Bacterial Colonization Around the Micro-Gap?

Dr. H. asks:
Recently I have been hearing a great deal about the problem of bacteria colonizing around the micro-gap between the dental implant fixture and the abutment. I have heard that this micro-gap and bacterial colonization can produce bone loss.
Is this a real problem to be concerned with? If so, what are the best ways to prevent this? Is it simply an an issue related to a specific dental implant design?
Thanks.

December 25, 2006 in Abutments, Treatment Planning & Complications | Permalink

Comments

Exactly right.... Implant design is the biggie but I encourage you to look at the study that recently compared different sized microgaps and got some interesting results.
The location of the IA interface is proving to be a critical factor as well as what (if any) movement occurs there based on the connection type.
Best,
Jackson

Posted by: | Dec 26, 2006 4:20:38 PM

The internal hex system has abutment that 'flush' with the implant fixture. This interface however is not totally stable during function and microgaps do form when loaded, especially from lateral forces.

Bacteria gather around these micro spaces. This dynamic movement pumps the toxins that form in the gaps and creates a 'zone of toxicity' at the level of the microgap. Alveolar bone will then remodel to below the zone, resulting in the typical bone loss down to 'first thread'.
This is one of the reasons for the bone remodeling noted at the crestal area. Any micro-movement compounds the effect of bone loss.
(Influence of the size of microgaps on crestal bone changes around titanium implants. A histometric evaluation of unloaded non-submerged implants in the canine mandible. Journal of Prosthodontics. Hermann et al, 2001.)
To reduce crestal bone loss, smaller abutment is used with larger implant (platform switching).

Cheers
Yue Weng Cheu
Singapore

Posted by: Dr Yue Weng Cheu | Dec 26, 2006 4:35:06 PM

Do you mean externally hexed implants? And lets remember where Ankylos got this information from (specifically the Hermann studies). Astra has the internal conus with lateralization of the IA interface and therefore no "BW" establishment and has the longevity research to back it up.
Bone loss to the first thread is common when a lack of stimulation from compressive / tensile forces occur AND when the implant neck lacks rigidity. BW establishment is a bit different. That is one of the two primary reasons the microthreads are surging in popularity following Astra's lead.

Posted by: Jackson Bean, DDS | Dec 26, 2006 4:46:47 PM

There is a book on marketing entitled "Differentiate or Die" which points out the importance of noting how your product differs from the competitors and then to drive home the point that what differentiates your product is the key factor for success. In other words, "our success is due to our conical connection which our competitors do not have." At the same time the competitor may be saying, "our

success is due to our internal hex which provides rotational stability." There is another by Seth Godwin entitled "All Marketers are Liars." The point being that microgap issue was manufactured years ago as a marketing tool by Straumann and then my Astra, both designs of which had better lateral resistance to the external hex but not to the internal hex connections. Along came Ankylos and Bicon claiming the same thing. In reality, it is a non-issue today. There may have been some concern about microgaps with the external hex implants before torque ratchets and a better understanding of pre-load on the fixation screw. The fixation screw on an external hex implant is exposed above the external hex and can flex, causing screw loosening and that is when the microgap became a problem as it opened and closed. With internal connections, whether hex, tri-lobe or conical, this is not a problem as the screw is protected by the male projection of the abutment. Metal only can hit at 3 points so there is no greater seal with a conical connection, an internal bevel, and external bevel or a butt joint. What effects the joint is the precision of manufacturing, the stability between the mating parts and use of adequate torque and prosthesis design maintaining the pre-load on the screw so that the parts stay fitting together.
ALL THE REST IS JUST MARKETING.

Posted by: Jerry Niznick | Dec 26, 2006 5:28:44 PM

Thank you Dr. Niznick! You are, as always, a voice of reason! I often wondered how airplane engineering was related to dentistry. All these implants which have the Morse taper (Astra, Straumann etc.) have moved on a provided us with a "timed" indexable connection. Otherwise they could not be used with any angulated abutment and in multiple unit cases. Please stop debating this ridiculous matter. Implants work. They all have micro gaps. Even a solid implant will have a micro gap between the crown and the implant itself. Most implant connections today are excellent, if done right. Lets talk about proper patient education and even more important--dentist education. In my Implant-Prosthodontics practice, I see mostly problems with improper treatment planning

by our well meaning, yet misinformed colleagues, rather with the implants themselves.

