

A New Perspective on Periodontal Treatment?

By Barbara A. Alba

Doctor of Dentistry magazine sat down with editorial board member **Robert A. Levine, D.D.S.**, Director of the Pennsylvania Center for Periodontics and Dental Implants, to discuss what impact recent articles about the periodontal/systemic disease link will have on treatment protocol in the future.

Dr. Levine is considered one of the region's foremost authorities on dental implants and periodontics. Board certified (Diplomate) by the American Board of Periodontology, he was chairman emeritus of the Division of Periodontics (1984-2003) at the Albert Einstein Medical Center. Currently, he is a clinical associate professor in postgraduate periodontics, perioprosthesis and implantology at the University of Pennsylvania School of Dental Medicine and a visiting lecturer at several prominent postgraduate dental programs throughout the country. Founder and Chairman of the Northeast Philadelphia Dental Implant/Periodontal Prosthesis Study Club, he is also a Fellow of the College of Physicians of Philadelphia.

Dr. Levine has been a featured expert on local and national television and radio, discussing dental implant therapy, regenerative and cosmetic periodontal procedures and

the link between periodontal disease and other serious systemic diseases. He is involved in long-term clinical studies on dental implant success and early/immediate loading, and is a Fellow of the prestigious International Team for Implantology (ITI) of Basel, Switzerland, which is made up of 400 clinicians, teachers and scientists from around the world. In fall 2008, he was one of the 99 dental specialists from 34 countries throughout the world who

were selected to participate in the fourth ITI Consensus Conference on Implant Dentistry (held this year in Stuttgart, Germany), which is called together every five years to establish the standards for treatments and procedures for the profession.

We sat down with Dr. Levine to discuss what impact, if any, the now widely reported link between periodontal and systemic diseases will have



on patient care and treatment in the coming years.

DOD: Why do you think there has been so much increased media attention on this subject lately? Isn't it something that the dental profession has been aware of for many years?

RL: We've had the statistical evidence showing an association between periodontal inflammation and several systemic diseases for close to two decades, but it has really only begun to penetrate the public awareness in the last few years. I would attribute that to two things: First of all, the number of systemic diseases that have been linked to periodontal

These serious systemic diseases do not recognize the difference between gingivitis and periodontitis. In other words, it's important for patients as well as health care professionals to realize that you do not need to have advanced periodontal disease for this systemic link to be at play.

— Dr. Robert Levine

disease has expanded. The list originally included heart disease, diabetes, respiratory diseases, stroke and preterm low birth weight, but we now know there are also links with Alzheimer's disease and cancer. Presumably, a wider range of medical specialists have been made aware of their dental colleagues' multicenter studies and are now talking to their patients about periodontal disease as a potential causal link. And if they are not, they should be.

Second, many of these serious diseases are at epidemic levels in our country, a byproduct of the alarming rise in obesity, poor nutrition, lack of exercise and smoking. As medical researchers investigate these causal elements, the media is made aware of their conclusions and are eager to report them to their readership. It should also be noted that as the "bell curve" of the baby boomer generation moves into their 50s and 60s, we simply have a greater percentage of the population who are at the age when these diseases become more prevalent. This generation is also more motivated than their parents' generation to save their teeth and be proactive with their health.

DOD: Do you find that patients who come to see you are more educated than they were in the past?

RL: You certainly have a segment of the population that takes their personal health management seriously and will educate themselves about these types of issues. There is so much information that can be found online now that it is not difficult to keep yourself informed if you want to be. I also want to point out that like anything on the Internet, there is also a fair amount of misinformation out there, so patients should be careful about believing everything they read.

But, I would say that the vast majority of patients still don't understand the potential health risks of ignoring periodontal disease. They assume that the worst that can happen is to lose their teeth; they can't even fathom the fact that it could be contributing to them losing their life.

DOD: How do you handle that type



Dr. Robert Levine often uses his laptop during a new-patient consultation to review educational material that is included on his website, www.padentalimplants.com.

of discussion with a patient?

