



The Many Paths of Implant Dentistry

It is interesting to consider where the dental implant industry and implant research are going. Unfortunately,

they appear to be moving in different directions.

Industry is forging full-steam ahead toward immediate loading of implants, with splinted implants that limit micromotion and with single implants for which micromotion is controlled by the configuration of the implant, the biting force of the patient, and the approach to occlusion designed and executed by the dentist. Splinted implants, using rigid designs, make as much or possibly more sense than unloaded implants. The splint limits motion, while transmucosal loading or direct loading of a 1-stage implant from a provisional prosthesis is not well controlled. Nonsplinted implants, however, have a plethora of variables. Bone density may be sufficient for some implants of some designs in some loading conditions with some patients' chewing patterns, so they will work just fine. However, the sum of the "somes" is the giant question mark in this therapeutic equation. Frankly, there are still questions that need to be answered when immediate load is considered.

Science is forging ahead with approaches to reduce healing time. Surface modifications, chemical additives, and growth factors are being employed to speed up nature. However, few in the scientific community think that nature can be eliminated from the equation. Healing must still occur and the approaches to speed healing will not eliminate this biologic fact. Can healing occur in the face of limited micromotion? There are clinical examples of this, but the scientists do not like to see all the variables that industry accepts. Consequently, even at our premier research centers, there is a recognition that immediate load is not likely to become the routine treatment approach. Instead, shortened healing periods have or will become the rigor of the day due to the manipulations that are available through science.

Industry and research are just 2 of the groups immersed in the implant treatment think tanks. A

third group comprises clinicians who have observed unprecedented clinical failure in situations that should have worked, and a fourth group includes those who treat a variety of failures in their daily practices.

Even the most experienced practitioners sit in the third group from time to time. For years my colleagues and I at Mayo had been experiencing increasing implant success rates that we could routinely document through statistical methodology¹—that is, until a new innovation came along and we observed startling failure rates. For us it was a change in implant dimension that caused the problem. I reported more than a 30% failure rate at 1 year; this was significantly higher than any of the other experiences prior to that time.² Johnson reported gross breakdown around HA-coated implants coming from another office in his area but could not explain the incidence or etiology.³ Haas et al reported a 60% failure rate with maxillary coated implants at 100 months, whereas the survival rate earlier in their experience had been acceptable.⁴ And now Bergmann, at the 2005 Academy of Prosthodontics meeting, reported rapid loss of a stepped implant design at the 5-year mark but was not able to establish a definitive etiology for this loss. In all these examples, failures increased without warning using products that were previously exhibiting acceptable success rates. The common thread was a lack of clear etiology, which prevented us from learning from our complications.

The fourth group can be exemplified by Drs Spear, Kokich, and Matthews of Seattle, whose presentation at the 2005 Academy of Osseointegration meeting focused on the steps needed to correct therapeutic misadventures. Their lecture visited esthetic and functional failures when implant placement was not ideal or when soft tissue response did not proceed along the "normal" pathway. I wonder how many in the audience recognized that virtually every solution they offered involved healing. Every solution demanded tissue maturation. Fixing the problems required skill, cooperative effort, time, and a positive assist



from nature. Were they rejecting immediate therapy? I don't think so. But they sure were pointing out how difficult it is to correct misadventures.

When the world's most skilled, experienced, and knowledgeable clinicians present on a new topic, audience members with much less experience, scientific knowledge, and skill go home and try the procedure. Results vary, and the audience member becomes a skeptic at best, and a cynic at worst. The bottom line is that what the world's experts can do is just not so easily replicated.

At the end of the day, I think we get the point across by discussing complications. The Seattle group did this in their presentation, but the title was not as simple as "Complications." Maybe it should have been. Maybe it needs to be that simple to get the point across. With immediate load we will start to see immediate complications. Maybe this is acceptable if the complications are recognized immediately, or maybe this will be a new situation wherein an inexperienced clinician can compound problems by not managing them immediately. The last thing we need is to go back to the dark days of implantology with its highly variable prognosis.

In Dental Implant Continuing Education we need to recognize that not all of our audience members have the same level of experience. We should ask whether our main podium message of high tech is meeting the needs of our colleagues

who are newer to the field. Do we owe the audience an opportunity to listen to some speakers who show more standard treatment? I am not suggesting a 6-hour symposium on the hybrid prosthesis, but I do wonder if there is a way to help the folks who are doing fewer implants today but wish to do more tomorrow. Ultimately this is the only way to encourage everyone to integrate this wonderful technology into their practices.

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EDITOR'S INBOX

Dear Dr Sadan,

I was thrilled to read your recent editorial [QI 2005;36(5):327] about implant dentistry. I graduated from dental school in 1967, and after 1 year of residency and 2 years in the army, I opened my practice in 1971. As my practice has grown older, unfortunately, so have my patients and I. One thing that I have consistently seen in older patients is the failure of long span fixed bridges and splints.

The older and more frail the patient, the more difficult it is to treat these cases. This was really brought to my attention when my wife and I were left to care for our aged parents—one had dementia and the other had Parkinson's. When they were in nursing homes, I observed that the patients who had the most sophisticated dentistry were in the worst shape dentally. It was impossible for them or the nursing home staff to care for complex dental cases, so I made the decision to no

longer do long span fixed bridges and instead do either implants or partial dentures. I did not want any of my patients to go through the dental torture that I had seen in the nursing homes.

In 1995, my son joined my practice after a 2-year implant residency program at NYU (he is now on the faculty of this program). Our patients realize that we are committed to implant dentistry and have accepted it nicely. We practice in a very mixed community and have patients of all income levels.

It is time that implant dentistry is taught as "Standard of Care" to all dental students, and the insurance industry should accept it. We cannot allow them to determine what is the "Standard of Care."

Yours truly,
Harold R. Mendelson, DDS