Posted by: DR. Zev Kaufman | Dec 26, 2006 9:49:55 PM

Have been studying and placing implants since 1977, and as an Oral Surgeon I also place permanent abutments and temporaries for the restorative Dentist. I have placed almost every design out there, and from personal experience they all work for the most part. I agree with many of the previous posts that micro gaps do exist and are a direct function of the design of the implant. I too discovered years ago by accident that platform switching gave less bone loss, but have found the Screw-Vent internal hex and lead in bevel to provide an excellent seal that I augment with thread adhesive, specifically Omnibond, prior to it's availability I used over the counter locktite. I can look back almost 20 years to cases done and actually see bone growing up the sides of the abutment, and have consistently seen this.

Posted by: Dr Ron Morris | Dec 27, 2006 9:21:39 AM

I've been involved with implant treatment since the mid 80's, and as a prosthodontist, restore all types of implant designs. I believe the crestal bone loss/microgap issue has many facets, with each manufacturer responding to crestal bone loss by espousing its design as the best i.e., their thread design, abutment connection method, platform switching etc.
Crestal bone loss, in my opinion is multifactorial. In the early days we saw bone loss to the first thread. It was uniform, whether it was the old Core-Vent Screw-Vent, with a 3mm polished collar, and the bone moved 3mm apically or a Branemark, with a platform and a machined thread design where the bone dropped 1.5mm. My take on that is that bone doesn't stick to smooth titanium (read polished collar) and needs a macro or micro surface for dependable retention. The manufacturers began to recognize this and began making smaller polished collars (1.5mm) and Tarnow began lecturing on the so-called biologic width. At a similar time, manufacturers were discussing the flexing of the coronal aspect of the implant and the implant abutment interface (see above Blogs about

screw loosening and stronger internal connections) and believed that stress distribution and lack of micro movement led to better bone retention at the crestal level. Hence the integration of microthreads in some designs. We are now beginning to understand there is a zone of localized inflammation around the abutment/implant interface, and by moving the "microgap" medially, it seems to help keep crestal bone from resorbing (see Blogs above discussing platform switching and narrower abutments of Ankylos and Astra)

I'm not sure there is such a thing as a "biologic width". This is a term coined by Dr. Tarnow to explain the crestal bone loss. Is it really 1.5mm? Will bone drop from the microgap? Will bone stick to roughened surfaces better, thus decreasing crestal bone loss? By moving the zone of localized inflammation medially, will we keep crestal bone? If we roughen an implant to the flange, and move the microgap medially, will it stop bone migration apically? Will using microthreads and internal connections to distribute stress at the crestal bone eliminate bone loss? Which theory is correct? Do they all partially play a role?

I think this is the next great frontier in implant dentistry and researchers are getting closer to an answer. Unfortunately, we clinicians often follow manufacturers claims and believe whatever they say.

As clinicians, we should keep an open mind and treat manufacturers with skepticism. We need to come to our own conclusions, based on science, so we can treat our patients in the best possible way. Our choice of implant should not be "which is cheaper" but what is best for the situation, and for the patient.

Posted by: mj, dds, ms | Dec 27, 2006 2:31:50 PM

This discussion of whether or not there is a microgap and is it relevant can be distilled down into a single question.

Does it ever smell when you take off an abutment that's been in the mouth for a while?

If it never does, you don't have a clinically relevant microgap.

It does, you have a septic connection with bacteria multiplying in the gap.

Which would you want in your mouth?

Happy New Year,

Bill Schaeffer

Posted by: Bill Schaeffer | Dec 28, 2006 1:13:03 AM

Question:

Does it ever smell when you take off an abutment that's been in the mouth for a while? If it never does, you don't have a clinically relevant microgap.

Answer: I put two implants in my mother-in-laws mouth 20 years ago and have not taken off the bridge or taken out the abutments to find out if it smells or not. My guess is that if the 3 unit bridge that the two implants supports is still in function and there has been very little bone loss in 20 years, then if there is a micro-gap, it doesn't matter and if there isn't it is because the abutments stayed firmly attached. This most likely was due to the stability of the internal connections, the amount of torque I applied to the screws and the type of occlusion I built into the restoration. IN OTHER WORDS, MAYBE THE ABUTMENTS YOU REMOVED THAT SMELLED, HAD A REASON FOR BEING REMOVED AND IT WAS THAT REASON THAT LEAD TO THE LEAKAGE AT THE MARGIN AND ULTIMATELY THE SMELL.

