. Gingival conditions before the impression was taken were clean.



6 In the course of the treatment, the defective crown 44 was also redesigned. The implant fit was verified with an implant control splint to be on the safe side due to the very slight distortion that can never be ruled out when taking the impression.



7 Intraorally, the splint can be fitted tightly but without tension.



8 If possible, all implant prosthetics should be screw-retained to have quick "service access" in the event of bruxism-related screw loosening, for example. The master dental laboratory sandblasted the tried-in abutments.

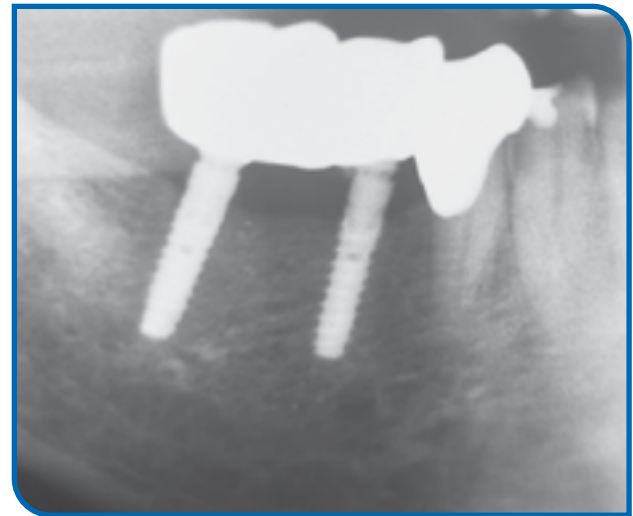
9 A ZrO₂ block with two occlusal access channels was fabricated.



10 After the two abutments were tightened and filled over the screws, the ZrO₂ block was bonded intraorally and the openings were then sealed with plastic material.



11 In addition, the dental technicians ensured a cleaning-friendly basal passage between 45 and 46. The handling of the interdental brushes was checked and the patient was instructed to attend a regular recall.



12 The X-ray 14 months later shows a stable peri-implant bone level, which may have increased distally to the 2.9 implant.

COMPLETE DENTURE RECONSTRUCTION WITH BIONIQ AND BIONIQ PLUS IMPLANTS



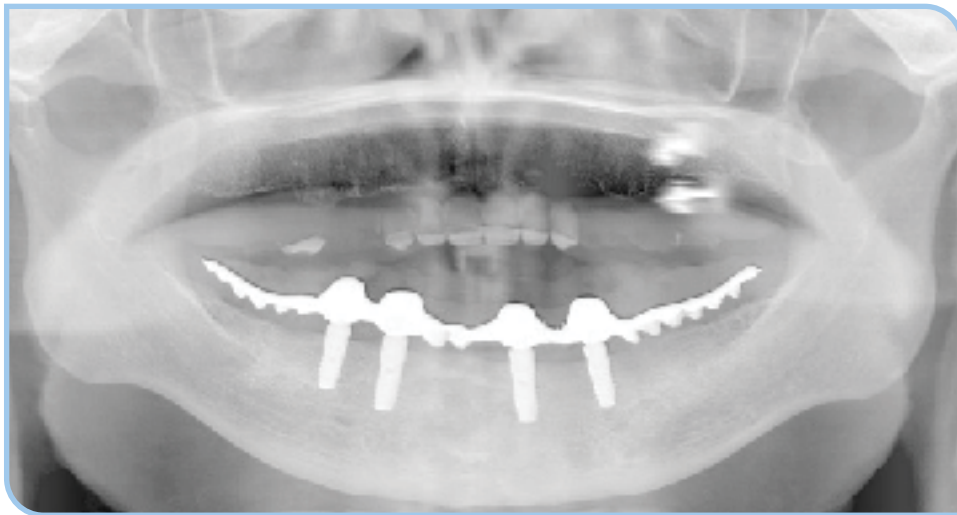
Doc. MUDr. Martin Starosta, Ph.D.
(Czech)

- Dr. Martin Starosta completed his dental education at Palacky University in Olomouc, Czech Republic, followed by a residency at the Clinic of Stomatology, University Hospital Olomouc.
- In 1999, he was appointed as a forensic expert in forensic dentistry.
- Dr. Starosta assumed leadership of the Department of Dentistry at the University of Ostrava's Faculty of Medicine in 2023, while continuing to operate his private practice in Olomouc.
- He is a member of the Committee of the Czech Periodontology Society and belongs to international organizations such as the European Federation of Periodontology (EFP) and the International Team of Implantology (ITI). Dr. Starosta regularly contributes to his field through professional reports, scientific articles, and textbooks, and is a respected speaker at conferences both in the Czech Republic and internationally.

