Treatment options for the edentulous arch

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DENTSPLY Implants.
A stable and comfortable solution for edentulous patients

ATLANTIS™ Conus concept

ATLANTIS Conus concept allows for friction-fit, non-resilient prosthetic solutions for fully edentulous patients and is designed for optimal chewing function, sense of taste and oral hygiene.
Historically, when a patient’s dental condition reached a state of total tooth loss, treatment was limited to a complete denture with no hope of improving that status. The greatest challenge, particularly when working with a lower jaw, was providing a denture with reasonable stability and retention.\(^1\) Success was greatly dependent upon the skill of the practitioner but also on the neuromuscular ability of the patients, their supporting structures and a philosophical attitude toward their condition.\(^2\) Treatment for patients suffering complete edentulism has been revolutionized by the ongoing success of dental implants such that the standard of care for the mandible is an implant overdenture.

The spectrum of prosthetic modalities developed since the acceptance of endosseous implants to the dental market ranges from the very simple to the astoundingly complex. As this field of study once directed by specialists has evolved into a mainstay of the general practice, favor of expeditious and reproducible methods has gained dominance over complex therapies. Implant overdentures and fixed hybrid prostheses are choices typically offered by the dentist based upon a patient’s financial ability. While both are generally successful, the overdenture and the hybrid prosthesis are not without pitfalls.

The implant-retained overdenture is described as a prosthesis that covers, and is supported by, the natural tissues retained by the dental implant; the design is considered implant-assisted rather than supported.\(^3\) Placement of two to five implants is commonly found for the edentulous mandible with emphasis on creating a large anteroposterior spread between the endosseous pillars. If more than two implants are clustered in a small AP range, the prosthesis cannot move freely about a single axis of rotation and the denture may dislodge during function. By creating the fulcrum on the most posterior overdenture abutments, the denture will pivot in function resulting in disengagement of the attachment mechanism and cause premature wear of the retentive components. Therefore, an increase in the number of implants beyond two does not
necessarily provide a linear increase in retention and stability. In fact, the opposite may be true. Because support is provided by the mandible itself, resorption of the supporting structure will result in increased tipping of the denture during function, resulting in dislodgment. Therefore, the dentist and patient must be cognizant of the need for relining of the prosthesis periodically to assure optimal performance.

Recommendation is, therefore, placement of two implants in the anterior mandible to allow one axis of rotation. These implants should also be positioned such that future implants may be considered should the patient wish for an implant-supported alternative.

**The hybrid prosthesis**

The screw-retained hybrid prosthesis is a fully implant-supported structure and, therefore, is not affected by incremental resorption of the residual ridges. It has gained in popularity as the technically difficult and costly gold frameworks have been replaced by CAD/CAM titanium structures and by proven success of angled implant placement to increase the AP spread. Because the restoration has a metal substructure, it is possible to cantilever posterior to the terminal abutment, increasing the length of the functional arch.

However, the esthetic component of the restoration, namely the denture teeth and acrylic resin matrix, are inherently weak materials originally intended for use in complete and partial dentures where functional load is comparatively low. If insufficient inter-arch space is available, the risk of fracture or displacement of denture teeth or resin base is high as the materials will be too thinned to withstand forces generated during function and especially parafunction.

Unfortunately, this is an increasingly common occurrence, especially in restoration of the maxilla with a fixed hybrid prosthesis. Inconvenient screw-access holes may further weaken the prosthetic teeth. Repair of a fractured or lost tooth requires removal of the hybrid prosthesis and correction in the dental laboratory.

The dentist must be prepared to remove the structure and later re-seat it once the repair is completed. The patient must accept he or she will be without “teeth” for the length of time required for the technician to fix the problem. Attempts to prevent fracturing by increasing the thickness of the restoration can be at the expense of esthetics.

Figs. 5, 6. Completed final impression using the custom tray and light body and medium body PVS, as well as rigid bite registration material around the impression copings to eliminate any movement of the copings.

