

A new approach for maxilla reconstruction

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Purpose: The aim of the present prospective cohort study was to report on an approach for maxillary reconstruction with autogenous bone grafts allowing implant placement for immediate function with fixed bridges after 6 months.

Materials and methods: A total of 35 bilateral bone grafting procedures were performed on 35 consecutive patients (mean age 54.5 years). The iliac crest was used as donor site for all patients. The method for retaining the immediate prosthesis after bone graft ranged from mucosa retention (6 patients), implant retention (10 patients with immediate-function implants placed in non-grafted bone at the same surgical step as the bone graft procedure), teeth retention (6 patients) or palatal implant retention (13 patients). The graft was considered to be successful when it allowed the placement of the planned implants for immediate function rehabilitation with a fixed bridge.

Results: All bone-grafting procedures were successful, allowing all patients to be rehabilitated after 6 months with a fixed bridge supported by immediate-function implants. The cumulative survival rate of the palatal implants was 94% after 2 months. A total of 219 immediate-function implants were placed in grafted bone and loaded occlusally. Two patients dropped out of the study 2 and 4 months after the bone graft procedure, while one patient with four implants dropped out of the study 13 months after the rehabilitation with implants. The cumulative survival rate of the implants was 97.3% at 1-year and 96.7% at 5-years (up to 129 months; minimum of 29 months; median of 52.5 months). Seven implants failed to integrate in the grafted bone. The marginal bone resorption for the implants placed in grafted areas at 1-year and 5-year follow-up was 2.0 mm (SD = 1.2mm) and 2.0mm (SD = 1.1mm), respectively.

Conclusions: Maxilla reconstruction with autogenous grafted bone is a viable process, allowing, in some cases, the use of a removable or fixed prosthetic rehabilitation immediately after grafting. Maxillary rehabilitation with immediate-function implants in grafted bone is possible, with the implant success rate achieved at 5 years comparable to other rehabilitations with implants placed in grafted bone, but lower than the results obtained with implants placed in residual bone.