

Evidence-based dentistry and the curious case of instant gratification

In the last half century, the world has experienced accelerated technological progress based mainly on improvements in computer processing capacity. A stunning example is that the Apollo missions that landed man on the moon in 1969 were sustained by computers that paled in comparison to a modern iPhone. In fact, in 2019, an iPhone with 4GB of RAM would have 1 million times more memory, and more than 7 million times more storage than the computer powering the Apollo 11 mission.¹

This year, I celebrated 30 years since my graduation from dental school. During these three decades, the profession of dentistry adopted as standard-of-care osseointegrated implants, restorative materials that mostly replaced amalgam and metal-based crowns, digital restorative flows, computer-guided surgery, to name a few. In recent years, supported by the continuous increase in computer power, artificial intelligence and virtual/augmented reality emerged as technologies with the potential to further modify the way dentistry is practiced.

As a young resident, I was fortunate to participate in professional events where dentists who set the principles of perio-prosthesis, such as Dr Morton Amsterdam, presented long-lasting restorative cases. These extensive, tooth-supported restorations, retained by abutments with severely reduced periodontal support, clearly defied Ante's law. This postulate, put forth in 1926, stated that "the total periodontal membrane area of the abutment teeth must equal or exceed that of the teeth to be replaced."² Inspired by the perio-prosthesis philosophy, my residency mentors taught us to bring our patients to "perfect" periodontal health and perform meticulous occlusal adjustments intended to dissipate stresses on teeth, especially in periodontally compromised cases. Many years later, it was proven that Ante's law is not evidence-based and that "masticatory function could be established and maintained in subjects receiving fixed partial dentures on abutment teeth with severely reduced but healthy periodontal tissue support," with similar survival rates shown by restorations placed in patients "without severely periodontally compromised dentitions."³

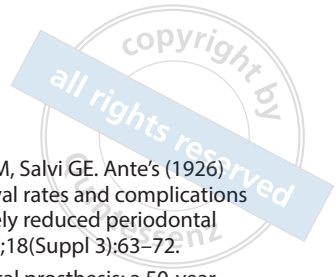
A few years ago, I treated a patient who was missing one maxillary anterior tooth and had a very deep anterior overbite. We convinced the patient to undergo orthodontic treatment

that involved erupting posterior teeth to achieve enough restorative space for an anterior implant-supported restoration. As a beneficial side effect, the orthodontic treatment also improved several minor periodontal defects in her posterior dentition. After several months of treatment, the orthodontist reached a spectacular result and turned a very difficult case into a straightforward situation. At this point, the patient "disappeared," only to return 3 years later in response to a recall letter. To our surprise, the patient had all maxillary teeth extracted and restored with an all-on-4 fixed restoration. She mentioned that a friend referred her to a clinic that provided her with "teeth in a day" and she was very happy with the result, because she was frustrated with the pace of our treatment.

The case above, probably one of the most extreme cases I observed in my career, illustrates the current state of mind that "leaks" from practitioners to patients—the need for instant gratification. New technologies allow us to deliver same-session fixed restorations, to immediately load implants, and to bleach teeth in less than an hour. Patients expect us to deliver these heavily advertised results, and dental practitioners oblige. I routinely ask my students what the best implant is; without exception the answer involves one or more brands of commercially available implants. I am still waiting for the student who says that the best implant is a tooth, even if it requires a root canal or some periodontal treatment.

Saving periodontally compromised teeth involves long treatments, meticulous home hygiene, testing the occlusal scheme on provisional restorations, and a long-term maintenance commitment both from the practitioner and the patient. This stands in stark contrast with patients' expectations to receive fast, esthetic, and cost-efficient solutions. Furthermore, many young graduates feel more comfortable extracting compromised teeth and placing implants – an apparent win-win situation.

Progress caused us to focus on new treatment modalities and almost to forget that we have some old, evidence-based tools in our armamentarium. The same perio-prosthesis concepts relevant to the treatment of the dentition mutilated by periodontal disease are applicable to implant restorations: diagnosis, treatment planning, sequence of therapy, esthetics, periodontal/peri-



implant perspectives, occlusal concepts and splinting, failures and complications management, maintenance, etc.^{4,5}

Maybe we should consider returning to the basics of the art and science of dentistry, and remember that the best treatment route may not involve instant gratification. To be clear, preserving a compromised dentition is not for everyone, but both the doctor and the patient who engage in this journey will benefit from it.

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