

## Immediate Implant Placement in Intact Fresh Extraction Sockets Using Vestibular Socket Therapy Versus Partial Extraction Therapy in the Esthetic Zone: A Randomized Clinical Trial

### ABSTRACT

It is well known that, after implant placement, the long-term maintenance of optimal peri-implant soft tissue architecture in the aesthetic zone represents one of the biggest challenges for the clinician. In order to face this challenge, different treatment approaches were introduced. Among these, VST is a novel protocol for immediate implant placement in thin and compromised fresh extraction sockets that seems to offer superior aesthetic and functional advantages. As there is a lack of randomized clinical trials testing the aesthetic and functional advantages of VST, the Authors proposed this randomized clinical trial aiming to assess aesthetic and soft and hard tissue outcomes, 6 months after immediate implant placement, comparing vestibular socket therapy (VST) to partial extraction therapy in intact thin-walled fresh extraction sockets in the aesthetic zone. Twenty-four patients with hopeless maxillary anterior teeth requiring immediate implant placement were randomly assigned to two equal groups to receive either VST or partial extraction therapy. In the VST group, after tooth extraction and the creation of a tunnel between the socket orifice and the vestibular access incision, the implant was placed by means of a prefabricated CAD/CAM surgical guide, and the vestibular tissues were then retracted for the proper access and visibility of the labial plate of bone.

Then, a 0.6-mm-thick flexible equine cortical membrane (OsteoBiol® Lamina®, Tecnos®, Giaveno, Italy) was inserted into the labial tunnel and tacked onto the apical bone using two membrane tacks, followed by vestibular incision suture. In the partial extraction therapy group, the tooth extraction was performed with the aid of a specific partial extraction therapy kit, and an immediate implant was inserted by means of a prefabricated CAD/CAM surgical guide. For both groups, a delayed loading protocol was implemented. Pink aesthetic scores (PESs), vertical soft tissue alterations, and facial bone thickness were measured 6 months after restoration, showing no significant differences between the groups at any of the reference points ( $P \geq .05$ ). Moreover, after 6 months, both groups showed 100% implant survival and demonstrated a significant gain in millimeters of labial bone thickness.

### CONCLUSIONS

To the best of the Authors' knowledge, this is the first randomized controlled clinical trial to assess the aesthetic and soft and hard tissue outcomes 6 months after immediate implant placement using VST versus partial extraction therapy in patients pursuing replacement for hopeless anterior teeth with intact thin-walled fresh extraction sockets. Within the limitations of this randomized clinical trial, the Authors concluded that "vestibular socket therapy and partial extraction therapy could be considered superior treatment approaches for immediate implant placement in intact thin-walled fresh extraction sockets, particularly in the aesthetic zone". Moreover, they suggested that "further multicenter randomized clinical trials with long follow-up intervals are warranted to assess the long-term stability of outcomes".

### ALVEOLAR REGENERATION

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