Implant Tribune

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SimPlant Conference in Monterey

The 2009 SimPlant Academy World Conference is planned for Monterey, Calif., next June. The event will focus on 3-D digital dentistry.

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Powerful investment

Dr. Domenick DeFrancisis explains why the cone beam CT scanner from PreXion is the best purchase and investment he's made since the inception of his dental practice.

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Live from San Diego, it's AAID!

Surgeries broadcast live are the highlight of this year's annual meeting

By Sierra Rendon, Managing Editor

"I thought there was no way they were going to be able to pull it off …"

"I think they should do it every year."

"I was really amazed at how well prepared they were — they came right in and the patients were ready to go."

These were just a few of the glowing comments heard immediately following the first two live surgeries that took place the morning of Oct. 31 at the American Academy of Implant Dentistry's 57th Annual Meeting at the Manchester Grand

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Two live surgeries are shown side-by-side at the AAID's annual meeting in San Diego on Oct. 31.

The 'All-on-4' implant concept for edentulous jaws

By Paulo Maló, DDS, and Miguel de Araújo Nobre, RDH

The efficacy of dental implant treatment is well-documented and its further development includes protocols for simplifying the procedures.

The immediate function protocol is a powerful simplification as it allows the complete rehabilitation to be finalized within the same procedure.[1-29] The fact that four implants is an optimal number for complete-arch prosthesis is an important further simplification. Provided the implants are placed as "cornerstones" — two posteriorly and two anteriorly[30,31] — and they are well-anchored, the probability for success is high.[32,33] It has also been demonstrated that tilting of implants might be advantageous as longer implants may be placed with good cortical anchorage in optimal positions for prosthetic support and reducing the length of the cantilever.[34-36]

Based on these principles the All-on-4 concept was developed for safe and simple treatment of totally edentulous mandibles and maxillas and has been shown to be a viable option. The advantage of the All-on-4 for the edentulous mandible is it avoids the use of bone graft or nerve transposition techniques even in severely resorbed situations. In the edentulous maxilla, where insufficient residual bone volume often makes implant placement posterior to the canine/first premolar impossible, the All-on-4 concept offers solutions in situations where other-

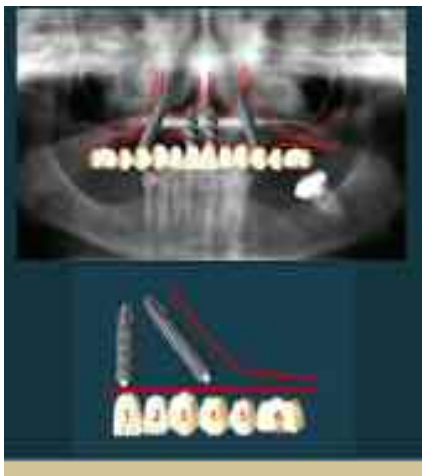

Fig. 1: All-on-4 Maxilla high resorption, implant position.

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Sweden's top students receive prestigious award

For the 19th year running, "The Hon. Göran Anneroth Student Achievement Award of the Year," also known as the Dentatus prize, was granted at a ceremony on the opening day of FDI/Swedental 2008 in Stockholm.

The prize, which is sponsored by Swedish company Dentatus, is awarded yearly to the top students of the four dental universities in Sweden.

This year's recipients, selected by their respective university for their excellent academic achievements, were Nadya Esfahani, Ivana Franc, Jeanette Tveit and Gustaf Wiklund.

In keeping with tradition, the students were further acknowledged for their achievements during the traditional Dentatus breakfast meeting held on Sept. 25.

During the meeting, the newly awarded students had the opportunity to network with several prominent dental professionals from all over the world as well as representatives from the international dental industry.

From left, Nita Weissman Okamoto, Dentatus Implant Division; Gustaf Wiklund, Umeå University; Ivana Franc, Malmö Högskola; and Nadya Esfahani, Göteborg University.

ITI appoints Dr. Friedrich Buck as new executive director

The International Team for Implantology (ITI), a leading academic organization dedicated to the promotion of evidence-based research and education in the field of implant dentistry, announced the appointment of Dr. Friedrich Buck to the position of executive director of the ITI. He will be joining the organization on Feb. 1, 2009.

