EDITORIAL

Time to Bid Adieu to Removable Dental Prostheses

The title of this editorial is an unusual and somewhat difficult one for me as a prosthodontist. I grew up with removable dental prostheses. These were a major portion of my education. Many of those removable dental prosthetic courses represented opportunities for dental students and for young clinicians to demonstrate their knowledge and skills in prosthodontics. Theories related to design were plentiful, and the logic behind those theories provided fertile ground for academic assessment. Although I appreciate the opportunity to ponder the theories associated with the direction of forces and the distribution of stresses from tissues that are dramatically different from each other relative to compressibility, the intellectual stimulation is not as satisfying as one might expect when considering the lack of differences in clinical performance related to the myriad of designs that are used in the world of removable dental prostheses.

Normally when a theory is developed, the next scholarly pursuit is to confirm or reject that theory. In the field of removable partial prosthodontics, the studies that have been used to validate theories were most often conducted in the laboratory rather than in the clinical setting. Elaborate testing devices were developed, simulation models created, and mathematical computations made to demonstrate the superiority of one technical approach over another. It was only after a large number of confirmatory in vitro studies were conducted that clinicians began to critically compare theories in the setting that mattered most, that of the oral cavity. The most surprising outcome associated with clinical testing was not that the elegant theories made little difference regarding the long-term performance of the prostheses, but instead was that a large number of patients voluntarily stopped using their prostheses. The reason for this discontinuance of usage is not clear, but the astute observer might suggest that one fundamental concern may be related to the differences between nature and nature substitutes.

In retrospect, we might wonder why this situation would take us by surprise. A prosthesis is nothing more than an artificial replacement for a missing body part. A patient has the option of using a removable prosthesis. In contrast, a fixed prosthesis is securely connected to other body parts or to intermediate devices. With fixed prostheses there is no easy opportunity to not use the prosthesis.

We should all understand that when a patient has an option, the desired outcome may not always occur. We have seen or heard it all too often. Some people use dental prostheses for cosmetic reasons only, removing the prosthesis to eat. Others use dental prostheses only when they eat and remove the prostheses at all other times. Obviously, the part-time utilizer cannot be considered to be a successfully treated dental patient.

There are many reasons for not using a dental prosthesis. Sometimes prostheses are uncomfortable or lacking in esthetics while some prostheses add little to the functions of speech, respiration, and mastication. Although most complaints regarding dental prostheses may be directed back to issues of comfort, function, or esthetics, there certainly are other concerns expressed by patients. Patients might describe issues related to the alteration of taste, encroachment on space, changes in temperature perception, or the cumbersome nature of the prosthesis. Listing all the reasons that patients cite for not using dental prostheses is beyond the scope of this editorial. Suffice it to say that removable dental prostheses are, despite many efforts to avoid this conclusion, poor replacements for natural teeth primarily because these prostheses differ dramatically from what nature provides.

None of these comments are new. So why do we bid adieu to removable dental prostheses now? The obvious answer to this question is that we currently have alternative solutions that more adequately achieve the goals of a prosthesis. Remember that a prosthesis is defined as a device that acts as an artificial replacement for a missing body part. As such, the most successful type of dental prosthesis is one that simulates nature rather than simply providing partial return of function, relative comfort, and/or cosmetic tooth replacement, albeit compromised. Dental implants can provide reliable support, retention, and stability for dental prostheses. The prostheses can be permanently affixed to the implants, thereby providing a more lifelike facsimile of the natural condition.

Obviously, dental implants have advanced the options that we can provide to our patients in replacing natural structures that have been lost to disease or trauma. As is always the case, however, our profession is not finished. Research and development continue to move the science and art of modern dentistry closer to the desired goal of true natural tooth replacement. The growth industry in implant dentistry is in the area of tissue engineering, likely in the field of stem cell research, rather than in the identification of a new implant surface or a new abutment configuration. Indeed, we will continue to gain knowledge

as it pertains to the dental implant, but our desired future should be in regeneration rather than simple replacement.

What comes next? The answer to this question is that we will ultimately say goodbye to dental implants when a biologic tooth replacement is predictably achieved. Although no one can describe the release date of the beta version of the biologic tooth replacement, it would be naive to think that this is not on the horizon. Perhaps the only consideration that could delay adoption of this technology is the recognition that the primary etiology of dental disease is brought about through neglect. Although one would hope that the gift of a third set of natural teeth would result in a much greater commitment on the part of the patient to maintain those teeth, in the absence of a vaccine that prevents dental caries and/or periodontal disease, risks to the natural dentition may maintain the position of the implant-supported prosthesis much as the removable dental prosthesis has lived beyond its anticipated or desired lifespan. Although we may say goodbye to those removable prostheses today, their successors, the implant prostheses, may well follow a similar path of remaining viable longer than anticipated simply because the logical replacement will only succeed if the diseases that cause tooth loss can be controlled.

Steven E. Eckert, DDS, MS
Editor-in-Chief