Fig. 7. Design images showing the contour and tooth position of the duplicate denture and proposed design of the ATLANTIS Conus Abutments.

Fig. 8. ATLANTIS Conus Abutments on the working cast. Each abutment has the tooth number location scribed on the buccal-facing surface.

Fig. 9. SynCone caps seated on the abutments on the working cast. An impression of this arrangement is made to fabricate a cast metal frame to reinforce the final restoration.
the resin is limited by the space available to do so. If inadequate inter-arch space is encountered, correction cannot be achieved by adding more material. Rather, a change in design to a different and possibly more expensive restoration may be needed.

When hybrids are used in the maxilla, conflict may arise in attempting to improve the esthetic and phonetic result by use of ridge lapping and the limitations such shapes impose on proper oral hygiene.

The benefits of the fixed hybrid prosthesis are clearly improved function and minimal post-treatment complications as long as the patient is able to properly clean it and breakage is avoided. Because it is fixed, the patient cannot remove it to clean away entrapped debris and properly remove plaque. Repair or replacement of the resin teeth requires removal and re-seating by a dentist.

_ATLANTIS Conus concept: the removable implant–supported bridge

As described above, the tissue-supported overdenture performs best with only two implants placed in the anterior region. When more than two implants are placed, the goal should be to provide a completely implant-supported result.6, 9

The Atlantis Conus concept (DENTSPLY Implants) provides the optimal functioning convenience of a fixed hybrid but also allows patient retrievability for unobstructed oral hygiene practice, regardless of the degree of ridge lap. It is, in effect, a prosthesis that can be removed by the patient, with the stability of a fixed bridge.

The concept centers around patient-specific abutments, each milled to a 5 degree convergence, and parallel to each other in the dental arch. Recommendation is for at least four implants in the mandible and four to five implants in the maxilla.

These uniquely designed, conical abutments are fitted by corresponding metal SynCone caps (DENTSPLY Implants), which are incorporated into the prosthesis. The result is a friction-fit, stable, retentive and fully implant-supported bridge that remains removable by the patient.10 No special latches or plunger attachments are necessary to retain it. The patient merely slides the bridge in vertically onto the abutments and removes it in the opposite way. Because the abutments are a part of the ATLANTIS (DENTSPLY Implants, Waltham, Mass.) portfolio, it is available for all major systems.

In addition, because each abutment is custom made, correction of angled implant placement is possible up to 30 degrees. Two major requirements are necessary: the dentist must make an accurate, implant-level impression, and a scan must be made of either an approved denture set-up or of a completed denture to be retrofitted. The ATLANTIS Conus Abutments are then designed to be positioned optimally within the denture confines. The fixed yet removable prosthesis offers the advantages of excellent chewing function, improved esthetics and fracture resistance (as no screw access holes are present) and optimally facial supporting contours, without compromising cleaning by the patient.

_CASE report

A 73-year-old woman with a history of 11 years of complete edentulism of the maxilla and mandible, and five endosseous implants in the anterior mandible, presented with a chief complaint of a non-retentive and unstable lower denture. The implants were standard diameter, externally hexed, Brånemark fixtures. She had moderate resorption of both the maxillary and mandibular residual ridges (Fig. 1).

The patient had bone loss involving the implant bodies, but comparing the radiographic evidence available, documenting her condition through the years, it appears the bone loss occurred soon after implant placement and no appreciable change was seen thereafter.

During those 11 years, her treatment history included initial restoration of the implants with a complete denture retained by the Locator attachment system (Zest Anchors), and the maxilla was restored with a complete denture. She advised that...
the result was unsatisfactory as the lower denture displaced during function.

Her history further reveals that the Locators were replaced with Preci-Clix attachments (Ceka Attachments) with no demonstrable improvement. The patient was later retreated by the author, with new maxillary and mandibular complete dentures and new Locator attachments used to retain the lower prosthesis. The attachment male components were secured intraorally using auto-polymerizing resin to eliminate the possibility of laboratory error.