Buck comes to the ITI from Ivoclar Vivadent AG, a leading international manufacturer of dental materials and equipment headquartered in Schaan, Liechtenstein. With a graduate degree and doctorate in dentistry from the University of Ulm, Germany, Buck began his career in general practice in 1991. He then joined Ivocar Vivadent in 1993, where he rose to the position of marketing director worldwide for clinical products in 2001.

In his new position as executive director of the ITI, Buck's main task will be to assure the smooth organization and administration of all ITI activities in order to support the implementation of the objectives, philosophy, policy and procedures of the ITI. He will also oversee the management of the ITI Center, the administrative headquarters of the ITI in Basel, Switzerland.

"During the last few years, the ITI has evolved to become a leading academic authority in the field of implant dentistry with its more than 6,000 members from more than 90 countries," said Professor Dieter Weingart, president of the ITI. "As a dentist by education, who brings a wealth of experience in marketing and business administration in a globally operating enterprise, Dr. Buck is an ideal choice for the position of executive director of the ITI. Additionally, his deep understanding of the field of dentistry and his excellent relationship to the scientific community will be very valuable for the future growth and success of our organization."

Buck takes over from Rolf Hafner, who oversaw the ITI's administration for the past six years and left the organization at the end of August 2008. Professor Weingart commented: "On behalf of the ITI Board of Directors, I would like to thank Rolf Hafner for his vision, ideas and contribution, which were instrumental in making the ITI what it is today. We wish him every success in his future endeavors."

The International Team for Implantology unites professionals around the world from every field of implant dentistry and dental tissue regeneration.

For more information, see *www.iti.org*.

IT Corrections

Implant Tribune strives to maintain the utmost accuracy in its news and clinical reports. If you find a factual error or content that requires clarification, please report the details to Managing Editor Sierra Rendon at s.rendon@dtamerica.com.

Tell us what you think!

Do you have general comments or criticism you would like to share? Is there a particular topic you would like to see more articles about? Let us know by e-mailing us at **feedback@dtamerica.com**. If you would like to make any change to your subscription (name, address or to opt out) please send us an e-mail at **database@dtamerica.com** and be sure to include which publication you are referring to. Also, please note that subscription changes can take up to six weeks to process.

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Materialise Dental to present conference in Monterey

The 2009 SimPlant Academy World Conference will be held at the Monterey Marriott in Monterey, Calif., from June 25-27, 2009.

The conference mission is to provide a comprehensive understanding of the use of 3-D digital dentistry in order to improve implant treatment planning services. Materialise Dental encourages clinicians who have limited knowledge about SimPlant and SurgiGuide to attend.

During this three-day event, participants will be invited to attend intensive, hands-on SimPlant software training workshops for all levels; high-quality lectures by renowned speakers in the field; and hands-on laboratory sessions in which participants will, for example, learn how to use SurgiGuide drill guides.

Materialise Dental, manufacturer of SimPlant software, the world's first interactive 3-D implant planning system for accurate and predictable treatment planning of dental implants and SurgiGuide drill guides, will host its 2009 SimPlant Academy World Conference in Monterey, so participants can enjoy both the intensive training program and some of the most famous beaches in California.

Take in the sunset with the seals and sea otters at the Fisherman's Wharf, drive the coastline on famous 17 Mile Drive and play golf on one of the legendary golf courses at Pebble Beach. Bring the family and turn it into a trip you'll never forget.

The conference will begin on June 25 with limited attendance, hands-on SimPlant software training. Anyone can attend, even if you have no prior knowledge of the SimPlant software and SurgiGuide drill guides. Participants will have the opportunity to sign up for this session and receive an in-depth hands-on training in an intimate setting with a Materialise Dental expert. Participants are encouraged to bring cases for review.

The event will open with morning lectures stemming from the theme "Dentistry Inspired by the Third Dimension" followed by SimPlant software training.

That afternoon, the highlight of the program will be rotating labs set up so every participant can learn the ins and outs of how to appropriately incorporate a dental laboratory, CBCT technology, SurgiGuide drill guides and treatment planning management into their practice from industry leaders and conference patrons.

Saturday closes with a full day of hands-on clinical case workshops and lectures with clinicians from all walks of life.

