

## Influence of the position of the antrostomy in sinus floor elevation assessed with cone-beam computed tomography: a randomized clinical trial

### ABSTRACT

Augmentation procedures in the distal regions of the edentulous maxilla are necessary in order to allow implant rehabilitation. The aim of the present study was to evaluate dimensional variations of augmented sinus volumes after sinus floor elevation using a lateral approach placing the antrostomy close to the sinus floor or more cranially to it. For the purpose of the study, 24 healthy volunteers, presenting an edentulous atrophic zone in the posterior segment of the maxilla requiring sinus floor elevation and a fixed oral rehabilitation, were recruited. The lateral approach was adopted placing the antrostomy randomly either close to the level of the sinus floor (group A) or approximately 3-4 mm cranially (group B). After the window preparation and the sinus mucosa elevation, the elevated space was filled with a resorbable collagenated cortico-cancellous porcine bone (250–1000  $\mu\text{m}$ ; OsteoBiol® Gen-Os®, TecnoSS®, Giaveno, Italy). A collagen membrane (0,3 mm; OsteoBiol® Evolution, TecnoSS®) was placed to cover the access window, and silk sutures were provided to secure the flaps. Cone-beam computed tomography (CBCT) was done before surgery (T0) and after 1 week (T1) and 9 months (T2) in order to analyse the dimensional variations. At T1, the sinus floor was found to be elevated by  $9.8 \pm 2.1$  mm in group A and  $10.9 \pm 1.9$  mm in group B. At T2, shrinkage of  $2.0 \pm 1.7$  mm in group A and  $1.4 \pm 2.5$  mm in group B was observed. The area was reduced approximately 18-24% between T1 and T2. The sinus mucosa width increased by 4.3-5 mm between T0 and T1, and regained the original dimensions at T2.

### CONCLUSIONS

As demonstrated in the present study, following the lateral approach for maxillary sinus floor elevation, the volume of the augmentation seems to be dependent on the location of the access antrostomy. After 9 months, it was evident that the more cranial the antrostomy, the greater the augmentation height.

### LATERAL ACCESS SINUS LIFT

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