Tete-A-Tete

Dr Gerald Niznick, USA

Dr. Gerald Niznick, often recognized as the father of modern American implant dentistry, graduated from the University of Manitoba Dental School in 1966 and then earned a MSD in Prosthodontics at Indiana University in 1968. While running his dental practice in the early 1970s, Dr. Niznick dedicated himself to developing and patenting a reliable dental implant design. By 1982, that design, Dr. Niznick's Core-Vent System, became one of the most widely used dental implant systems worldwide. By the end of the 1990s, Dr. Niznick held 20 U.S. patents, including the internal connection patent that has become the cornerstone of modern implant design.

Dr. Niznick has received a Honorary Fellowship from Hebrew University and Honorary Doctorates from the University of Manitoba and Tel Aviv University, as well as the prestigious Isaiah Lew Research award from the American Academy of Implant Dentistry. The United States Department of Veterans Affairs also issued a Commendation to Dr. Niznick for designing and funding one of the largest dental implant studies worldwide - 900 patients received a total of 2800 implants.

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- ***How did you get into designing implants?***

I started placing implants in the early 1970's and by the end of the decade I was disenchanted with the results and sought to provide a simple solution to stabilize a lower denture. The Core-Vent implant with an internal hex socket that could accept a cemented overdenture attachment was the result. I started to then develop other abutment options for screw-retained restorations and cemented restorations, bringing prosthetic versatility to what had been a very limited range of available products in the early 1980's.

- ***What made you take a sabbatical from the world of implantology?***

In January 2001, I sold Core-Vent/Paragon to Sulzer Medica which shortly after became Zimmer Dental. My non-compete precluded me from selling dental implants for 5 years, but by mid-2004, I started designing and manufacturing a new line of Application Specific implants in my new company, Implant Direct.

- ***Give us your vision for the future of implantology.***

Almost every general dentist in Israel places and restores dental implants. A higher percentage of general dentists place implants in Germany than in the North America. My vision for the future is that all General Dentists will be treatment planing dental implants as part of conventional therapy with at least half of them placing the implants. Dental implants have a higher 5 year predictability than fixed restorations and simple cases, such as immediate replacement of a single tooth, or implants placed in the symphysis to stabilize a lower denture are well within the skill level and comfort zone of almost every general dentist once they see how simple and predictable they are to do.

- ***What determines the survival of the implant and prosthesis... the design of the implant or the design of the prosthesis?***

The survival of an implant is a forgone conclusion once they achieve osseointegration and that can be achieved with a high degree of predictability. Implants need to offer self-tapping threads with a medium rough surface to assure the initial stability required to achieve osseointegration. A tapered implant is preferable because in soft bone it can be inserted into an undersized socket to assure initial stability. The connection of the implant to the abutment must provide stability for screw-retained abutments under cemented restorations. After these implant design criteria are met, the survival of the prosthesis is a function of the same types of factors that effect restorations on natural teeth - precise fit, adequate strength and proper occlusion.

- ***In your opinion what level of training is necessary in the dental schools of the world?***

I think dental schools should be teaching 4th year students how to place and restore implants. Of course additional training and experience after graduation will be required to build confidence and competence but the seeds must be planted in the academic environment .

- ***Do you believe in guided implant surgery and if you do then who should be doing it....I mean the beginner or the experienced clinician.***

Guided implant surgery should not be a crutch for common sense planning that can be achieved using panoramic radiographs alone. It certainly offers advantages in full arch edentulous cases where the dentist attempts to do flapless surgery but this is the exception rather than the rule. It is equally valuable for beginners and experienced clinicians although the beginners will be using it for simpler cases and the experienced clinicians will reserve it for the more complex cases with

flapless surgery and teeth-in-1Day procedures.

- ***In your opinion do you think there is a place for denture stabilizers in the long run....keeping in mind the huge percentage of edentulism in our country clubbed with restrictions on high ended payment for the conventional implant therapy?***

If by "denture stabilizers" you mean mini-implants under 3mm in diameter with ball attachments, my answer would be no. These mini-implants were developed to be transitional implants placed between buried full sized implants to provide immediate load until the implants osseointegrated. We have now proven that the full sized implants (3mm+) can be splinted around an edentulous arch to provide immediate support for a hybrid screw-retained prosthesis without compromising osseointegration. Implant Direct's 1-piece GoDirect implant with a locator attachment top brings the cost within the reach of most patients without compromising strength or requiring many more implants to do the job that 2 GoDirect free-standing implants can do.

- ***Your passion for implants is second only to Prof. Branemark, having said that what is that you dream about implantology?***

One thing would be for dentists to put the history of implant dentistry in perspective and understand that the discipline is where it is today because of the many contributions of general dentists who considered themselves implantologists dating back to the 1960's. It did not start with a medical researcher like Professor Branemark who was not trained or focused on treating the patients' functional and esthetic demands that dentists face every day in their practices, with or without implants. While Dr. Branemark made a significant contribution in proving the long-term predictability of an osseointegrated titanium interface, implant dentistry has always been a restorative discipline with a surgical component, and not the other way around. Patients come in for esthetic, functional tooth replacement, not just for screws in their jaws. The Core-Vent system was introduced by my first company a year before the Branemark system became commercially available in North America and it offered a variety of abutment options for different clinical applications, not just the one multi-unit abutment available with the Branemark System. It took dentists to expand the prosthetic options of the Branemark System and to eventually recognize that internal connections were far more stable than external hexes, allowing implants to be used in fixed prosthetic applications.

- ***Have we reached predictability in the science of implantology or is it still evolving?***

We have reached a higher level of clinical predictability in implants than in any other discipline of dentistry although as we push the envelope with sinus elevations, bone grafting, ridge splitting and teeth-in-1day immediate restorations, we test the bounds of that predictability, forcing development of ever stronger, better designed implants and abutments. Implant Dentistry is definitely evolving but it is in areas of simplified procedures that guarantee high initial stability even in soft bone to optimize clinical success with immediate load cases. It is evolving in all-in-one packaging to simplify the ordering and reduce the cost to dentists. Dentists are also evolving in their understanding that high prices for implants is more a function of the marketing of a company than it is the quality of the products, once certain basic requirements for good manufacturing processes are satisfied.

- ***Could you explain the philosophy of immediate loading and clear the misconception?***

First we were told by Branemark that the implant must be buried for 3-4 months to protect it from premature loading, and that you should not take x-rays of the implant during this period. Straumann proved that one could achieve the same high level of success without burying the implant, thereby saving the patient the discomfort of a second surgery. Articles started to appear in the late 1980's showing that cross-arch splinting of implants in edentulous jaws allowed such cases to be immediately loaded. By the 1990's, attempts to immediately load single tooth replacement started to prove successful if adequate initial stability could be achieved. One did not know how to quantify "adequate stability" making immediate load rather unpredictable, especially in softer bone. In 1999 I developed the Tapered Screw-Vent designed for insertion using straight step-drills, stopping at an undersized socket in soft bone to allow for compressions that resulted in higher initial stability http://www.implantdirect.com/pdf/SoftBoneArticle(3).pdf. In more recent years, we have come to understand that if a thresh hold stability of 35Ncm can be achieved, the implant can achieve osseointegration even while supporting a temporary crown out of occlusion. Research now confirms that the concept of inserting a tapered implant into an undersized socket can contribute significantly not only to increasing initial torque, but also to increased removal torque after healing and increased percentage of bone contact. The surgical protocol, implant design and surface roughness all contribute to increasing success in immediate loading of implants.