"Materialise Dental is thrilled to offer a fantastic program at the Sim Plant Academy World Conference," said Tom Rogers, general manager of Materialise Dental USA and Canada. "For this event, we've assembled the finest group of implant dentistry experts and industry patrons one could imagine, and those in attendance will be treated to three days of unsurpassed education in our never-ending quest to make implant surgery even more successful."

To secure hotel accommodations and additional information, call (888) 327-8202 or visit *www.simplantacademy.org*.

(Source: Materialise Dental)

Tooth loss may increase risk of kidney disease

According to the National Kidney Foundation, one out of nine Americans suffers from chronic kidney disease (CKD), and millions more are at risk. A debilitating disease, CKD can affect blood pressure and bone health, and can eventually lead to heart disease or kidney failure.

A recent study published in the Journal of Periodontology (JOP), the official publication of the American Academy of Periodontology (AAP), suggests that edentulous adults may be more likely to have CKD than dentate adults.

In the study, conducted at Case Western Reserve University, endentulism was found to be significantly associated with CKD, indicating that oral care may play a role in reducing the prevalence of chronic kidney disease in the U.S. population.

The study examined the kidney function and periodontal health indicators, including dentate status, of 4,053 U.S. adults 40 years of age and older. After adjusting for recognized risk factors of CKD such as age, race/ethnicity and smoking status, the results revealed that participants who lost all their teeth were more likely to have CKD than patients who had maintained their natural dentition.

"The rationale for examining edentulous adults in this study is to observe the long-term effects of periodontal disease on the presence of chronic kidney disease," states study author Monica Fisher, PhD, DDS, MPH. "Periodontal disease is a leading cause of tooth loss in adults; therefore endentulism is considered to be a marker of past periodontal disease in the study's participants."

While additional research is needed to fully understand why tooth loss is associated with a higher prevalence of CKD, the destructive nature of chronic inflammation may play a role. Both periodontal disease and chronic kidney disease are considered inflammatory conditions, and previous research has suggested that inflammation may be the common link between these diseases. Since untreated periodontal disease can ultimately lead to tooth loss, edentulous patients may have been exposed to chronic oral inflammation.

According to David Cochran, DDS, president of the American Academy of Periodontology and professor and chair of the Department of Periodontics at the University of Texas Health Science Center at San Antonio, treating periodontal disease can do a lot more than save your natural teeth.

"Researchers have long known that gum disease is related to other adverse health conditions, and now we can consider chronic kidney disease to be one of them. It is exciting to think that by controlling periodontal disease and therefore helping to preserve natural dentition, the incidence and progression of CKD may be reduced."

Periodontists recommend regular brushing and flossing and routine visits to a dental professional in order to maintain comprehensive oral health. If gum disease develops, consulting a periodontist is an effective way to determine the most appropriate course of treatment.

About AAP

The American Academy of Periodontology is an 8,000-member association of dental professionals specializing in the prevention, diagnosis and treatment of diseases affecting the gums and supporting structures of the teeth and in the placement and maintenance of dental implants. Periodontics is one of nine dental specialties recognized by the American Dental Association.

For more information, see *www.perio.org*.

(Source: American Academy of Periodontology)

AO's opening symposium 'litmus test' for new implant technology

The opening symposium of the Academy of Osseointegration's 2009 Annual Meeting will serve as a litmus test for a range of new implant therapy technologies, allowing AO members to determine whether these "advances" offer hope for improved patient care or are simply complicated, sometimes more expensive methods to achieve traditional results, Program Chair Dr. David L. Guichet said.

"A New Wave in Implant Therapy: From Diagnostics to Final Restoration," will kick off the meeting Feb. 26, in San Diego, Calif.

With a focus on surgical, mechanical, biological and prosthetic technologies, the opening program borrows its title from the meeting's overall "new wave" theme. The meeting's world-class scientific program will run from Feb. 26–28, at the San Diego Convention Center.

"AO members are constantly inundated with a great deal of information touting the 'latest and greatest...'" Dr. Guichet explains. "The meeting's opening symposium will challenge an impressive slate of presenters to back up the potential advantages of these new approaches with supporting data. We want them to prove it."

