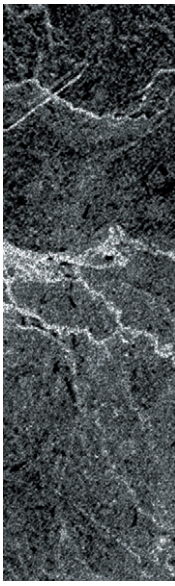

Perspectives

THE "BRAIN-FREE" PRACTICE

A couple of years ago, one of the prominent dental trade magazines conducted interviews with various "opinion leaders" in dentistry regarding their perspectives on the "metal-free practice." Much to my surprise, when the issue was published, I immediately noticed a quote I had made that was enlarged half the size of the page for emphasis. In extra large, bold letters, it read, "A Metal-Free Practice is a Brain Free Practice—Dr. Harald O. Heymann." Sensational quotes like this get folks' attention, so I guess, that is what precipitated their highlight of this specific quote that I had made. But trust me; I did not say that for sensationalism. I believe it to be an absolute fact. A metal-free practice is indeed a brain-free practice.

All too often, when thumbing through the local yellow pages or the pages of local magazines, I see full-page ads by dentists advertising just this approach: a "metal-free practice." Now, you and I know perfectly well that this is nothing more than a marketing mantra, because if someone truly maintained a practice free from the use of all metals, they would be denying patients some of the best restorative materials known to dentistry. In a true "metal-free practice," it would mean that the dentist does not offer implants. Could that type of practice really exist today? Who would argue that titanium implants have represented one of the most significant and important innovations ever in dentistry? In a true "metal-free practice," I guess this approach also would preclude the use of some of the newest ceramic systems based on zirconia and alumina; because unless the periodic tables have changed, zirconia and alumina are metals! Would dentists of this ilk really forsake some of the most promising all-ceramic systems being developed for the sake of being blindly committed to such a rigid philosophy? I seriously doubt it.

No, more likely, a "metal-free practice" is a cosmetics-oriented practice that does not use gold, porcelain-fused-to-metal (PFM) restorations, or at least does not use "mercury fillings," better known as amalgam restorations, in deference to resin-based restorations or other tooth-colored restoratives. Certainly, that is their prerogative; however, I would still stand by my original statement that, in this case, a "brain-free" practice still exists.

As I have maintained in previous Perspectives features, who can argue the durability of cast gold? In a classic retrospective clinical study published previously in the *Journal* by Dr. Terry Donovan and colleagues, Section Editor for Prosthodontics for the *Journal*, the exquisite work of Dr. R. V. Tucker was chronicled in a study involving 1,314 gold restorations over a maximum period of 52 years. It was noted in the results of this study that gold restoration over 40 years in service exhibited a success rate of 94.1%![1] Not even the best tooth-colored restorative material available today can even hope for this level of success. And yet, gold is often not even considered in deference to the pursuit of white teeth from ear to ear.

In my opinion, to ignore gold as a restorative option for our patients

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in certain areas of the mouth is to deny them the best restorative material ever made. I place a high degree of importance to esthetic dentistry in my practice at the UNC School of Dentistry. However, I still believe that, even in practices where esthetics is emphasized, gold should be an option in areas, such as in the restoration of second molars, where the appearance of gold is nonexistent or minimal. The truth is, when restoring the teeth of patients with extremely heavy parafunction (e.g., bruxism, clenching, etc.), gold may be the only restorative option that will even survive.

In a "metal-free" practice, PFM restorations also would not be available. Does that really make sense? In spite of the many promising all-ceramic systems, none has yet to demonstrate the survival rate of PFM in the posterior regions of the mouth.[2] All-ceramic systems have met with considerable success when restoring single anterior units.[3] However, noted prosthodontist Dr. Peter Schärer once suggested that, before an all-ceramic system is considered a proven option for both anterior and posterior teeth, it should demonstrate at least a 95% survival rate at 5 years.[4] Only the use of IPS Empress in its monolithic form may have possibly met this criterion for documented success. It is a superb homogeneous ceramic material where failure of a veneering porcelain is not even an option.

The interfacial bonds between the veneering porcelains and the underlying substrates have historically represented the weak link in virtually all heterogeneous ceramic systems. Only PFM has met Schärer's criterion for success to date when restoring posterior teeth. I am fully confident that many of the new technologies being explored today will eventually improve to the level of PFMs. But until such evidence is available regarding the long-term performance of new all-ceramic systems, PFM should still be considered the "gold standard" for the esthetic restoration of posterior teeth.

And finally, there is the most frequent underlying reason for the "metal-free" practice: dental amalgam. Clearly, amalgam is the "red-headed step child" of dentistry. Whether amalgam is used in a practice or not is a personal decision. However, environmental concerns are real when discussing the amalgam issue whether a dentist elects to place them or not. Regardless if one places amalgams, they nonetheless cannot avoid the need for amalgam's occasional removal. Control of amalgam in waste water is essential in either case for us to be responsible stewards of the environment.

Amalgam is also not very esthetic, and most certainly is not as conservative of tooth structure as is resin composite. These are all valid concerns regarding the use of dental amalgam. However, safety concerns should rarely be cited as a reason for maintaining a "metal-free" practice. Over 175 peer-reviewed studies are available to document the safety of dental amalgam. And once again, the Food and Drug Administration recently reaffirmed the safety of its use. If dentists are concerned about the release of organic mercury from amalgam restorations, they need to know that a patient will likely be exposed to more organic mercury from tuna sandwiches than from their silver fillings. Yet amalgam continues to be vilified by those unscrupulous dentists whose marketing efforts are not swayed by the years of scientific evidence that has time and time again affirmed the safety and efficacy of dental amalgam. They simply do not let the facts get in the way of their own self-serving agendas.

And ironically, what is it that these dentists use instead of amalgam? Resin composites. Please understand. I firmly believe that the overwhelming scientific evidence also affirms the safety of resin composites. But if I wanted to unethically vilify a dental material, ironically, there is probably more

information regarding the potential estrogenicity and carcinogenicity of Bisphenol-A to warrant exaggerated concerns for resin composites than exists to underscore the concerns for dental amalgam! In spite of what your opinion is of dental amalgam, it is singularly the only material immune to contamination effects that can be used to restore carious lesions in remote and often inaccessible locations, such as in the furcation of a molar or in other areas where proper isolation is impossible. It also is singularly the strongest, most durable material for dental foundations in posterior teeth. Additionally, it is vastly more forgiving of operator performance than any resin composite material.

The "death of dental amalgam" has been predicted now for some 25 years or longer. Untold numbers of editorials have told us so. At this point, I simply have to laugh. For all its faults, in my opinion, there still is a place for dental amalgam, and its death has been widely exaggerated. Admittedly, my first choice for the restoration of insipient lesions is resin composite because of its unique ability to be placed in a manner conservative of tooth structure. It is also the material of choice in our UNC School of Dentistry, although we still teach the use of dental amalgam as well. However, I believe that dental amalgam will be with us for many years to come because of its many attributes and forgiving nature.

In summary, the "metal-free" practice of today is most likely a misnomer for the "amalgam-free" practice for those who elect not to place those damned "mercury fillings." It is largely a marketing mantra that has very little relationship to the truth. In my opinion, if any dentist truly has a "metal-free" practice, he or she is indeed maintaining a "brain-free" practice.

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