



## Use of piezosurgery during maxillary sinus elevation: clinical results of 40 consecutive cases

### LATERAL ACCESS SINUS LIFT

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#### ABSTRACT

Preservation of the sinus membrane is essential for a successful sinus grafting procedure and its integrity is crucial to stabilize grafting materials during the healing period. As perforation occurs most frequently during the rotary osteotomy stage when using a round diamond handpiece, the use of the piezoelectric technique was suggested in order to obtain a greater precision and safety in bone surgery. The aim of this study was to evaluate the performance of piezoelectric devices during sinus elevation to determine the percentage of sinus membrane perforation and the time required to perform the antrostomy and elevation of the membrane. A total of 40 sinuses were included and the elevation procedures were performed by means of a piezosurgery device. The space obtained with the sinus elevation was filled with graft material: either autologous bone or a mixture of 50% autologous bone and 50% deantigenated collagenated bone substitute of porcine origin (OsteoBiol® Gen-Os®, Tecnos®, Giaveno, Italy) was used as a filling material. The total amount of graft material at each site varied according to the extent of maxillary bone resorption and the sinus anatomy. During the sinus elevation procedure, seven perforations occurred, and in those cases, the bony sinus windows were covered with a resorbable membrane (OsteoBiol® Evolution, Tecnos®).

#### CONCLUSIONS

Postoperative healing was uneventful and free of complications in all patients. After 2 months, at radiographic analysis, an adequate amount of radiopaque material with greater density than the bone was present, and no signs of maxillary sinus infection were observed. Sinus membrane perforation occurred in 7 of 40 cases, representing 17,5% of procedures. These results are similar to those reported by several authors who also found very low perforation percentages using piezoelectric devices. The perforations were repaired using a collagen membrane in direct contact with the sinus membrane.

Based on the results of this study, the Authors affirm that *"sinus augmentation can be successfully performed by means of a piezoelectric device, which was demonstrated to be an attractive alternative to simplify sinus elevation procedures and offer promising results in terms of complications such as sinus membrane perforations"*.

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**ORIGINAL ARTICLE**  
International Journal of Periodontics & Restorative Dentistry  
2012 Dec;32(6):e182-8

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