Twenty-Five Years of the Tunnel Approach to Treat Multiple Gingival Recessions

Twenty-five years ago, a landmark article on the treatment of multiple adjacent gingival recessions using the "tunnel" surgical approach was published in *The International Journal of Periodontics & Restorative Dentistry*.[1] As described in the article by Zabalegui et al, the technique aimed to improve esthetic results, reduce morbidity, and increase predictability in the treatment of Miller Class I and II multiple adjacent recessions.[2] The described surgical technique was based on previous publications reporting the use of a partial-thickness flap to allow the submucosal placement of a connective tissue graft, providing the bilaminar vascular supply without elevating the interdental papillae or drawing vertical incisions.[3–6] The originality of the surgical technique proposed in that publication was the first use of the term "tunnel" and the focus on treating multiple adjacent gingival recessions in a single procedure.

Looking back 25 years, the tunnel technique was one more step forward in the treatment of gingival recessions at a time when the concept of periodontal plastic surgery was starting to solidify through the understanding of the biology of healing[7] and the development of new minimally invasive surgical approaches using advanced instruments.

During this golden era of mucogingival surgery, the scientific evidence from clinical studies, as demonstrated in recent systematic reviews,[8] validated the use of a coronally advanced flap to cover a connective tissue graft positioned over the treated recessions, and this became the standard of care for the treatment of localized multiple adjacent recession defects.[9,10] Other investigations studied the key factors needed to achieve successful outcomes.[11] The tunnel technique has been very well accepted among clinicians, probably due to its conservative and minimally invasive nature, which allows rapid healing, maintenance of the mucogingival line level (along with an increase in the band of keratinized tissue in some cases), and the achievement of esthetic outcomes with low morbidity.

Since the original description of the tunnel technique in 1999, many modifications have been introduced in the literature to improve the results while keeping the basic principles of minimal invasiveness. Some of these modifications propose advancing the submarginal flap to cover the graft,[12,13] while others involve full-thickness dissection of the papilla base to reduce the risk of flap perforation,[14] as well as submucosal dissection with incisions far from the recession margins.[15,16] Other modifications are related to the use of novel suturing techniques[14,17] or different grafting procedures, such as preserving epithelialized areas[18] or site-specific application of connective tissue grafts.[19]

Although some authors have proclaimed the advantages of their proposed surgical approaches in congresses and professional events, rigorous clinical research comparing and evaluating the efficacy of these techniques is lacking. Our group recently published the results of a clinical trial comparing the use of a connective tissue graft with the tunnel technique vs a trapezoidal coronally advanced flap for the treatment of multiple recessions, finding nonsignificant differences in root coverage but slightly better patient experience in the tunnel group.[20] These results exemplify that similar outcomes can be achieved by using different surgical approaches, with results mainly dependent on the training and experience of the

doi: 10.11607/prd.2024.5.e

surgeons and the precision and care in the surgical execution, rather than on technical differences.

Specialists in periodontology should know different surgical techniques, understand their advantages, disadvantages, and indications, and then make their selection for the benefit of the patient. At the same time, basic and clinical research should generate evidence and knowledge on three different levels: *(1)* biologic principles of healing and revascularization patterns after different surgical approaches; *(2)* behavior of autologous grafts when placed in different surgical beds (supra- or subperiosteal), and the use of substitute soft tissue graft biomaterials to replace soft tissue autografts; and *(3)* the role of patient-related variables, studying different factors involved in the maintenance of long-term outcomes, as well as the effect of aging and systemic factors that may influence the therapeutic outcomes.

Let's celebrate together the 25 years of clinical experience and evolution of the tunnel approach for the treatment of gingival recessions, keeping in mind that we need to conduct quality clinical research and develop improvements to enhance the predictability of outcomes in daily practice.

Ion Zabalegui, MD, DDS
Mariano Sanz, MD, DDS, DrMed

Correspondence to:
Dr Mariano Sanz, marsan@ucm.es

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