ANAMNESIS

A 58-year-old female smoker presented with a complex dental situation. Her maxilla was edentulous but with a preserved alveolus, and had been treated with an overdenture for the past four years. In the mandible, she had a non-functional fixed bridge supported by teeth 45, 43, 33, and 35, along with a separate molar at position 46. At the patient's request, we prioritized treatment of the mandible. Only after the successful completion and a one-year follow-up of the mandibular treatment did we proceed with the maxilla. For the upper jaw, we implemented a fixed restoration supported by six [implants](#).

1 Initial situation: edentulous maxilla and the denture supported by teeth 45, 43, 33, 35 and a separated molar 46 in the mandible. The treatment plan was to extract all remaining teeth in the mandible and perform an immediate restoration. After the extraction socket had healed, four [implants](#) were to be inserted and a hybrid restoration with telescopes was to follow.



2 Three months after the extraction, four implants were placed in the mandible. [BioniO Plus implants](#), with a machined neck section of \varnothing 4 mm and lengths of 10 and 12 mm, were inserted at the soft tissue level. Due to the bone volume, they were inserted in regions 45, 43, 32 and 34. The prosthesis was used as a surgical template.

3 After the eight-week healing phase, the prosthetic phase began. An implant-supported telescope prosthesis was made.



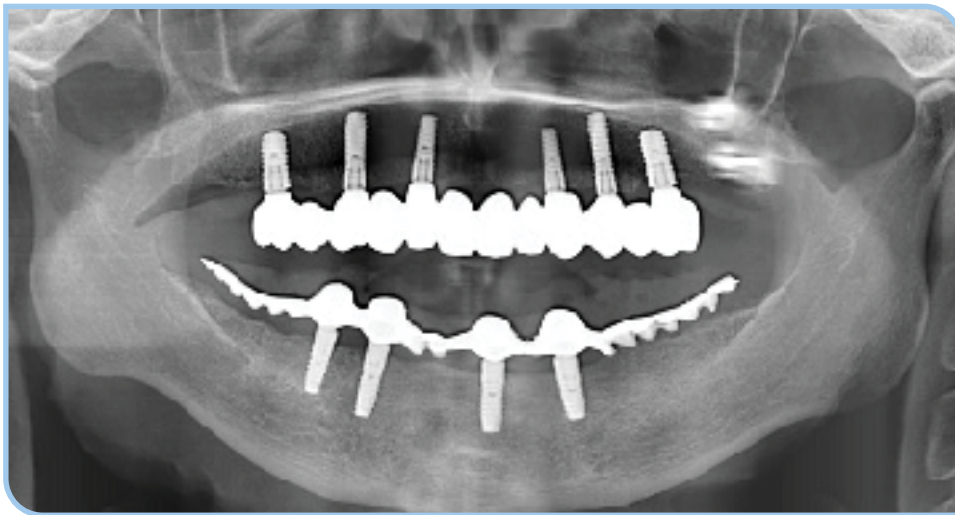
4 Telescope crowns on implants in the mandible.



5 The patient found the final treatment satisfactory. At the recall after one year, everything was fine. The patient also wished to be treated with a fixed restoration in the upper jaw.

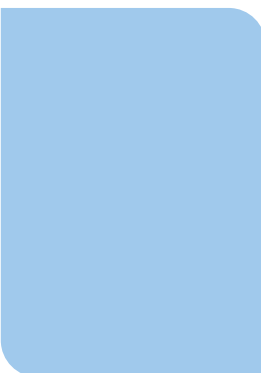
6 In the maxilla 6 [BioniQ implants](#) were placed at the bone level; the anterior tooth area Ø 4 mm, with lengths of 12 and 14 mm, and the molar tooth area Ø 5 mm, with a length of 10 mm. After the healing phase, the patient was treated with a fixed, milled ZrO₂ bridge.

7 After her articulation was checked and adjusted, the patient was instructed on oral hygiene in the maxilla area. The next recall was scheduled in six months. At this follow-up, the patient reported satisfaction with the esthetics and function of both prostheses.



8 The follow-up X-ray also showed the stability of the alveolar bone around the [implants](#). The patient is now three years post-treatment with a stable result.

Lifetime Guarantee



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