Prosthodontics 21: A New Beginning

Three decades of clinical teaching have taught me the importance of introducing a formal lecture, or an attempt to be profound, with an erudite quote. As a result, I have compiled a dossier of others' enduring sayings, statements far more insightful than any observation I could ever hope to articulate. This editorial is no exception. Recognizing the sense of privilege implicit in having these paragraphs printed in my discipline's four leading journals, I found myself agonizing over the choice of quote which would be strikingly relevant. I finally settled on one I had used on prior occasions. I am of course referring to the late Lewis Thomas's compelling clinical observation that,

> It has been our perpetual habit to try anything, on the slimmest of chances, the thinnest of hopes, empirically and wishfully, and we have proved to ourselves over and over again that the approach doesn't work well. Bleeding, cupping, and purging are the classical illustrations (in medicine), but we have plenty of more recent examples to be embarrassed about. We have been hoaxed along by comparable substitutes for technology right up to the present. There is no question about our good intentions in this matter: we all hanker collectively, to become applied scientists as soon as we can, overnight if possible.

The eminent physician could very well have been describing the state of prosthodontics as an applied clinical science. For too long our discipline has been built on the tenet of ingenious salvage, but has languished at the low end of the scientific heap. We have allowed ourselves to be perplexed in part by the ruthless demands of accuracy in our technical performances. We have also been obsessed with micromeasurements and the severe standards of a handicraft approach to problem solving. While this state of affairs did not necessarily preclude intellectual development, it tended to stifle it. Our clinical practices became increasingly defined by nearly exclusive concerns with materials and techniques, often at the expense of biologically determined longitudinal outcomes. Gradually an atmosphere dominated by commercialism evolved, and newsletters, rather than refereed, good science, laid siege to the dentist's intellect. The threat of such a graffiti-like approach to clinical development inevitably favored the visceral over the cerebral. The need of scientific methodology was not demanded, and the educational objective frequently shifted to myth manufacturing, which only served to make one group or another feel good. The primacy of the anecdote was asserted, and truth became a chimera with the stronger opinion prevailing.

Together with several of my mid- and late-career colleagues in clinical academia, I had begun to bemoan the apparent dead-end status of my predilected clinical art. I had never doubted the opportunity prosthodontics gave me to enrich people's lives. My colleagues in full-time practice did this all the time with a large measure of gratifying results. However, a lingering sense of dissatisfaction prevailed as maladaptive edentulous patients became more maladaptive, and many patients with advanced periodontal disease did not respond predictably to heroic prosthodontic-periodontic initiatives. It gradually became clear that in the context of edentulous morphology, time was not a great healer but a great deformer.

Furthermore, the therapeutic ratio of a great deal of what I did as a clinician was based on arbitrary considerations, rather than scientifically determined treatment outcomes equated with the biologic price implicit in most prosthodontic interventions.

Over the years, other health fields have also found themselves marooned in the same predicament. They recognized the need for a leap of science (as opposed to past leaps of faith) by demanding basic science and therapy effectiveness outcome studies. They administered the authentic electric shock of the novel science of clinical epidemiology and incorporated the new "think" into their educational and practice paradigms.

In 1986, James D. Anderson, one of my Toronto prosthodontic colleagues, spent his sabbatical year studying clinical epidemiology at the McMaster University Medical School in Hamilton, Ontario. His experience exposed him to the practice of clinical epidemiology or the "science of the art of medicine," and David L. Sackett et al's seminal text. Physicians, dentists, and other health practitioners who trained at McMaster

This guest editorial is being published concurrently in the September 1994 issues of The International Journal of Prosthodontics, The International Journal of Oral & Maxillofacial Implants, Journal of Prosthetic Dentistry, and Journal of Prosthodontics.

were reminded of the three challenges facing every clinician every day: reaching the correct diagnosis, selecting the management that does more good than harm, and keeping up to date with useful advances in one's health field. They were also reminded that all three challenges had to be resolved in an evidence-based context. Jim returned to Toronto convinced that dentistry could benefit from a similar approach and embarked upon a diligent and painstaking effort to convert those of us who worked with him.

Several years later, following a circuitous route which started as a proposal at a *Journal of Prosthetic Dentistry* editorial meeting and progressed through the Research Committee's recommendations at Prosthodontics 21, the notion of midwifing our discipline into a clinical epidemiological context took shape under the aegis of the Federation of Prosthodontic Organizations. A research symposium committee was struck under the able chairmanship of Dr Dale Smith, and it included Drs Steve Bergen, Cosmo DeSteno, Jack Gerrow, Robert Schweitzer, Jim Anderson, and myself. Our remit was to negotiate a teaching/training contract with McMaster Medical School with the specific intent of training 10 prosthodontic educators for a future role in so-called research symposia which would acquaint graduate course directors in North America with the McMaster method.

All 10 of us completed an apprenticeship which taught us that we were, above all, not substituting a new tyranny of unachievable "methodologic rigor" for the old tyranny of an unteachable "clinical art." We learned the ingredients of an intellectual paradigm that Drs George P. Browman, Gordon H. Guyatt, Mark N. Levine, and Ray Gilbert had packaged so brilliantly for us: that the elements of evidence-based learning must be integrated with those of the other basic sciences (such as morphology, neurophysiology, and biomaterials); that this approach to diagnosis, management, and keeping up to date must be fed by an increasing body of valid and clinically useful new knowledge, generated from sound, relevant clinical research (our McMaster teachers emphasized the fact that without this new knowledge all our learned efforts could rapidly degenerate into nihilism and therapeutic paralysis); that clinical epidemiology must continue to generate new strategies and tactics for identifying and solving problems in diagnosis, management, and keeping up to date, otherwise risking the subservience of this basic science to clinical and information technology; and finally, that this approach must be applied with abundant humility, recognizing that much of its justification stems from its ability to explain and to teach, not to replace, the art of dentistry.

This is a particularly opportune time for our discipline to lead the dental team. The very nature of our clinical remit demands leadership in clinical decision making for our patients. It is my profound conviction that the prosthodontic community can assert strong leadership, but it can only do so with a stronger scientific commitment. We have already been admirably served by the administrative and fiscal initiatives of the Federation of Prosthodontic Organizations, and its constituent organizations, and by the generosity of dental companies and publishing houses. The American College of Prosthodontists provided both direction and funds to underwrite developments to date. We now need ongoing evidence of leadership and continued generosity if this scientific threshold is to be crossed by representatives of all North America's advanced education prosthodontic programs. The intellectual yield for all of dentistry, and, above all, the enrichment of our patients' lives are bound to grow even further as a result of the proposed symposium as we move forward towards a new era for prosthodontics.

George A. Zarb, BChD, DDS, MS,
MS, FRCD(C), Dr Odont (HC)
Faculty of Dentistry
University of Toronto

Ten prosthodontists participated in two 1-week-long intensive courses, held a year apart, and are now preparing to lead the first Prosthodontic Research Symposium in June 1995. Front row, seated left to right: Drs Alan Carr, Glen McGivney, Rhonda Jacob, George Zarb, Patrick Lloyd. Standing: Drs Gary Goldstein, David Felton, James Anderson, Jack Preston, Brien Lang.