Posted by: Jerry Niznick | Dec 28, 2006 1:37:56 AM

Jerry,

You are absolutely right! Sometimes you take off an abutment because there's a problem (like if it was loose!) and that may be the reason why it smells.

Correct - but you don't always take off abutments because there's a problem. Sometimes you take off an abutment because it's a temporary abutment, sometimes because there's a problem on another part of the bridge or the porcelain's chipped etc.....

In these situations there is absolutely no reason why it should stink. If it does, then there has to be a septic connection - why else would there be a smell.

In some implant designs there is never a smell.

Kind Regards,

Bill Schaeffer

p.s. I'm glad that your Mother-in-law's implants are still fine after 20 years - you wouldn't want those going wrong!!

Posted by: Bill Schaeffer | Dec 28, 2006 9:28:12 AM

Marketing is Price, Product, Place and Promotion. While I have no doubt that "Differentiate or Die" and "All Marketers are Liars" are interesting books for people who don't understand marketing they tend to focus on what lay people view as Marketing, i.e. advertising or message. If only it were so that the dentists of the world were actually interested in science as opposed to message or price. If science were important would new products be launched with only one supportive animal study? If science were important would Dentists buy knockoff implants or abutments with almost no research behind them in order to pocket an additional $100 per implant placed. Would a periodontist ask for studies on Emdogain, while they use PepGen?

As a sales person I love talking to and working with Dentists who actually look for a scientific bases for what they do. Mainly because in those conversations I learn something new or grow my understanding of a concept or procedure. These Dentists act when enough evidence is delivered to substantiate a product or procedure. Instead I walk into offices where Arrestin is pumped into patients with 9mm pockets who should be having surgery. Why? Because the hygiene team is being spiffed on each patient who goes forward with this treatment.

As for the Microgap, how much research has to be produced to confirm this issue? Bone loss is widely reported moving away from the Implant and Abutment interface? The explanations for this occurrence may be hooey, though I doubt it, but the evidence is overwhelming. The message of whichever company on how they are addressing the issue may also be loaded with conjecture. But do they show scientific evidence in a multi facility random clinical trial that the problem is resolved? If so then how they deliver the message should be irrelevant, science does not depend on a good sales message.

As for me my favorite marketing book is "Marketing Management, Knowledge and Skills" by J. Paul Peter and James H Donnelly Jr. Dr. Peter being a professor

of mine. Although I am rare in this field as most Sales Reps do not have business degrees. Which is why they will sell a year and half supply of something at a "great deal" to a dentist who they bring in lunch for once a week. I am also a big fan of continuous improvement which is not highlighted by the numerous times I have heard someone tell me "...the patient doesn't know how much that procedure should hurt." or "what difference does 2% or 3% make in regards to implant failure rates."

Implant companies and their staff are not the only ones delivering questionable messages.

Posted by: | Dec 28, 2006 1:13:10 PM

LAST COMMENT:

As for the Microgap, how much research has to be produced to confirm this issue? Bone loss is widely reported moving away from the Implant and Abutment interface?

RESPONSE: How much research has been produced is a better question? I recall the one study by Cochran who is a Straumann spokesman, claiming bone loss associated with a two-stage external hex implant, but when he repeated the study soldering the two parts together so that there was no micro movement (a study he told me about but which I am not sure he published), he found no difference compared to the one-piece ITI implant, which is probably why he did not publish it. I told him that this was not surprising because it is not a microgap problem but an unstable joint problem and in his first study he was using external hex implants with a sloppy unstable fit. The problem with "science" is that you can prove whatever you want depending on the design of the study. If micro-gap caused bone loss, then why was Nobel having 2-3mm of bone loss around their 1-piece NobelDirect implant? Micro-gap is a pure marketing issue created by companies with conical connections or Morse tapers with no proof that they have any better a fit than internal hex connection implants. No doubt they were more stable than the Branemark external hex, but that cannot be extrapolated to all implants without a conical connection

Posted by: Jerry Niznick | Dec 28, 2006 3:13:50 PM

This is the second time of posting this message - the controller in the sky keeps deleting them...
Dr. Niznick, can you say that your implants suffer no bone loss, either vertically or horizontally around the abutment/implant interface when they are placed at crestal level?
Hopefully whoever is in charge here will let this question through this time!