The patient continued to experience problems with the lower denture coming loose during function and required frequent replacement of the nylon male inserts; replacement with Extended Range inserts did not vary performance. The metal abutments demonstrated considerable wear as well (Fig. 2). Relining the lower denture did not improve the performance of the anchor system.

At the subsequent appointment, the patient was presented with the ATLANTIS Conus concept as a potential solution to her ongoing dilemma. Treatment options were presented as well, including a fixed hybrid prosthesis and a 2-in-1 bar overdenture. These were rejected as inter-arch space was less than optimal, requiring compromise to the strength of the design. The patient also expressed a desire for a removable design as she was concerned with having adequate facial support and wished to be able to remove the prosthesis for proper hygiene and maintenance. It was agreed that a new maxillary and mandibular complete denture would be fabricated, and ATLANTIS Conus abutments would be made to secure the lower restoration.

Clinical and laboratory procedures

Because the existing dentures were made within the last five years and were acceptable with regard to tooth position and vertical dimension, it was decided that clear, acrylic resin duplicates of each denture would be made to serve as custom trays. Double-sided impressions of each denture were made and delivered to the dental laboratory for fabrication of the duplicates. Once processed, the copy denture borders were shortened by 2 mm to allow border molding. The duplicate of the mandibular denture clearly showed the position of each Locator housing and therefore the position of the dental implants. Holes of adequate diameter to allow the duplicate denture to be placed in the patient’s mouth over impression copings were prepared (Fig. 3). The intaglio surface of both the upper and lower duplicate denture were relieved to allow for a wash impression.

The patient returned for final impressions, and the Locator abutments were removed and kept in appropriate order to avoid confusion when re-seating them at the appointment completion. Open tray impression copings were connected to each of the four dental implants to be restored and tightened into place; one implant with greater bone loss and placed significantly more shallowly than the rest was omitted (Fig. 4). Light-body poly vinyl siloxane was injected around the base of each impression coping and medium-body PVS was placed in the custom tray.

The tray was seated, ensuring that the impression copings were completely accessible through the holes previously prepared. The patient was instructed in facial and tongue movement to achieve proper peripheral border extension. Regisil Rigid (DENTSPLY) bite registration material was injected around each impression coping to rigidly adhere them to the impression tray. This step is critical as reliance on flexible impression material may allow transfer error when constructing the working cast.

Once the impression materials were fully set, the screws retaining the impression copings were removed and the final impression and tray were withdrawn from the patient (Figs. 5, 6). All Locator abutments were re-seated and tightened. Final impression of the maxilla was completed with border molding using modeling plastic and a wash impression with light-body PVS. Upon completion, the patient was dismissed.

Fig. 15_Completed bridge with SynCone caps processed in position. Because they have been processed intraorally, there is no error in fit. These caps are extremely retentive, allowing only vertical displacement of the prosthesis.

Fig. 16_Completed restoration. Note the absence of screw access holes for a prosthesis that looks like a denture yet fits like a bridge.
In the dental laboratory, implant analogs were secured to the impression posts, and gingival mouldage was injected around the analogs to an adequate depth to completely cover the coping-analog interface. The impressions were boxed with wax and poured in vacuum-mixed die stone. After setting, the impression coping screws were removed and the impressions were separated from the hardened casts; standard laboratory procedures were followed in cleaning and trimming the working casts. Base plate and wax rims were made for continuation of the denture fabrication. The impression materials were removed from the duplicate denture, and it was positioned back onto the mandibular cast to be scanned. An online order was completed including identification of the implants involved, and the case was shipped to DENTSPLY Implants for the design and manufacture of the ATLANTIS Conus Abutments.

The working cast, implant analog connections and the denture duplicate were scanned at the ATLANTIS production site, and the abutments were individually designed using ATLANTIS VAD (Virtual Abutment Design) software to ensure that all abutments were parallel to each other. The restorative margin of each abutment was placed close to the soft-tissue height surrounding each implant but always supra-gingival to guarantee unobstructed seating of the finished restoration.

