

The Developing Practice

A few years ago I was having dinner with a colleague and the discussion turned to the current state of health care. Working in a community of 100,000 people where more than 30,000 are somehow involved in health care, it's not too unusual to have discussions about medicine or dentistry. My colleague was trained as an internal medicine physician about 40 years ago. His perspective was that medicine has changed rather dramatically in this time period. I can't imagine that there would be too many who would argue with this comment.

We discussed all the normal topics like work hours, educational programs, continuing education, experiences with staff, reimbursement, and a plethora of other things that make our practices interesting. The one part of the conversation that I have never forgotten was related to the gradual deterioration of diagnostic skills among young clinicians. My colleague made the statement that most recent medical graduates take a completely different approach to disease diagnosis than was seen in previous generations. Years ago diagnosis was established by building pieces of evidence on top of each other until a complete structure was developed, and that structure was called the diagnosis. Today the situation differs in that diagnosis is established by subtraction rather than addition. The current approach is to see patients, listen to their complaints, and refer them for a large variety of tests. The tests today are far more sophisticated than they ever were in the past, and it is certainly possible to keep applying different diagnostic tests to a patient until eventually all but one disease is ruled out—that is the diagnosis.

The interesting part is that both approaches reach a diagnosis. The transition from diagnosis by addition to diagnosis by subtraction is now virtually complete. A new trainee today would rarely venture an educated guess about a diagnosis simply on the basis of the history and physical. To illustrate how far medicine has gone in this direction I can say that I recently overheard 2 young physicians describing the virtual abandonment of the history and physical. One, while walking down the stairs at the end of the workday, said to the other, "You know, I see almost no reason why I ever need to examine a patient." His colleague responded in the affirmative, acknowledging that the sophistication of the diagnostic imaging and tests have relegated history and physical techniques to the history books.

Along the same line, a friend recently called to ask for advice regarding a cancer diagnosis. His goal was to eliminate the tumor if at all possible through surgical resection. Discussions with a number of surgeons revealed a variety of different options, including the traditional open surgical procedures and the more recently developed, minimally invasive, robotic surgical techniques. What became clear to my friend was that fewer and fewer clinicians are offering the traditional surgical approach. The folks using the robotic techniques made the very cogent argument that one should never consider a technique in a bloody field when the robot can work with clear vision and a steady hand no matter how many cups of coffee were consumed in the doctor's lounge. The traditional surgeons, and there are still a few, defended their approach primarily on the basis of the ability to feel the abnormal tissue and eliminate it.

It seems like the internal medicine physicians who are seeing less value in the physical examination process and the surgeons who are seeing less value in tactile sensation for identification of malignant tissues represent the new wave of medicine. This situation is also occurring in implant dentistry. We now have CT-guided surgery using implant placement guides and using navigational approaches to allow the surgeon, in real time, to work around anatomic structures identified with the imaging techniques. We have CAD/CAM technology that allows us to create implant components virtually and then transform the virtual design into a physical component. We have occlusal analysis technology that allows us to identify relative premature contacts without the use of articulating paper, shim stock, or articulated casts. Indeed, the technological advancements in dental practice have changed the face of the practice dramatically.

To a great extent we've accepted the notion that the newer approaches must be better than the older approaches. Certainly there is more precision involved in the placement of implants using sophisticated images that are available today to guide the surgeon in implant placement. Much more planning occurs before implants are placed, and this planning should lead to better implant position, more favorable esthetic results, and fewer long-term complications. By careful analysis of the remaining bone, clinicians may well be able to pick implant sites that are biologically more favorable than those that would have been identified using trial osteotomies, a technique of the past.

Obviously there are a number of benefits to the modern technology. The question that begs to be asked is whether there are any negative aspects. Certainly the cost of treatment is greater when sophisticated imaging is utilized for the majority of patients. Total treatment time, considering the time from the initial visit until the time of insertion of the definitive prosthesis, may increase even though the treatment is often described as being immediate in nature. Sometimes the immediate restoration of an implant occurs after many months of pretreatment planning, and many times this immediate restoration is provisional in nature. Beyond these 2 concerns, however, it seems that modern technology may prove very useful to the implant treatment team.

Perhaps the harshest reality faced by the clinician trained in traditional approaches is the realization that all those years of technical skill development may have been replaced by equipment, albeit highly sophisticated equipment. I remember a conversation with a surgical colleague when guided surgery was first introduced. At that point it seemed that the most technically difficult step in the process was administration of the anesthesia, because once the

patient was anesthetized the task for the surgeon was only to follow the prescription relative to drill sequence, drilling pressure, irrigation and the like. The incredible skill of the surgeon, which used to be so critical, was subordinated to the technology.

It is interesting how things develop. In dentistry we have all learned to use our clinical skills in the treatment of patients. I think most of us take pride in our ability to manage difficult situations using these technical skills. To a great extent this may be one of the greatest rewards of our practice. As technology develops, some of these skills will become less important, and the clinicians of tomorrow will need to identify other sources of pride in their careers. The last few decades of osseointegration have certainly been interesting; it will be fun to see how the next few develop.



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