Posted by: | Dec 29, 2006 12:09:10 PM

Does Micro-gap equal Micro-movement? Are the two interchangeable in a sentence? If the Micro-gap is a farce then why does bone remodel to the first thread on so many implant systems? Keeping bone level where you want it for tissue support and long-term esthetics seems to have value. Is the move from internal connections vs. external irrelevant as long as the milling specs for external hexes aren't too sloppy? If the issue is Micro-movement then hermetic seals are irrelevant and when building an external stack your tolerances increase. If Stability is the key then which company manufactures with the most precision? If you or your lab are using abutments from knock off companies that claim to fit in a variety of systems wouldn't the knock offs have built in more slop to account for the various manufacturing specifications? And would a company that outsources all manufacturing therefore have greater issues with tolerance? All of these questions are R&D product design issues not advertising or promotion issues. It also appears to not be settled science. A poorly designed study will deliver poor information, BS in BS out. Straumann or David Cochran did not invent the Microgap although they may have, perhaps inaccurately for Dr. Niznick, named it; just a Tarnow named Biologic Width. There appears to be an underlying truth, bone remodels away from the Implant Abutment connection or the Implant Crown connection, in most cases, with Straumann. If the Micro-gap does not exist and if instead this an issue of poor workmanship then why would companies spend so much R&D on new ideas when they could quickly and cheaply improve their specifications on precision fit and eliminate this problem?

In turn delivering a higher return to investors without wasting money on pointless R&D. They must just enjoy wasting money I guess.

Posted by: | Dec 29, 2006 1:49:35 PM

I seem to be debating with Astra sales people instead of real dentists - why else would you not post your names? Regardless your points deserve answers although you may not like them

Question: Dr. Niznick, can you say that your implants suffer no bone loss, either vertically or horizontally around the abutment/implant interface when they are placed at crestal level?

Answer: No I cannot say that but neither can any implant company honestly say that either. The VA study that I funded in the early 1990's, of which Tarnow was on the peer review committee, proved that bone loss is almost directly proportional to the thickness of the labial plate at time of implant placement. There was a study that compared the Astra implant to the Branemark external hex implant… and reported no difference on bone loss.

Question: Does Micro-gap equal Micro-movement? Are the two interchangeable in a sentence? If the Micro-gap is a farce then why does bone remodel to the first thread on so many implant systems?

Answer: The word Micro-gap means a small gap. Poorly manufactured implants and abutments exhibit a micro-gap between the mating parts. That is not the case with any of the major implant companies' products that I am aware of. The word Micro-movement means rotational instability between mating parts. Here there is a wide range even among the products of leading implant companies with internal hex or tri-lobe connections. This is not a factor with implants like Bicon or Astra or Straumann that do not rely on interdigitating mating parts for stability, but these products have to accept a limitation that the mating abutments can not fit flush with the outside diameter of the implant. They need to fit into a conical internal shaft leaving the top of the implant exposed and creating an undercut between the height of contour of the abutment and the top of the implant. Since this could not be avoided they gave it a name…platform switching

and claimed it had some advantage. I know the disadvantages it has in emergence profile establishment but I am not sure there is any real soft tissue advantage as some claim. As I said there is a wide range or rotational instability with the Branemark external hex having 6.7 degrees down to the Screw-Vent's friction fit abutment-having zero. My new implants with internal hexes and internal tri-lobes have less than ½ degree rotation whereas the Tri-lobe connection on the Nobel Replace has considerably. Even rotational micro-movements on the higher with internal connections does not translate into micro-gaps because the internal connection itself protects the flexing of the fixation screw… and that is what causes a functional micro-gap between mating parts. Bone loss to the first thread was associated mostly with the Branemark external hex implant which had 3 things going against it… flexing of the fixation screw, countersinking and a smooth machined neck. To extrapolate the results of these design shortcomings to all other implants that are not Astra or Bicon is pure marketing rhetoric.

Question: Keeping bone level where you want it for tissue support and long-term esthetics seems to have value. Is the move from internal connections vs. external irrelevant as long as the milling specs for external hexes aren't too sloppy?

Answer: It is not that simple because I have a patent on friction fit external hex implants that eliminate rotational stability. Precision fit is important but less so with internal connections

Question: If Stability is the key then which company manufactures with the most precision?

Answer: The closest tolerances a manufacturer can consistently and economically hold is plus or minus 0.0005", which is 5/10,000 of an inch. Zimmer has to hold those tolerances to make their friction fit abutments. Implant Direct holds those tolerances in order to create what I call precision fit… less than ½ degree rotation. Nobel does not hold those tolerances… I know because I reverse engineered from their parts and it is evident when you put an abutment or transfer into an implant or implant analog.