Each abutment was milled to a 5 degree taper to match the SynCone caps, ensuring an intimate friction-fit. Upon design completion, the images of the abutment designs were made available for review and approval before manufacturing (Fig. 7). Once the design presented was found to be satisfactory, approval for production of the patient-specific abutments was granted. It is important to note that no fees are incurred by the dentist or dental laboratory during this process until design is agreed upon and authorization to proceed is given. The abutments are custom designed to fit specifically to the denture set-up or duplicate denture provided; there are no sizes, heights, angles or collars to select from a catalog and, therefore, no risk of choosing incorrectly.

When received, the ATLANTIS Conus abutments were secured to the working cast with abutment screws, along with four prefabricated SynCone caps (Figs. 8, 9). The caps were seated on to the abutments and sent to the dental laboratory to be impressed. The impression was poured twice, one in improved dental stone and one in refractory material for fabrication of a cast metal frame. While waiting for the frame to be completed, final try-in appointments for the denture set-up were completed, and the patient approved fabrication of the dentures.

The denture set-up with a final bite record was returned to the dental lab, the cast metal frame was seated on the improved dental stone cast and areas around the stone copy of the SynCone caps were blocked out prior to processing. The SynCone caps will be captured intraorally, rather than having them processed in the dental laboratory. All work was completed on the duplicate stone cast rather than the original working cast. The cast metal frame was opaqued to prevent gray show-through. The set up was transferred to the cast with the metal frame and the dentures were processed (Figs. 10, 11).

Because the ATLANTIS Conus concept results in a fully implant-supported prosthesis, the peripheral borders of the finished structure were greatly reduced and the occlusal table was abbreviated at the first molar. The length of functional arch follows the identical AP spread principles used for hybrid prosthetics to avoid excessively long cantilevers.

At this point, the structure was a bridge and not an overdenture. To facilitate seating of the abutments in the patient, a clear matrix was made with the abutments on the original working cast, where they have remained since receipt. Each abutment was identified with one, two, three and four black ink dots respectively, based on their position on the cast. The clear matrix was seated over the abutments, and corresponding black dots were drawn on it to line up...
The patient was scheduled for completion of treatment. The Locator abutments were again removed and Teflon tape was placed in the implant excluded from the design. The abutments were seated onto the dental implants (Fig. 12), and the clear matrix was placed to verify that each abutment was correctly orientated by checking that the dots on the matrix superimposed with those on the abutments.

Once verified, the abutments were torqued to 20 Ncm, appropriate for the implants involved. The SynCone caps were placed and viewed with magnification to assure that they were superior to the gingival tissues (Fig. 13). The prosthesis was placed over the caps to verify there was no obstruction of complete seating. The prosthesis was removed and vent holes were drilled through the buccal contours of the acrylic resin to relieve hydraulic pressure during capture of the caps. The SynCone caps were lifted and a rubber dam was placed around the abutments to prevent pick-up resin from locking into undercuts, and the caps were re-seated (Fig. 14).

Attachment processing material (Chairside by Zest Anchors) was placed in the reservoirs of the prosthesis and seated over the SynCone caps. The upper denture was placed, and the patient was instructed to gently close into full occlusion and to maintain position for two minutes while setting occurred. After two minutes, the excess flow of pick-up resin was checked for hardness, and after an additional minute, the prosthesis was ready for removal. Removal was uneventful, although retention was considerable. Removal of the bridge can only occur after the long-axis of the abutments; no tipping or rotating is possible (Figs. 15, 16).

Once removed, the excess pick-up material was cleaned up and the bridge was properly polished where needed. The abutments were packed with Teflon tape to within 3 mm of the surface, and the remaining space was filled with flowable composite resin (Fig. 17). The patient was instructed on placement and removal and repeated the exercise until we were satisfied she would experience no difficulties performing this. The clear, duplicate copy of the bridge was seated onto the abutments using a chairside soft lining material (Fig. 18).

