

## **Three-Dimensional Assessment of Volumetric Changes in Sinuses Augmented with Two Different Bone Substitutes.**

[Gultekin BA](#)<sup>1</sup>, [Borahan O](#)<sup>2</sup>, [Sirali A](#)<sup>3</sup>, [Karabuda ZC](#)<sup>1</sup>, [Mijiritsky E](#)<sup>4</sup>.

### **Abstract**

**Introduction.** The bone volume of the posterior maxilla may not be appropriate for implant placement, due to factors such as pneumatized maxillary sinus. The purpose of this study was to evaluate the percentage of graft volume reduction following sinus floor elevation (SFE), with either slow resorbable bone substitute only or a composite of slow and fast resorbable bone substitutes, using cone beam computed tomography (CBCT). **Materials and Methods.** In this retrospective study, CBCT scans of SFE procedures were evaluated to determine the volume of grafted sinus with either deproteinized bovine bone (DBB) or a 2 : 1 mixture of biphasic calcium sulfate (CS) and DBB, as a composite. The volumetric changes of sinus augmentations were measured 2 weeks (V-I) and 6 months (V-II) after operation. **Results.** Thirty-three patients were included in this study. The average percentage volume reduction was  $9.39 \pm 3.01\%$  and  $17.65 \pm 4.15\%$  for DBB and composite grafts, respectively. A significant graft volume reduction was observed between V-I and V-II for both groups ( $p < 0.01$ ). The DBB group exhibited significantly less volume reduction than the composite group ( $p < 0.01$ ). **Conclusions.** Augmented sinus volume may change before implant placement. DBB offers greater volume stability during healing than composite grafts.