Question: If you or your lab is using abutments from knock off companies that claim to fit in a variety of systems wouldn't the knock offs have built in more slop to account for the various manufacturing specifications? And would a company that out sources all manufacturing therefore have greater issues with tolerance?
Answer: The answer is maybe and yes. Implant Direct makes two implants with Nobel compatible tri-lobe connections and makes a full range of tri-lobe abutments. Any one that takes the time to fit our abutments into a Nobel implant or Nobel Abutments into our implants, and then compares that fit with placing a Nobel Abutment into a Nobel implant will see that our fits are better. Companies that outsource the manufacture of their products cannot hope to achieve and maintain close tolerances because they are doing the quality control when the parts arrive at the implant company and not when they come off the machine.
Statement: There appears to be an underlying truth, bone remodels away from the Implant Abutment connection or the Implant Crown connection, in most cases, with Straumann.
Answer: This is an overgeneralization and certainly not an underlying truth. There are thousands of documented cases with no bone loss even with the implant abutment junction at the crest of the bone. There are also many documented cases where bone resorbed 3mm on a one-piece Nobel Direct Implant.
Question: If the Micro-gap does not exist and if instead this were an issue of poor workmanship then why would companies spend so much R&D on new ideas when they could quickly and cheaply improve their specifications on precision fit and eliminate this problem? In turn delivering a higher return to investors without wasting money on pointless R&D. They must just enjoy wasting money I guess.
Answer: Companies spend money on new designs and research to differentiate their products form their competitors and/or in order to justify their high prices. If all they did were improving their precision, they would be no different that the high quality companies that already have good precision. In fact, Nobel should spend money and effort improving its precision fits but the relationship between precision and bone loss gets blurred by the overriding surgical factors so they

could never prove a clinical advantage. They will do better hiring more salespeople, like Astra and 3i to tell their marketing stories of no bone loss and faster osseointegration etc, all to justify their high prices.

Posted by: Jerry Niznick | Dec 30, 2006 12:50:30 AM

I have used lots of different implant systems including 3i, Astra, Nobel (2 or 3 different designs) and Bicon. I honestly get less bone loss around the abutment/implant junction of the Bicon system than the others and can only put this down to Bicon's claim of eliminating the microgap. I've often seen bone growing up above said junction. Dr. Niznick would therefore suggest that Bicon's components are of greater precision, which they would have to be to as there is no screw used to join the abutment to the implant.
I have absolutely no affiliation with any implant company (and think that many are guilty of spin), but have been particularly impressed with Bicon's system and its engineering.

Posted by: MS | Dec 30, 2006 6:33:14 AM

The Bicon type connection with mating 1.5 degree tapers, called Morris Taper has been around for 25 years dating back to Miter's implant where the post projected up from the implant and the abutment fit over it. While it provides great lateral stability, it has many prosthetic limitations that are not present on internal hex or tri-lobe connections. There have been reports of the narrow post fracturing and also coming loose under fixed bridges. Think about it. Anything that needs to be tapped in to create the connection can also come loose. That is why Ankylos combines a screw with the Morse Taper. There is no ability to do implant level transfers with the Bicon because there is no internal index. Implant level transfers made implant prosthetics easier than conventional impression procedures. Another shortcoming of the Bicon design is that it often requires a surgical step to remove bone at time of abutment attachment because it is placed sub-crestal. As far as preserving crestal bone your observations may be related to the fact that it is placed subcrestal and your observations about more bone loss with 3i may be due to micro-gap from an external hex connection. Once cannot tell without side-

by-side clinical evaluation of different types of connections, comparing Bicon to a good internal connection like the Screw-Vent Implant.

Posted by: Jerry Niznick | Dec 30, 2006 11:53:12 AM

Dear Jerry,

You are clearly hugely knowledgeable in this subject (way more than me), but there were some factual errors in your last post so please forgive my impertinence by saying the following;

The locking taper is a Morse Taper (not a Morris Taper).

You say there have been reports of the narrow 2mm post fracturing and you are absolutely correct - there is a 0.5% fracture rate when these are used to support unsplinted single molar and pre-molar crowns. Might I suggest that this is not unreasonable if using such a narrow component in this scenario? I would "never" use a narrow implant in this situation, but a 0.5% fracture rate still isn't bad! I believe that there has NEVER been a report of a 3mm post fracturing.