RL: It is a natural subject matter for us because many of these diseases are also potential risk factors for periodontal or dental implant treatment success. During a new-patient consultation, we will interview the patient away from the clinical area in a nonthreatening space where we have an opportunity to establish a rapport. We'll talk about their chief complaint, and then discuss their oral health, compliance history, as well as their general health. We specifically look for potential risk factors, such as diabetes — whether they are already diagnosed with it, have it under control or have a family history that would suggest that they are at risk of developing it. We also discuss if they smoke, and if so, their desire to quit, their compliance to previous preventative dental care and any personal or family history for osteoporosis, heart disease as well as periodontal disease, since genetics do play a role in all three. I frequently use my laptop in these consultations, and refer the patient to my website for articles discussing the link between these diseases and poor oral health. I encourage them to visit my website at home and look for links to other organizational sites that contain similar articles or documentation. The fact that this amount of information is available at their disposal just gives the matter more credibility with the patient, and they do begin to realize how serious periodontal disease can be if left untreated. One of the most important points I try to drive home is that these serious systemic diseases do not recognize the difference between gingivitis and periodontitis. In

other words, you do not have to have advanced periodontal disease for this systemic link to be at play.

DOD: Beyond being able to better educate your patients and give them even more reason to take care of periodontal disease at its earliest possible stage, what other changes do you see in how you approach patient care based on the publication of these findings?

RL: The choice between restoration/preservation of natural dentition versus extraction with implant is never taken lightly. In the past, poor treatment alternatives for replacing teeth lead to heroic periodontal, restorative or endodontic efforts to save natural teeth. But holding on to teeth that are compromised from a periodontal or endodontic standpoint can allow for future bacterial attack or chronic infection, which can tax our bodies and contribute to the periodontal/systemic link.

What we know today regarding bacteriology of the pocket [with] periodontal disease — whether beginning, moderate or advanced — is that an anti-infective, anti-inflammation approach is recommended. As part of our standard phase one therapy (nonsurgical periodontal therapy, scaling and root planing for cases greater than or equal to 5-mm pockets), we place subgingival antibiotics — Atridox or Arrestin — and supplement with systemic oral antibiotics in the more advanced cases (greater than or equal to 6-mm pockets) for one week after phase one, either based on clinical presentation of the patient or subgingival culturing of the pocket flora if the patient presents with an "aggressive form of periodontitis." In both moderate and advanced periodontitis cases, we routinely prescribe doxycycline (20 mg) for the benefits of collagenase stabilization and thus inflammation reduction, which aids in healing of both soft and hard tissues and reduction of bleeding upon probing, which is the clinical indicator of improved periodontal health. This three-pronged approach is excellent in re-establishing signs of clinical

periodontal health and determining necessary phase two (periodontal surgical) therapy to further establish periodontal health. It's important to note that gingivitis used to be considered not as important on the scale as other periodontal diseases. However, as I mentioned earlier, the periodontal-systemic link does not differentiate between gingivitis and periodontitis. Therefore, we need to treat gingivitis with appropriate phase one therapy to prevent its continued inflammatory response and its contribution to the risk for other systemic diseases.

DOD: So, as for the question as to whether to go to great lengths to control periodontal disease and preserve natural teeth, versus resorting to extraction and dental implants, what is the bottom line?

RL: In the past, before the availability of relatively predictable implant therapy, periodontists and their patients went to great lengths to control periodontal inflammation and maintain an intact or relatively intact natural dentition, sometimes supplemented by complex fixed or removable prostheses. The decision now is not which periodontal therapy can maximize the longevity of a natural tooth, but at what point should a natural tooth with moderate to severe attachment loss be removed to ensure the availability of a sufficient volume and quality of bone to successfully support one or more implants and their restoration.

Today, we can successfully and predictably regenerate periodontal structures using guided tissue generation in conjunction with signaling molecules such as enamel-related matrix proteins (Emdogain) and PDGF (Gem-21). Research in the ecology of the etiologic biofilm that causes periodontal disease suggests that we are beginning to understand the buildup of the critical climax community of micro-organisms, and this new knowledge should open new doors for disease treatment focusing on the causative bacterial flora. In addition, we have a much better understanding of

the role of the susceptible host in the tissue destruction of periodontal disease. And in particular, we have a new appreciation of the inflammatory response. With this new understanding of inflammation and its resolution, we are poised to more effectively manage the resolution of periodontal disease prevention and treatment strategies. All in all, it couldn't be a more exciting time for periodontal disease prevention and treatment. And thankfully, in those instances in which periodontal disease cannot

be successfully treated, and a tooth or teeth are lost, dental implants are a predictable and successful treatment strategy for replacing missing teeth. Not only have we been able to boost success rates to over 98% with the state-of-the-art hydrophilic implant surface technology [SLActive], we have also been able to significantly reduce loading protocols from three to four months to three to four weeks. And that has been perhaps the most exciting development from a patient standpoint. ■

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