

## ABSTRACT

**Purpose:** To prospectively evaluate the ridge augmentation in the posterior maxilla following hydraulic pressure indirect sinus lift in combination with sticky bone graft and immediate placement of endosseous implants with the help of Cone Beam Computed Tomography.

**Materials and Methods:** 5 patients requiring maxillary sinus lift surgery for implant placement because of reduced residual alveolar height were chosen. The average residual bone height of the patients was about 5.8mm. A minimally invasive technique of sinus lift in which hydraulic pressure was used to elevate the schneiderian membrane through the crestal osteotomy was performed. Sticky bone was used to fill the increased subsinosal space. Pre operative and 6 months post operative radiographic investigations were done using CBCT, having OPG and RVG as adjuncts to measure the subsinosal bone height and bone density.

**Results:** The preoperative bone height had a mean value of  $5.8 \pm 1.3$  mm with a mean difference of -7mm and it is statistically significant compared to the postoperative average bone height of  $12.8 \pm 1.9$  mm ( $P < 0.05$ ). The pre operative bone density had a mean value of  $814 \pm 25.2$  HU with a mean difference of -27 HU and there is no statistical significance as the post operative bone density had a mean value of  $841.83 \pm 117.4$  HU ( $P > 0.05$ ).

**Conclusions:** Hydraulic pressure indirect sinus lift is a more reliable technique with predictable outcomes for the elevation of schneiderian membrane for implant placement. It is a fast and simple technique that enables elevation of the sinus floor with much lesser morbidity compared to the other sinus lift techniques. The incidence of perforation of schneiderian membrane is less and it also enables simultaneous implant placement.

**Key words:** Hydraulic Pressure sinus lift, Indirect Sinus Lift, Ridge Augmentation, Implants, Posterior Maxilla, Sticky Bone Graft, Cone Beam Computed Tomography.