This copy serves as a temporary device for the patient to wear when cleaning the finished bridge or when sleeping to protect the tongue from scraping against the abutments. A panoramic radiograph was taken at completion of treatment (Fig. 19).

The patient returned after one week and again after six weeks, and reported at both visits that the lower bridge did not move at all during function and stayed seated until she removed it. She commented on the ease of cleaning the dental abutments, and she reported no discomfort and no food entrapment. Overall, the patient was very pleased with the result (Fig. 20).

Discussion

The number of implants placed for an edentulous patient should be based upon whether the design is to be implant-assisted or implant-supported. If the goal is a minimalist design utilizing the soft tissue for support, two implants using Locator attachments are appropriate to retain a mandibular denture and will provide a predictable outcome. However, when more than two implants using resilient overdenture retainers are employed, there is not a corresponding linear increase in retention of the denture, and the result may suffer. Therefore, when at least four implants are planned, the restoration should be designed as implant-supported to maximize the value of the patient’s greater investment.

This article discusses just such a situation where a patient had experienced repeatedly low value from her investment of five implants. By redesigning her treatment to become implant-supported through the use of the ATLANTIS Conus concept, a successful result was achieved without the greater expense...
of a fixed hybrid. The final result was functionally comparable to a fixed restoration while providing lip and cheek support of a removable prosthesis without complicating or obstructing oral hygiene.

The telescopic design of the ATLANTIS Conus concept provides outstanding retention of the prosthesis during function as edentulous patients chew in a relatively flat elliptical pattern and the bridge can only be removed vertically. The abutments themselves are patient-specific and can be made for all major implant systems, allowing rescue of many frustrating results with overdentures.

As long as there is sufficient inter-arch space (at least 12 mm), existing finished dentures can be retro-fit with ATLANTIS Conus abutments, reducing patient cost while providing a stable result. Cast chrome frame reinforcement is advised for all new ATLANTIS Conus prostheses as the tremendous increase in strength of the bridge by the frame more than offsets the slight increase in cost and may actually reduce required inter-arch space.

The clinical procedure is relatively simple and comparable to implant overdentures; however, because the abutments are patient-specific, tooth position must be established before the design of the abutments is begun.

Conclusion

A patient with an 11-year history of frustration with her dental implant investment was treated successfully with the ATLANTIS Conus concept using patient-specific abutments and SynCone caps, providing an implant-supported, removable bridge with all the benefits of a fixed design and none of the limitations.

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About the author

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Author_Extraction Academy Staff

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The live surgical sessions are uniquely designed to include brief morning lectures and discuss different approaches to successful exodontia procedures, prior to prescreened surgical cases, each day.

The comprehensive program will include clinical preparation, overview of head and neck anatomy, pharmacology, medical emergencies, informed consent policies and protocols, risk management, suturing techniques, management of complications and postoperative care.

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The course is designed to teach minimally traumatic tooth extractions, focusing on alveolar ridge preservation, whenever and wherever possible.

Participants will learn everything from single-, multiple-, full-mouth to impacted teeth extractions. The presenters will touch upon IV sedation, guided-bone regeneration (GBR) and tips and tricks. Students and faculty will also perform advanced procedures such as root tip extractions, wisdom teeth, calcified teeth, sinus precautions or involvement, infected teeth and exposing teeth for orthodontic treatment. Dental instruments nomenclature, proper use, maintenance and application will also be discussed.

The program will include concierge service and hotel accommodations for distant travelers, visa application invitations for international doctors, breakfast, lunch and a group dinner. All instruments and materials will be provided. California licensure is not required. Any dentist with a desire to increase his or her knowledge in oral surgery is welcome. Students with a California license can perform surgeries with the instructors.

