Guest Editorial

Reducing Technoapathy: A Critical Challenge for the High-quality and Ethical Practice

tek"·nō·ap'·ə·thē slow evaluation and adoption of new technology and discoveries that could benefit patient care.

For a profession that is strongly attracted to basic and clinical science, dentistry is actually struggling with just how to integrate some of the latest new technologies into daily clinical practice. Bioactive molecules to help with regeneration, new implant configurations, genetic susceptibility tests, sinus lift surgery, smoking cessation programs, and systemic disease risk associated with periodontitis are all examples of improvements that have recently been introduced but have had varying degrees of adoption by the profession.

The level of complacency is somewhat disconcerting. Technoapathy has reached levels too high to justify a "wait and see" position based on the claim that there is insufficient data. There are many constituencies pulling on the patient and the dental office. Cost/benefit, cost/effectiveness, insurance company policy, nomenclature, insurance coding, politics, greed, lack of effective training after dental school, regulatory approval processes, malpractice concerns, fear, and many other factors contribute to our slow integration of products into mainstream clinical care. Take, for example, the incredibly positive case that can be made for fluoride remineralization of incipient and early carious lesions. If insurance reimbursements were the same for diagnosing, treating, and monitoring compliance with fluoride remineralization treatments, less drilling and filling would be performed.

Keeping up with what is new and better and discarding what is less effective is the only way practitioners can remain viable, competitive, and ethical. But more important than simply keeping up with what is new is a continuous improvement of our skills, judgment, knowledge, and maturity.

Procedural excellence is the hallmark of an excellent practitioner. The restoration must not only fit properly but also look good. The implant must be placed in a position that is restorable, and the gingival graft must blend with the surrounding tissue and function as well as the native tissue. There are no substitutes for good hands and thoroughness. But knowing why and when to do something, without harming the patient, is as important as good performance.

Knowing what to do, as well as how to do it, is the hallmark of a good clinician. Excellent therapy has the best chance of happening if it succeeds the best diagnosis and patient risk assessment. One of the real-life problems that dentists face is that they are not compensated for taking the time to gather all of the information necessary to make a comprehensive diagnosis and risk assessment. I am sure that if reimbursement systems emphasized and paid for these services, much more effort would be placed on this part of patient care. How many of you actually spend more than 30 minutes discussing diagnosis, risks, and the significance of periodontal status to overall general health? Some practitioners still do not update medical status, take blood pressure at each visit, inquire about new medications, refer or treat for smoking cessation, or work with and educate the patient's physician.

Risk assessment is not the same as diagnosis. It is essential for the clinician to uncouple the two activities. Diagnosis is gathering quantitative and qualitative data that describe the disease, for example, pocket depths, bleeding on probing, and radiographic changes. Risk assessment is gathering information about factors that increase or decrease the chances of the event, disease, or outcome occurring. Prognostic variables include smoking, genetic susceptibility, diabetes, occlusion, iatrogenic factors, stress, and other modifying elements.

Identification of a person who is at greater risk for periodontitis is not the same as a diagnosis of the disease. People who are at risk can be perfectly healthy, and others who do not carry the inherited trait can have devastating disease. How does this happen? Periodontitis, like other chronic inflammatory diseases, is multifactorial. One needs a triggering mechanism before the genetic aspects can modify the development or severity of the disease.

Since other behavioral and systemic modifying factors also affect the patient's disease status, the dentist cannot always know which of the elements has contributed to the patient's condition at the time of diagnosis. When a dentist says, "I already know a patient is susceptible because I can see that they have advanced disease," it is only part of the story. The other, just as significant piece of information, is why the patient is susceptible. Is it because the patient smokes, is under stress, or is genetically at risk? Furthermore, the genetic aspects of susceptibility will still be operating once active therapy is completed and maintenance begins.

One of the more important questions relating to quality care is whether the clinician can determine the right level of treatment without knowing the patient's genetic risk for disease. Part of the confusion may be that there is an unclear picture of exactly what new and usable information a genetic susceptibility test actually provides for the clinician that is not already known. The response to this is extremely clear and straightforward. Neither the patient nor the doctor knows the patient's genetically determined response to plaque without having the laboratory test results. With the information on the level of risk, treatment can be adjusted to complement the patient's preferences and the clinician's recommendations.

In the January 1996 issue of *The International Journal of Periodontics and Restorative Dentistry* I was the coauthor (with Michael McGuire) of an editorial extolling the virtues of the evidence-based treatment process. This process has gained tremendous momentum, adaptation, and acceptance by virtually every segment of medicine and dentistry. In that editorial we talked about making treatment recommendations based on the best available evidence. Using evidence, we said, would help ensure that we were not fooling ourselves when we acclaimed or castigated a particular procedure or commercial product. But sometimes, under the umbrella of asking for evidence, we can sidestep the real issue preventing us from taking action. Are we asking because we are concerned that there is the potential for harm? Are we asking because we are concerned that there may be negligible benefit or unfavorable cost/benefit ratios? Or, are we asking because we do not understand the technology sufficiently enough to integrate it into practice? The answer obviously depends on the context and the individual situation.

We may also be selective about applying the data standard equally to different types of technology. Take, for example, the first years that osseointegrated implants "hit the scene." At that time there were virtually no controlled trials about the effectiveness of implants in partially edentulous mouths. Yet dentists far and near began to place implants in partially edentulous mouths. One reason for the open-arms reception is that it was a solution to many problems. Another reason for the endorsement is that it provided a reasonable potential for income.

Today, at the dawn of the biotechnology era when we are considering the use of new technology and information, we are faced with similar questions and feelings as when implants and regeneration were first introduced. If the clinician invokes the "is there enough evidence?" question and then applies the same quality of evidence test used for a new graft material or membrane, the biomedical advances meet or beat the standard. When it comes to discussing the risk of systemic disease due to periodontitis with patients, or integrating active smoking cessation programs, remineralization programs, and the genetic susceptibility test into practice, there is an additional important consideration: none of these biotechnologic discoveries has even moderate degrees of risk for harm associated with its application.

Embrace the new information. Be cautious for the right reasons, but do not become a victim of technoapathy. Give your patients the full range of options because that is precisely what you would want if you were the patient.

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