

Revised Success Criteria: A Vision to Meet Frailty and Dependency in Implant Patients

Long-term predictability of endosseous implants appears to have exceeded the initial expectations of early implant proponents. Today, we see patients with successful implants that were placed some 30 or more years ago. In contrast to the environment where they have been placed, these implants will not change. Hence, in response to the aging of the population, a paradigm shift in long-term management of dental implants should be considered.

Physiologic aging normally creates deterioration of vision, tactile sensitivity, and dexterity, rendering denture management and oral hygiene difficult. In addition, age often goes hand in hand with frailty and multimorbidity, potentially leading to dependency in the activities of daily living and a shift in priorities in a person's life. Over the years, ongoing tooth loss may occur, requiring a new restorative treatment concept. While it is well established that age alone is not a contraindication for successful implant therapy, do we sufficiently consider what aging implies in our treatment planning?

The success criteria for implants as defined by Albrektsson et al¹ and Buser et al² are widely cited and generally accepted. These criteria describe the absence of persistent subjective complaints, such as pain, foreign body sensation, and/or dysesthesia; absence of recurrent peri-implant infection with suppuration, of mobility, of continuous radiolucency around the implant; and the possibility for restoration. Without questioning the relevance of these issues, additional observations have to be taken into consideration, given the functional decline of frail and dependent people where autonomy becomes a concern.

Can the patient independently handle and manage the prosthesis? Is a denture still successful when it is sitting in a bathroom cupboard? It seems therefore imperative to add to the implant success criteria a newly defined criterion: "being able to autonomously manage and clean the restoration." Autonomy is a confirmed key aspect of successful aging. Independently managing a dental prosthesis seems important with this respect. Dental prostheses should therefore be planned and designed to meet the functional capacities of the patient—now and in the future. This does not mean that old and very old patients cannot benefit from the progress in implant dentistry, but rather that an implant prosthesis needs to be sustainable, yet modifiable and designed for adaptation to future needs.

Hence, "backing-off" the sophistication of a dental restoration to a more straightforward and manageable solution may be indicated later in life. Today's fixed implant reconstructions should be designed to be tomorrow's overdentures, at first retained by a bar, subsequently stud-type or ball attachments, and finally, in a palliative care setting, by low-retention magnets. The widespread belief that patients request the maximum retention for a removable prosthesis is not true for frail elders, most of whom are profoundly distressed when provided with an appliance that is too retentive.

The contemporary role of the dentist implies a lifelong accompaniment along with functional decline and a continuous adaptation of the denture retention to what the patient can still manage autonomously. The practical translation of this paradigm would be the provision of fixed and removable implant reconstructions, which could later be downgraded with little change in shape, vertical height, occlusion, and appearance, hence not challenging the reduced neuroplasticity observed later in life. Computer-aided design/computer-assisted manufacture (CAD/CAM) will facilitate this process in the future by providing very similar, but simplified versions of the dental prosthesis, at a moderate cost and even without the traditional impression that patients dislike so much.

Ultimately, the elder patient may opt to refrain from denture wearing or limit their use during meals and social occasions. Especially in patients presenting with hyposalivation, sensitive mucosa, or dementia, implant dentures require a design that precludes discomfort and injury from attachment systems while the denture is not worn. The "back-off" strategy also aims to limit biofilm accumulation, which presents a considerable risk for aspiration pneumonia, in particular in patients with swallowing disorders³ or wearing their dentures during the night.⁴ Dentistry has to evolve along with the prolonged lifespan of our patients. Under the condition that close monitoring of the patient and, when appropriate, a stepwise "desophistication" of the implant denture is assured, patients can—and should—benefit from the progress in modern implant dentistry until very late in life.

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