I have never heard, (from myself or anyone else), of a post coming loose under bridges, though my experience is fairly limited as I've only placed a little over 900 of them.

The dentists who restore my Bicon implants do implant-level impressions (if that's what you mean by "transfers") every day. I'm not sure why you don't think that's possible with Bicon, but I'm afraid you are mistaken.

There is another surgical step if you place Bicon implants as 2-stage implants, in exactly the same way as there is for every other implant system - including yours! If you place them one-stage or immediately loaded then there is obviously no second surgical stage.

As far as preserving crestal bone, my experience matches MS.

I hope you don't mind me correcting these points.

Kind Regards,

Bill Schaeffer

Posted by: Bill Schaeffer | Dec 30, 2006 12:41:06 PM

Dr. Niznick, if your implants were placed subcrestal (as you presume my Bicons are) would they also experience NO bone loss? - I cannot believe for one minute that they would.

I sometimes place Bicons subcrestal, but this is because I know I won't get bone shrinkage in the aesthetic zone - I don't believe that you can say the same about your implants because they have a microgap and this is why you have to place them at crestal level or supracrestal.

As for post fractures, Bill Schaeffer is correct - these pertain to the incorrect use of narrow implants to replace molar or premolar teeth.

The Bicon system isn't perfect (nor I believe, is any system...yet.), but bare in mind that many of Bicon's 'firsts' have been copied widely by other manufacturers including the factory-direct manufacturers.

Osteo-Ti is the latest manufacturer to copy the plateau design with a Morse/locking taper.

Dr. Niznick, if you could do me a Bicon type implant for half the price, I'd have your arm off!!

Best wishes to all for the New Year.

Posted by: MS | Dec 30, 2006 1:15:16 PM

Dr. Niznick thanks for your responses to questions in previous posts. Although I am not an Astra rep as you assumed. I agree that their are thousands of examples where crestal bone stays put on a variety of systems, and that bone thickness plays a roll in these results.

I appreciate your participation on these forums even if you are overly annoyed by business people who are not Dentists. Some of us are as interested in fully understanding dental implants as you, even though we lack a DDS.

Posted by: | Dec 30, 2006 3:59:20 PM

Response to Bill Schaefer:

1. Yes you are correct on the spelling of Morse.

2. With 900 Bicon implants you are certainly very experienced and a small number of fractures .5% when the implant is overloaded would be acceptable

although preferably avoided by using internal connect implants that transmit the stress to the top of the implant and not just to the post as with Bicon.
3. Implant level transfers maybe possible with Bicon using some Mickey-mouse index jig, but this is not as simple or as accurate as using a transfer component that fits into the implant and interdigitates with the internal hex, like the fixture mounts that are provided free on the Screw-Vent and with my new implants.
3. Bicon can be a 3 stage surgical procedure (1) inserting the implant (2) uncovering the implant and (3) countersinking the crest of the ridge to make room for seating the abutment. Bicon has drills specific for this function

Posted by: Jerry Niznick | Dec 30, 2006 9:24:44 PM

COMMENT:
Dr. Niznick, if your implants were placed subcrestal (as you presume my Bicons are) would they also experience NO bone loss? - I cannot believe for one minute that they would.
NIZNICK COMMENT: I do not think what you "believe" is relevant. What do you know for sure? Two-stage implants are not placed subcrestal for the same reason Bicon's shouldn't be placed subcrestal...it complicates the attachment of the abutment and gives up added bony support in the dense bone crestal region.
COMMENT: I sometimes place Bicons subcrestal, but this is because I know I won't get bone shrinkage in the aesthetic zone - I don't believe that you can say the same about your implants because they have a microgap and this is why you have to place them at crestal level or supracrestal.
NIZNICK RESPONSE: Same as above.
COMMENTS: The Bicon system isn't perfect (nor I believe, is any system...yet.),
NIZNICK'S COMMENTS: You are right that there may not be one perfect implant for all applications, but can you really compare the Bicon implant with the 5 different Application Specific Implants from Implant Direct that can all be inserted using the same drills? If you are that anti-microgap, then what about the ScrewDirect, ScrewIndirect and ReDirect one-piece implants from Implant Direct? No fracture concerns with a one-piece implant, no micro-gap, no

countersinking to attach an abutment since the abutment is already part of the implant, and best of all, no abutment to buy. Also, if you want a two-piece implant but are concerned about the micro-gap, there is the ScrewPlus, which has a 2mm neck like the ITI implant. But I can tell you with a great deal of certainty based on my 25 years manufacturing implants, that there has never been a better, stronger, more precise connection than the combination of overlapping an external bevel with a 2mm deep internal hex having less than 0.5 degrees of rotational wobble.

