

Sbordone, C., Toti, P., et al., Volume Changes of iliac Crest Autogenous Bone Grafts After Vertical and Horizontal Alveolar Ridge Augmentation of Atrophic Maxillas and mandibles: A 6-Year Computerized Tomographic Follow-Up. Eur. J. Oral Implantol 4, 219-25, 2011

Purpose: To evaluate by computerized tomography the long-term volume resorption of autogenous corticocancellous grafted bone harvested from the ilium and used in an alveolar procedure followed by endosseous dental implant placement.

Patients and Methods: Eleven maxillary grafts (8 positioned horizontally) and 13 mandibular grafts (10 positioned vertically) were placed in 16 patients. Using software programs, pre- and postsurgical computerized tomographic scans were used to compare volumes of grafts over time (up to 6 yr) to determine the annual percentage of remaining bone and the overall percentage of bone resorption that could be expected. Yearly measurements of volumes and percentages of remaining bone were then compared statistically.

Results: At the 6-year survey for blocks grafted in the mandible, an average resorption rate of 87% was obtained. For maxillary grafts at the same survey, complete resorption of the grafts (mean, 105.5%) was recorded. In general, bone resorption appeared slow, except for that recorded in the first 2 years of healing, the only period in which statistical comparisons among all time points showed significant differences for all variables.

Conclusions: Volumetric measurements of the grafts and their related percentages of remaining bone attested to a progressive and unavoidable bone resorption of almost all the grafted bone in the maxilla.