



Treatment planning: For them or us?

According to the 2008 American Dental Association Survey of New Dentists, the average combined educational and noneducational debt of a graduating student is \$231,740. Add in the cost of starting a private office, and it is not difficult to envision that new clinicians could feel considerable pressure to generate maximum income from the very first day of practice. Professional practice management consultants tell dental clients that such profits are more easily generated when performing expensive esthetic and prosthetic services.

Experienced practitioners are themselves not immune from adopting similar practice philosophies. When the country club payment is due, the Benz needs new tires, or the children's college tuition bills are sitting in the mailbox, even the seasoned clinician is tempted to become a more aggressive treatment planner.

Let's take an everyday situation facing the general restorative dentist: a patient who presents with one or more missing teeth. How does the practitioner decide what to do? The dental literature is replete with how to restore edentulous spaces along with the relative risks and benefits of each such option, but there is a relative dearth of information when trying to determine if the space requires restoration in the first place. Unfavorable sequelae following tooth extraction are usually mentioned only as secondary effects in prosthetic journal articles that describe specific restorative techniques.

Since ethical practice principles dictate the use of evidence-based knowledge whenever possible, making decisions in situations when little such information is available can become morally problematic. Moreover, legal standards of informed consent require that explanation of potential dental problems as well as the advantages and disadvantages of viable solutions must all be presented on the level of the patient's dental IQ. Arriving at this threshold becomes more difficult when there is insufficient reference material to consult.

One of the prevalent models in medical and dental education over the past several decades has been the theory of Problem-Based Learning (PBL). While some trace the ancient beginnings of such teaching to the question-and-answer dialectical approach of Socrates, its modern incarnation is generally regarded to have been formulated in the early 1970s at McMaster University in Hamilton, Ontario. The pedagogy is based upon presenting an ill-defined problem to a small set of students who at first do not have sufficient knowledge for a solution. The group is tasked with gathering and combining enough information to learn new ideas so that the given problem can be solved.

If this PBL concept could somehow be adapted to common clinical situations facing the solo practitioner, decisions that appear initially complex might become easier to make and ultimately more beneficial to both patient and doctor. When trying to decide whether a problem that requires a solution actually exists, consider an algorithm that consists of five measures: pain, function, esthetics, stability, and damage to other systems. The first three answers can be obtained from patient responses to direct questions, while the remaining two generally require the expanded knowledge base of the health care professional. Therapy is to be recommended only if there is an affirmative answer to one or more of the criteria. Otherwise, no "problem" exists and no treatment is necessary.

One caveat to remember: These standards are valid only for that given point in the patient's lifetime. What may not be currently defined as problematic could indeed change at some time in the future, reinforcing the necessity for regular recall appointments.

Applying our decision tree to the edentulous space referenced above, it becomes relatively simple to ask the patient if the space is causing any pain (physical or emotional), loss of function, or is an esthetic problem. If none of these elicit a positive response, the remaining criteria require

the practitioner's diagnostic skills along with evidence-based knowledge of all the patient's pertinent histories. Taken together, the answers to such inquiries then become a framework for the treating doctor to decide if a replacement is necessary.

How old was the patient when the tooth was removed? How long has the space been present? Why was the tooth removed? What has happened in the mouth since? Is the only reason to restore the space to prevent possible pathologic mesial migration, buccal movement, or rotation of teeth in the same arch or extrusion of one or more opposing teeth? Answers to these questions might give insight as to whether prosthetics is really preferable to the idea of "watchful waiting" so often used by our medical colleagues in determining the best course of treatment for life-threatening illnesses such as prostate cancer.

While some recent articles have in fact measured clinically significant movement of remaining teeth following extraction, other studies have chronicled cases in which no such movement has occurred even decades later. A complete examination of the current occlusion to include centric as well as excursive contacts could determine whether the teeth are "locked in," providing some awareness of impending pathologic movement. Maintaining study models that give an exact three-dimensional replication of the patient's dentition could be used to measure any future tooth movement.

Other unfavorable consequences can occur following extraction. If there is too much force for the remaining dentition, one or more of three "systems" (the teeth themselves, the supporting [periodontal] structure, or the temporomandibular joint [TMJ] complex) might break down. Some evidence also exists that certain gastrointestinal disturbances can be caused by insufficient mastication. How can the dentist evaluate these potential problems?

Careful observation for attrition or abfraction beyond normal for the patient's age, bone loss from primary occlusal trauma, or signs and symptoms of TMJ dysfunction could all indicate the need for prosthetic therapy. At times, the clinician must inform a patient that treatment is not as much to replace the missing teeth as it is to save the teeth and other oral structures that remain.

When other modifying factors such as the biologic, behavioral, personal, and financial aspects of patient motivation are also taken into consideration, the final question may become: When we look at an edentulous space, whose eyes are we really using?

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