COMMENT: Dr. Niznick, if you could do me a Bicon type implant for half the price, I'd have your arm off!!

NIZNICK'S RESPONSE: I would sooner spend the time educating you as to the advantages of an internal hex connection than to copy a design that has so many prosthetic limitations.

COMMENT - many of Bicon's 'firsts' have been copied widely by other manufacturers including the factory-direct manufacturers

NIZNICK RESPONSE: As for Bicon's great innovations like factory direct marketing, I have a lot of respect for the owners of Bicon and how they have grown their business. I would sooner be known for design innovations like the internal connection, first sterile packaging, fixture-mount packaging, selective surfaces and about 25 other patented features many related to prosthetic simplicity and versatility. Ultimately, Implant Direct will be know for bringing factory direct sales to dentists worldwide with the most user friendly online shopping cart ordering system. More importantly, Implant Direct will be know for creating a price point shift in the implant industry with real factory direct pricing. Tell us what you pay for a Bicon implant, healing cap, transfer (if they have one) and abutment. Then compare that to $150 from Implant Direct for any of the five Application Specific implants.

Posted by: Jerry Niznick | Dec 30, 2006 10:07:16 PM

COMMENTS: I am not an Astra rep as you assumed. . I appreciate your participation on these forums even if you are overly annoyed by business people

who are not Dentists. Some of us are as interested in fully understanding dental implants as you, even though we lack a DDS.
NIZNICK RESPONSE: My annoyance is from people espousing a companies marketing story as if it were based on facts, and then not identifying their business relationship with that or some other company having a similarly BS marketing story. I see that you still did not identify yourself by name but thank you for at least admitting you have never placed an implant, are not a dentist, and thus everything you know about implants is based on what you heard from an implant company or one of its paid opinion leaders.

Posted by: Jerry Niznick | Dec 30, 2006 10:15:56 PM

Dear Dr. H,
the story around the implant connection is very old.
Many companies tried to maintain externally Hexed Implants in the Market due to the sales strategy....
Today they all went to internal connections that we knew since years was the best connection...
Astra, Niznick's design, Ankylos. Formerly Frialit II match all the requirements for implant and prosthetic connections stability reducing bacteria around the prosthetic abutment and allowing soft tissue to stay more predictable.
We knew it.... now companies try to" re-fried the eggs"....

Posted by: Albert Hall | Dec 31, 2006 10:00:10 AM

COMMENT: What amazes me is that all of the comments in this blog are just an opportunity to let Niznick use this space to promote his system. What a lack of academic or scientific or even technical discussion. Shame on us dentists, implant companies and their BS (Niznick's words) rule our practices and decision that affect our patients...people.
NIZNICK'S RESPONSE: You should be thankful for the Internet and this blog for the opportunity to expose the BS. When I established the Paragon web site in the late 1990's, I had a section entitled "Niznick Speaks Out" and it contained debate on many of the issues of that time. I also reprinted a number of Letters to the

Editors that I wrote and had been published since the first JOMI issue in 1986 responding to bias and misleading articles by Nobel paid spokesmen like Albrektsson, Sennerby and Pat Henry. The Web Blogs now provide instant access to expose controversial and questionable marketing claims whereas years ago this had to be confronted as best it could by salespeople - and you know who has the most number of sales people. I even published a booklet in the 1990's entitled Controversies. Today I have a link on my Website where post side-by-side comparison pictures of products and marketing claims.

When it comes down to selecting an implant system, it should be first made on the quality of the products, which requires that they make their own implants as a prerequisite. Second it should be made on the design features of the implants and prosthetic component - do they meet with your perspective of clinical needs. Thirdly would be price, packaging and customer support (ease of ordering). Ask yourself who is the brain trust behind Nobel, Zimmer, Straumann, 3i or Lifecore systems. Bet you cannot come up with a single name. Much easier question is who are the brains behind Core-Vent, Paragon, and Implant Direct, companies spanning 25 years in the industry. If you have to bet on that is right, it is nice to at least know whom you are betting on.

Posted by: Jerry Niznick | Dec 31, 2006 7:03:35 PM