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Attendees have the opportunity to earn as many as 20 hours of continuing education credit focused on implant dentistry. The theme of the conference, "Where Classic Principles Support Cutting-Edge Implant Dentistry," serves as a reminder of the groundwork laid more than 60 years ago by dental implant pioneers. Caesars Palace serves as an ideal Las Vegas backdrop to fit the classic educational theme of the conference.

More than 1,000 implant dentistry professionals will hear from Dr. Carl Misch, one of those pioneers in implant dentistry, as he delivers one of the keynote addresses on Thursday afternoon, Oct. 22. Back by popular demand is Dr. Daniel Alam, who was the leading microsurgeon on the first face transplant performed in the United States. Alam brought the audience to its feet at the 2010 AAID Annual Conference. This year, he will inspire attendees with his presentation on "Face Transplantation: Past, Present, Future," as the closing keynote speaker of the conference.

During the three and one-half days, world-renowned clinicians will review time-honored dental implant techniques and explore cutting-edge dental implants. They will evaluate the latest concepts in dental implant treatment planning and rethink the science and practice of implant dentistry.

"The AAID is known for providing ‘practical education for the practicing implant dentist.’ Not only is that found in the didactic and hands-on sessions but through the interaction of peers in the halls and at the social events during our conference," said Dr. John Da Silva, president of the AAID.

"What happens in Vegas at the AAID Annual Educational Conference is not intended to stay in Vegas. Bring it home and put it to use immediately in your practice," he added.

In addition to main podium presentations, attendees can choose from 16 hands-on workshops as well as 16 didactic seminars. Two days of team-oriented training are also offered.

A post-conference, full-day course on advanced soft- and hard-tissue grafting will be offered. This course includes hands-on experience on cadaver heads.

Next year’s AAID Annual Educational Conference will be held in New Orleans from Oct. 26–29.

Established in 1951, the AAID is the only dental implant organization that offers credentials recognized by federal and state courts as bona fide. Its membership, which exceeds 5,000, includes general dentists, oral surgeons, periodontists and prosthodontists from across the United States and 40 other countries.

The academy is known worldwide for its bona-fide credentialing program in implant dentistry. The rigorous requirements, coupled with AAID’s commitment to educate patients about implant dentistry and the importance of using a knowledgeable, experienced and trained implant dentist, such as an AAID credentialed member, sets the academy apart. More information about AAID’s consumer outreach can be found at www.aaid-implant.org. Information about educational offerings, valuable member benefits, credentialing program and other offerings from the AAID can be found online at www.aaid.com.

Past AAID Educational Conference attendees take part in a hands-on workshop.

(Photo/Provided by AAID)
MEISINGER’s
6th Annual High Altitude Comprehensive Implant Symposium

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MEISINGER to host its 6th Annual High Altitude Comprehensive Implant Symposium

MEISINGER's 6th Annual High Altitude Comprehensive Implant Symposium will be held from Feb. 3-6 at the Vail Cascade Resort & Spa in Vail, Colo. The resort is conveniently located at the base of Vail Mountain alongside Gore Creek. Vail Village is just a shuttle away to more than 100 shops, pubs and restaurants.

World-renowned speakers will be in attendance to present lectures on current topics and trends in implantology while providing workshops with hands-on training. Participants will gain an understanding of the many challenges of modern implantology and how MEISINGER's Bone Management® System is the best system to assist in overcoming many of those challenges, according to the company.

Previous lectures have included such topics as “Maxillary Full Arch Reconstruction: Diagnosis and Treatment Planning for Removable vs. Fixed Crown and Bridge vs. Hybrid Designs” and “Sinus Elevation at Time of Tooth Removal.”

The symposium will outline implant treatment planning, site preparation and surgical procedures and techniques, including socket grafting, bone augmentation/transfer control, implant placement, surgical basics in implantology and much more. According to MEISINGER, Bone Management is not limited to a technique but rather to a mindset and surgical guidelines. The company says Bone Management is key to successful implant procedures: “Tissue is the issue but bone sets the tone.” Besides the prosthetic aspect, achieving minimally invasive surgical techniques, along with predictable results, facilitates less traumatic and more controlled surgical procedures.

