



Tissue stability of implants placed in fresh extraction sockets: a 5-year prospective single-cohort study

DEHISCENCES AND FENESTRATIONS

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ABSTRACT

The aim of this 5-year prospective single-cohort study is to evaluate implants success rate, marginal bone level (MBL), soft tissue stability, and the patients' satisfaction up to 5 years after tooth extraction and immediate implant placement. Implants were inserted in fresh extraction sockets, the gap between the residual bone walls and the implant surfaces were grafted with a xenograft (OsteoBiol® Apatos, Tecnos®, Giaveno, Italy) and covered by a collagen membrane (OsteoBiol® Evolution, Tecnos®) left exposed to the oral cavity (flapless technique). A total of forty-seven patients was evaluated. At the re-entry, 4 months after grafting, clinical parameters (width of keratinized gingiva [WKG], facial soft tissue level [FST], papilla index, plaque index, and bleeding on probing) were measured; periapical radiographs were taken at the time of implant placement (baseline) and after 1, 3, and 5 years. An image analysis software was used to measure changes in the marginal bone level (DMBL). Moreover, the clinicians evaluated patients' satisfaction after 1, 3 and 5 years. After 5 years, the implant survival rate was 95.7%. DMBL showed statistically significant differences: mean values were -0.68 ± 0.39 , -0.94 ± 0.44 , and -1.08 ± 0.43 mm at the 1, 3, and 5-year follow-up, respectively. Changes in WKG (DWKG) and FST (DFST) decreased from the 1-year point of the survey (0.80 ± 0.79 and 0.71 ± 0.73 mm for DWKG and DFST, respectively) to the last follow-up check at 5 years (0.67 ± 0.74 and 0.56 ± 0.69 mm for DWKG and DFST, respectively), with no significant differences. Regarding patients' satisfaction, $74\% \pm 11.8\%$ of patients were satisfied by the overall implant treatment, $73.0\% \pm 11.1\%$ were satisfied with the appearance of the peri-implant soft tissues, and $80.5\% \pm 11.3\%$ gave their positive opinion on the aesthetic outcome of the definitive implant crown.

CONCLUSIONS

The outcomes of this study confirm that implants inserted immediately after tooth extraction and grafted with a cortico-cancellous porcine bone using a flapless procedure result in stable bone levels and soft tissue parameters. The aesthetic outcomes of the surgical procedure used in this study were considered satisfactory by the patients.

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BONE SUBSTITUTES
OsteoBiol® Apatos

MEMBRANE
OsteoBiol® Evolution