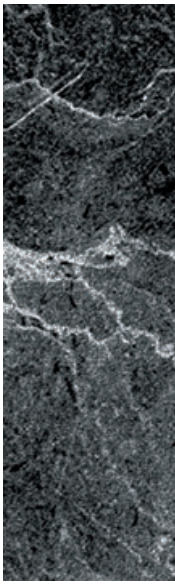

Perspectives

THE ENDURING MERITS OF GOLD

Contemporary esthetic and restorative dentistry largely focuses on the perceived qualities of tooth-colored materials for use in practice. Indeed, dentistry today is blessed with a myriad of high-quality resin composite restoratives for direct restorations and even more durable and esthetic ceramic systems for more extensive esthetic treatments. Our esthetic options in restorative materials have never been greater, and ever-improving materials are being introduced regularly to the dental marketplace.

However, even in light of patients' demands and the dentists' desires for highly esthetic restorations, dentists must not abandon the most time-proven material in all of dentistry: gold. Although the *Journal of Esthetic and Restorative Dentistry* largely publishes articles devoted to the esthetic restoration of teeth, the *Journal* is pleased to include in this issue excellent articles from Drs. Richard Stevenson and Jane Refela, which address various clinical applications of gold restorations. Gold still is irrefutably the finest restorative material ever used in dentistry. In this issue, Parts I and II of this excellent treatise review the principles for the conservative use of this time-proven material in a variety of applications.

Who can argue with gold's durability? In a classic retrospective clinical study published previously in the journal by Dr. Terry Donovan et al., 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 seems to be the "red-headed step-child" in a contemporary practice devoted largely to esthetic dentistry.

Why has gold's use declined? Well, as it relates specifically to gold inlays and onlays, in statewide surveys conducted by our Department of Operative Dentistry at University of North Carolina in 1980 and 1990, fewer than 5% of dentists regularly offered gold inlays or onlays in their dental practices. I dare say that the number unfortunately is even far fewer today. A number of reasons were cited for this declining use by dentists. First and foremost, patients simply did not want gold, owing to esthetic concerns. Second, dentists found it easier and less time consuming to prepare a tooth for a full crown (gold or PFM) than for an inlay or onlay. Third, dentists noted that consistently high-quality lab support was more difficult to attain in the fabrication of gold inlays and onlays.

These hard facts were difficult to accept by those in our Department of Operative Dentistry because of our high regard for gold. But, in light of a very limited amount of curriculum time and a substantial reduction in the demand from our own patients for these procedures in our student clinics, we made the difficult decision to reduce our

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efforts in teaching gold inlays and onlays in deference to procedures that our surveys revealed were increasingly being carried out in contemporary practices.

These new procedures included porcelain veneers, posterior composites, diastema closure, ceramic inlays and onlays, and other conservative esthetic procedures. Of course, this decision was not made lightly. I am sure that most other dental schools have faced similar difficult decisions regarding the use of gold. We still teach the fundamentals of gold inlay and onlay preparations but, clearly, we no longer have the core curriculum time nor the patient demand in our clinics to warrant the extensive efforts needed to teach our students these procedures to a level of clinical proficiency.

Fortunately, our school and others still have offered elective courses that do allow students to avail themselves of greater exposure and training in the field of gold inlays and onlays. But the once-dominant presence in the core curriculum is largely gone. Furthermore, those devoted to maintaining this art have formed study clubs and organizations, such as the numerous chapters of R.V. Tucker Study Clubs and the Academy of Golf Foil Operators, both of which are committed to ensuring that these time-proven procedures continue to endure in dentistry.

The undeniable truth remains: gold is not as readily accepted or used in dentistry to the extent that it was in the past. However, is there still a place for this superb material? In my opinion, absolutely yes, even if only for crowns. As I have been quoted in the past, "a metal-free practice is a brain-free practice," and research clearly substantiates that position. To not offer patients the option of gold in certain areas of the mouth is to deny them the best restorative material ever made. 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. In fact, in patients with extremely heavy parafunction such as those exhibiting uncontrollable chronic clenching and/or bruxism, it may be the only restorative option that will even survive.

No material is more conservative of tooth structure and resistant to fracture in an area of high stress than gold. Bite forces on second molars are considerably higher than on anterior teeth, and fracture rates for all-ceramic crowns are subsequently much higher on second molars than on anterior teeth (52% for second molars versus 0% for maxillary lateral incisors at 14 years).[2] If esthetics is not critical, why not offer patients the most durable option we know? Why risk the fracture of tooth-colored resins or ceramics if esthetics is a moot consideration? In my experience, patients often will accept gold if the dentist will simply take time to expound upon its merits and demonstrate how objectionable esthetic concerns simply do not exist in some posterior areas, such as in the restoration of second molars.

Clearly, many new and exciting options in the realm of esthetic ceramic restorative materials exist and are in development. I enthusiastically embrace these new high-tech options for use in our practices once research has soundly validated their clinical performance. However, I believe that it will still be many years before dentistry discovers a material more conservative, strong, and enduring than gold!

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