(Source: Academy of Osseointegration)

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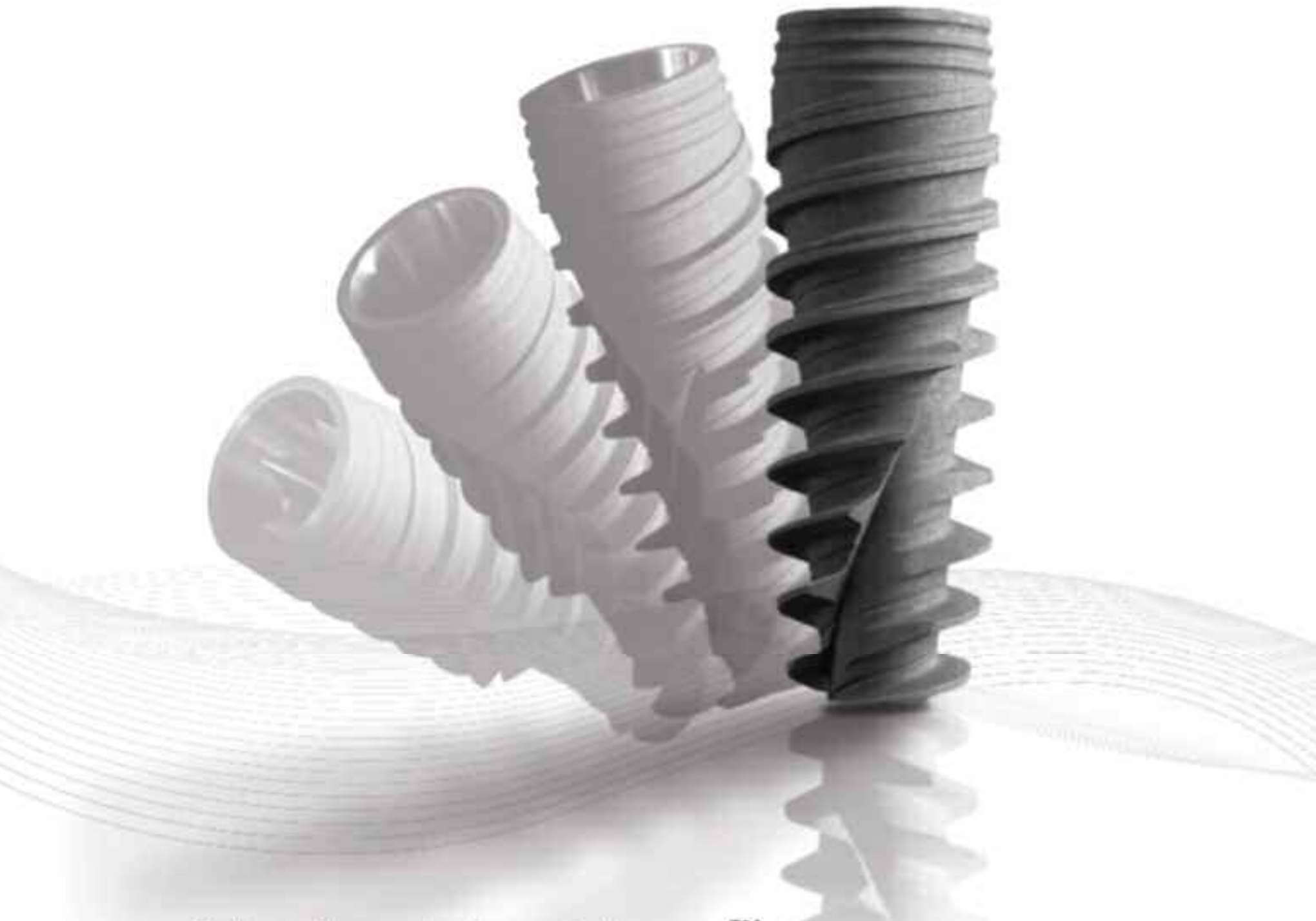

