
**Purpose:** The aim of this study was to compare the histological presentation of local mandibular bone grafts fixed with one screw or two screws in buccal anterior maxillary augmentation procedures.

**Study design:** Local buccal defects of the anterior maxilla were reconstructed in 12 patients (mean age 47 ± 17 years, range 18 to 67 years) using autogenous cortical bone grafts from the mandibular retromolar area. Patients were randomised using envelopes containing study identification numbers. After randomisation, two screws were used to fix the bone graft in six patients, and one screw was used in the other six patients. Four months later during implant placement, a bone biopsy was taken with a trephine. The biopsies were processed for light microscope evaluation.

Results: The mean total bone volume varied from 35.8% to 72.4% (mean 51.1% ± 13.4%) in the one-screw group and from 28.7% to 56.6% (mean 40.8% ± 11.5%) in the two-screw group. The mean non-vital bone volume ranged from 0% to 2% (mean 0.9% ± 0.9%) in the one-screw group and from 0% to 8.9% (mean 2.2% ± 3.7%) in the two-screw group. The mean osteoid volume ranged from 2.2% to 7.3% (mean 5.4% ± 1.7%) in the one-screw group and from 2.0% to 16.4% (mean 7.3% ± 5%) in the two-screw group.

**Conclusion:** No significant histological differences were found between the use of one or two screws to fix an autologous bone graft in buccal bone grafting procedures prior to implant placement.

**Conflict-of-interest statement:** This was a self-supported study, there is no conflict of interest to declare.