

Comparison between two different techniques for peri-implant soft tissue augmentation: porcine dermal matrix graft vs. tenting screw.

ABSTRACT

In designing an implant rehabilitation, it is important to remember that the thickness of soft tissues around dental implants is crucial for marginal bone and aesthetic profile preservation. Moreover, thicker soft tissues assure a better peri-implant bone stability. As different thickening techniques are available for this purpose, the Authors performed a prospective multicentre non-randomized clinical study in order to verify the possibility of increasing the vertical thickness of the peri-implant soft tissues, without using autologous graft in order to avoid a second surgical site and thus reducing the invasiveness of the procedure. Therefore, the objective of this observational study was to evaluate the increase of peri-implants soft tissues thickening using a xenogenic dermal matrix of porcine origin grafted at the time of surgery; or using a "tenting screw" technique, in which a 2 mm healing screw is covered by the repositioned flap, after the surgical insertion of the implant. Forty-seven patients, with an age ranging between 29 and 80 years, were enrolled and, according to the thickening procedure, were assigned to group A (OsteoBiol® Derma, Tecnos®, Giaveno, Italy; porcine dermal matrix, n=24) or B (healing abutment used as tenting screw, n=23). The thickness of the soft tissues was measured after flap elevation in a standardized way. Six months after implant placement, implants were uncovered and soft tissue thickness measured again.

Both the final thickness measurement and the soft tissue vertical increase were statistically significant compared to the baseline in favour of group A (porcine dermal matrix use): at second stage, six months after implant placement, the mean vertical thickness was 3.01 ± 0.58 mm in group A and 2.25 ± 0.53 mm in group B ($p < 0.001$); the mean vertical gain in group A was 1.33 ± 0.71 mm, while it was 0.43 ± 0.55 mm in group B ($p < 0.001$).

CONCLUSIONS

The result of the present investigation indicates the limited effectiveness of using the "tenting" effect of a 2 mm healing abutment for the increase of peri-implant soft tissue vertical thickness. On the contrary, porcine dermal matrix demonstrated to be more efficacious than healing abutments used as tenting screws in peri-implant soft tissue augmentation.

Consequently, the Authors concluded that *"the use of a porcine dermal matrix at time of implant placement is effective to thicken peri-implant tissues"*.

SOFT TISSUE AUGMENTATION

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