

Preprosthetic Surgery, Fault Lines, and Scholarly Leadership: A Joint Editorial



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The adjunctive merits of preprosthetic surgical interventions were significantly advanced by the 1982 introduction of the osseointegration technique. An already established Prosthodontic/Surgical synergy was compellingly strengthened by the relative ease of P.I. Brånemark's strict protocol of implanting titanium teeth root analogs in diverse orofacial host bone sites. Three determinants of similar scientifically driven benchmark events—speed of change, a new disruptive biotechnology, and an accompanying system application revolution—rapidly followed and reshaped dental educational and practice narratives, followed by four popular convictions:

1. Modern dental implants rarely fail to osseointegrate and are rarely accompanied by consequential surgical morbidity. Infrequent osseointegration failures are reversible through repeat surgical interventions.
2. Targeted host bone implant locations are readily improved to ensure comparable favorable prognoses encountered in native bone.
3. Numerous implant experiences claim optimal microscopic and macroscopic design features that encourage routine immediate loading protocols.
4. Implant prosthodontic therapy is now the routine standard of care.

A virtual 'implantocracy' in both general practice and dental specialty disciplines quickly emerged, with prosthodontics somewhat slow off the mark in developing scholarly leadership in the new field. In the

meantime, the demarcation of treatment decisions along specialty lines blurred as the general practitioner became the prime target of commercially driven initiatives.

Practice responsibility fault lines also emerged as dentists gradually began to operate in an era of unprecedented awareness of what patients want and need, as opposed to what professionals insisted was best for them. The prosthodontic discipline responded with a belated drive to recruit implant prosthodontics in the care of the elderly, analysis and articulated outcomes for viable standards of care, and slow outgrowing of reliance on components and techniques—including facebows, articulators, implant designs and axiographic devices. Above all, little was forthcoming that reflected a strong commitment to the rigor of evaluating normative outcome data and functional adaptation.

A carefully nurtured and evolved repertoire of ingenious salvage procedures is now increasingly threatened by a populist implants-first belief that usurps, rather than expands, the traditional prosthodontic treatment spectrum. Furthermore, claims of new standards of care have become an integral part of diverse groups' redefined mandates and individual webpage advertising.

A renewed opportunity to focus on the established axiom that good dentistry is not reducible to tidy formulas or rigidly ordered credos has not been readily forthcoming, nor has the demand for scrupulous observational skills that overcome the absence of hard scientific evidence to justify an all-out implant approach to all forms of partial and complete edentulism that could preclude unnecessary and misguided interventions.

It is therefore alarming that a frequently cited contraindication (other than expense) to implant treatment is a risk of so-called peri-implantitis, albeit unsupported by a robust scientific literature. This emergent belief has exposed newer fault lines in clinical decision making in spite of a debate dominated by simplistic, even spurious correlations. The argument has been reduced to a simple binary; it's either about bugs, or else a foreign body reaction; and you are either on one side or the other, or else on the side of darkness and ignorance. A prosthodontic-related window—even an opaque one—has still not been adequately opened on the subject.

This lapse is dismaying given the discipline's longstanding efforts to understand the vagaries of



edentulous residual ridge reduction. Numerous published works underscore the unpredictable outcomes of time-dependent alveolar bone changes as influenced by gender, age, site specificity, prosthesis-wearing history, and the ratio of remaining alveolar bone to basal bone. Furthermore, the role of additional complex changes catalyzed by implant placement in such sites, plus the likely added vulnerability of the implant host-tissue interface exposed to adverse plaque presence, is far from understood.

Originally, as a result of scrupulous observation and measurement correlations associated with implant placement, osseointegration was thought to simulate the induction of an ankylotic response. Initial documentation of this response was limited to the anterior zones of the edentulous jaws, where the bulk of implant length was frequently placed in basal bone and where its volume did not routinely encroach upon the surrounding residual cervical bone volume usually found in alveolar bone.

In retrospect, it is now tempting to suggest that early reports of larger numbers of maxillary implant failures were due to this comparative volumetric discrepancy. In addition, subsequent near-populist implant prescriptions are likely to have an increased risk of marginal bone resorption, an observation that is far more easily ascribed to an infection-driven process than to a clinical judgment one.

The result has been competing ideologies—opposing narratives that suggest epistemologic warfare, with the winner imposing a dominant paradigm. The crucial concern of applied surgical judgment and skills in the understanding of bone behavior around implants appears to have been overlooked.

Our discipline cannot remain deaf to this inadequately informed predicament. It needs to challenge any approach based on an imperfect understanding

of the nature of the induced, multifactorial determinants of a healing or healed osseointegration response. Evolved improvements in imaging techniques accompanied by brilliant surgical skills now need to be matched by similar advances in the understanding of what precisely determines the integrity of healed bone around an implant in terms of both time and occlusal force-dependent contexts, as well as in the totality of patient- and clinician-mediated determinants.

We have been far too slow in taking the initiative in Implant Prosthodontic leadership. An assumption that the scholarly pedigree of our discipline, or of any other, is unassailable cannot go unchallenged. Ongoing health care leadership increasingly depends on scholarly excellence; it is the latter that determines any dental discipline's academic and professional stature and credibility.

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This editorial's authors benefitted immeasurably from their combined British and American dental educational systems and have enjoyed editorial associations with both journals. They continue to share a profound commitment to a continuing affirmation of our discipline's leadership in clinical scholarship.