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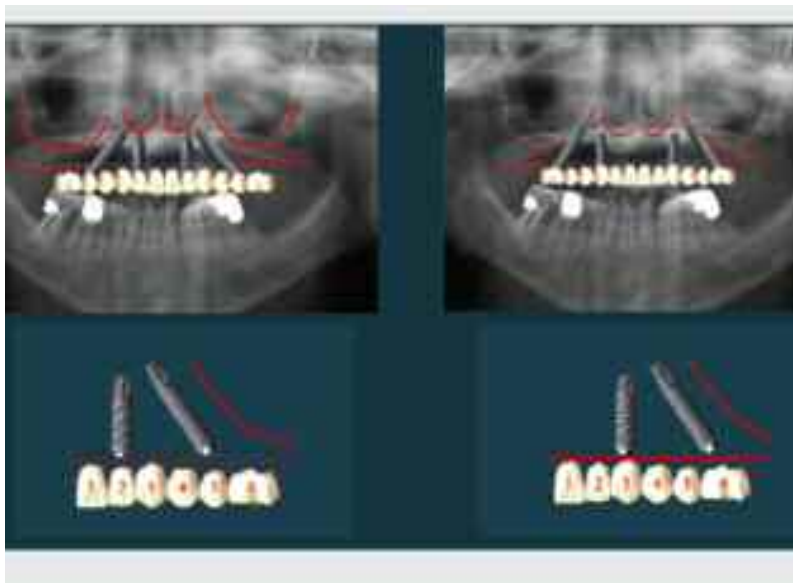

Fig. 2: All-on-4 Maxilla moderate resorption, implant position.

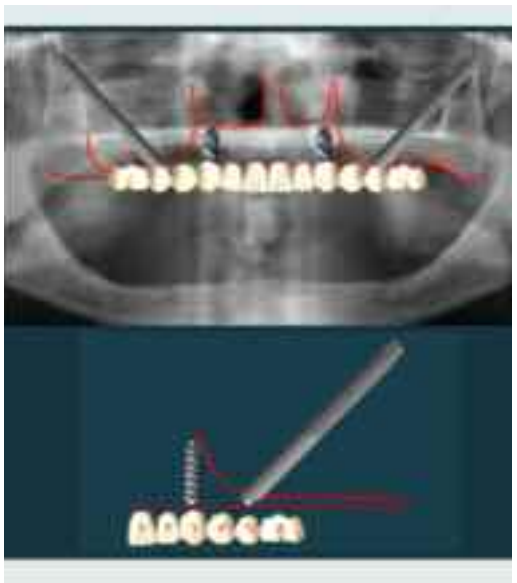

Fig. 3: All-on-4 Hybrid, implant position.

AD

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wise bone grafting would have been indicated.

This paper aims to explain the indications for the All-on-4 system treatment, which maneuvers around the anatomical limits and risks and allows in a small amount of time to accurately perform implant treatments for fully edentulous jaws

Materials and methods

The All-on-4 concept is based on the optimal number of four implants for supporting an edentulous jaw with a complete arch prosthesis. The concept benefits from posterior tilting of the two distal implants, which offers a minimum of 10 teeth in the immediately placed prosthesis with a maximum of a one-tooth distal cantilever. The procedures are described elsewhere[32,33] and here we offer a summary of the protocol.

• *Inclusion/exclusion criteria*

The patients undergo medical history, clinical observation and complementary radiographic exams of panoramic X-ray (bone height) and a CT-scan (bone quality and bone volume). For the mandible, the anatomical inclusion criterion is a bone ridge of a minimum 4 mm width and maximum 8 mm height in the interforamina area.

For the edentulous maxilla, the height and width of the residual crest bone available between the anterior walls of the maxillary sinus for the maxilla and between the mental foramina for the mandible will establish the type of All-on-4 surgical approach: All-on-4 Standard, All-on-4 Hybrid or All-on-4 Extra-Maxilla.

For the All-on-4 Standard, the anatomical inclusion criterion is a bone ridge of a minimum 4 mm width and maximum 10 mm height from canine to canine. The All-on-4 concept can be used at different degrees of maxillary atrophy as the position of the posterior implant is the determining factor for the inter-implant distance.

Depending on the degree of resorption, the posterior implant head will emerge at different positions at the bone crest, normally between the first premolar [high resorption (Fig. 1)] and the first molar [moderate resorption (Fig. 2)]. If the above criteria are not met, then an All-on-4 Hybrid or All-on-4 Extra-Maxilla should be considered. In the All-on-4 Hybrid rehabilitation, maxillary anchored implants are used in conjunction with extra-maxillary anchorage implants (anchored in the zygomatic bone) (Fig. 3), whereas in All-on-4 Extra-Maxilla, only four extra-maxillary anchorage implants are used (Fig. 4).