To find out full details and register for MEISINGER's 6th Annual High Altitude Comprehensive Implant Symposium, contact Shelly O'Toole-Green at (303) 268-5400.
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Since placing his first implant nearly 45 years ago, Dr. Jack Hahn has spent much of his career as an implantologist thinking of ways to make treatment more accessible to the practitioner as well as the patient.

Implant design has improved dramatically during that time, with Hahn spearheading key innovations that have helped make implant therapy the essential mode of dental treatment it is today. From the endosseous blade-form implant he helped Miter Inc. develop in 1978 to the newly released Hahn™ Tapered Implant, Hahn’s efforts have been driven by the desire to continually improve in order to make treatment simpler and more predictable.

“The easier we make it to position the implant for a restoration that looks like a natural tooth, the better results we’ll have,” Hahn said.

It was this line of thinking that inspired Hahn’s idea for the first tapered implant. After a long day that included several cases in which he had difficulty placing parallel-walled implants in the anatomically restricted space of the anterior maxilla, Hahn had an epiphany: “The tooth I was replacing was taper-shaped, so why was I putting in a square peg?” That very night, he sketched out the concept.

Steve Hurson, former chief scientist for Nobel BioCare, has said: “Dr. Hahn identified a need for an implant with a narrower apex, which would achieve higher primary stability in soft bone. The concept was to have an implant design that would have the tapered shape of a tooth root … resulting in a system with outstanding predictability.”

In essence, this was an extension of the philosophy that inspired the design of the machined collar Hahn helped Steri-Oss develop. “By designing a 4 mm machined collar that was more like the neck of a natural tooth root, we were able to prevent crestal bone loss and improve outcomes,” Hahn said.

This drive to constantly improve, however, has not always been met with open arms. In fact, his role with Steri-Oss was borne of a disagreement with Miter Inc. “The Titanodont implant had some problems, including an abutment attachment that lost its retention after a few years and fins that would become exposed if there was any crestal bone loss. So I proposed a machined collar with a new prosthetic connection,” he said. “They couldn’t do it because it would be too expensive to change the machinery. I didn’t want to have my name associated with the implant any longer if they weren’t going to correct the problems.”

This led Hahn to other endeavors, including his role with Steri-Oss and, eventually, Nobel Biocare.

After the NobelReplace® tapered implant system launched in 1997, Hahn continued placing and restoring implants, completing thousands of cases. This experience afforded clinical observations that would serve as the basis for a new implant design that Hahn considers his best.

“I came to Nobel with my idea for a new implant in 2012, conceptual engineering drawings in hand, and they said, ‘Replace is so successful; why change now?’” Hahn replied: “Apple has become one of the most successful companies in history by constantly innovating. Why shouldn’t we do the same in implants?”

Wanting to take his design concept to the next level, Hahn began pursuing alternatives, which eventually led him to Glidewell Laboratories. The resulting partnership culminated in the recent launch of the Hahn Tapered Implant System, and Hahn couldn’t be happier with the results.

“When I first visited their facilities, it was immediately apparent that their manufacturing capabilities are state-of-the-art,” he said. “Their engineering team has the technology and know-how to bring design concepts to life with astonishing speed and precision, and their expertise on the prosthetic side of implant dentistry has been invaluable in creating an implant that is as simple to restore as it is to place.”

With a career that speaks volumes on the importance of continual innovation, Hahn is proud to have his name on an implant that contributes to the forward progression of implant dentistry while reducing the cost of treatment. “The better we make implant design, the more accessible we can make implant dentistry to doctors so they can improve their practices and the quality of life of their patients,” he said.

Note: The Hahn Tapered Implant is a registered trademark of Glidewell Laboratories. NobelReplace is a registered trademark of Nobel Biocare.
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