Surgical protocol

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Fig. 4: All-on-4 Extra-Maxilla, implant position.

Fig. 5: Edentulous guide in place.

Fig. 6: Implant neck positioned at bone level with the desired distal angulation helped by the edentulous guide.

Fig. 7: Thirty-degree angulated abutment placed to compensate the distal implant tilting in the mandible.

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• *Medication*

The surgical procedures for both jaws were performed under local anesthesia with mepivacaine chlorhydrate with epinephrine 1:100,000 (Scandinibsa 2 percent®, Inibsa Laboratory, Barcelona, Spain). All patients were sedated with diazepam (Valium® 10 mg, Roche, Amadora, Portugal) prior to surgery. Antibiotics (amoxicillin 875 mg and clavulanic acid 125 mg, Labesfal, Campo de Besteiros, Portugal) were given one hour prior to surgery and daily for six days thereafter.

Cortisone medication (prednisone [Meticorten® Schering-Plough Farma, Lda, Agualva-Cacém, Portugal], 5 mg,) was given daily in a regression mode (15 mg to 5 mg) from the day of surgery until four days postoperatively. Antiinflammatory medication (ibuprofen, 600 mg, Ratiopharm, Lda, Carnaxide, Portugal) was administered for four days postoperatively starting on day four. Analgesics (clonixine [Clonix®, Janssen-Cilag Farmaceutica, Lda, Barcarena, Portugal], 300 mg,) were given on the day of surgery and postoperatively for the first three days if needed. Antacid medication (omeprazole, 20 mg, Lisboa, Portugal) was given on the day of surgery and daily for six days postoperatively.

• *Flap procedure*

The implants and abutments are placed in one position at a time, starting with the two posterior locations. The implant placement is assisted by a special guide, designed by the author (P.M.) (Fig. 5). The guide is placed into a 2 mm hole made at the midline of the jaw and the titanium band is bent so the occulsal centerline of the opposing jaw was followed. By this, it is possible to guide the implants to be placed in the center of the opposing prosthesis and at the same time to find the optimal position and inclination for best implant anchorage and prosthetic support.

The insertion of the implants (Brånemark System®; Nobel Speedy®, Nobel Biocare AB; Gothenburg, Sweden) follows standard procedures, except that under-preparation is used when needed to get a final torque of more than 40 Ncm before the final seating of the implant. Countersinking is used only when needed to create space for the head of the tilted implants and/or to secure both buccal and lingual cortical bone contact at the implant head in thin bone crests. The preparation is typically done by full drill depth with a 2 mm or a 2.5 mm twist drill (depending on bone density), followed by a widening of the entrance in the cortical bone with a 3 mm twist drill and an adjustment with the countersink, if needed.

The implant neck is positioned at bone level, and bicortical anchorage is established whenever possible (Fig. 6). The length of the implants varies from 10 mm to 18 mm. In case of immediate extraction, the sockets are made free from soft tissue remnants and cleaned to avoid infection. In case of periodontitis on the lower incisors, extraction, curettage and bone shaping is performed and virtually no socket is left. After closing and suturing the flap with 4–0 non-resorbable suture, the access to the abutments is opened by a punch and impression copings are placed.

Implant placement in the mandible: In the mandible, a mucoperiosteal flap is raised along the top of the ridge in the intermentonian area. The two most anterior implants follow the jaw anatomy in direction, which in severe resorption cases means a posterior tilting. Two

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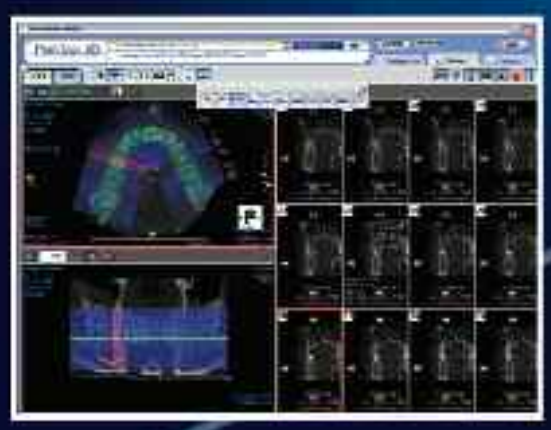
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