



Porcine bone used in sinus augmentation procedures: a 5-year retrospective clinical evaluation

ABSTRACT

Inadequate bone height in the lateral part of the maxilla is a contraindication for implant surgery and the rehabilitation of the edentulous posterior maxilla with dental implants often represents a clinical challenge.

The aim of this study was to evaluate from a clinical point of view the maxillary sinus augmentation using porcine bone. This study included 121 healthy patients (71 women and 50 men), all candidates for augmentation in the posterior maxilla. After the elevation of the sinus membrane, the maxillary sinus was filled with sterilized porcine cortico-cancellous mixed bone particles (OsteoBiol® *Apatos*, Tecnos®, Giaveno, Italy). In 20 cases a perforation of the sinus membrane occurred, but without clinical complications and all the membrane perforations were successfully repaired with a collagen membrane (OsteoBiol® *Evolution*, Tecnos®) and showed uneventful healing.

After a 4- to 6-month healing period, sandblasted and acid-etched implants were inserted. All grafted sinuses healed well without major complications and did not show occurrence of symptoms indicating possible maxillary sinusitis and the cumulative survival implant rate was 92% after a mean loading time of 5 years.

CONCLUSIONS

The results of this study show that porcine bone can be used with success in sinus floor augmentation procedures, and rougher-surfaced implants are probably preferable. These findings are in accordance with other studies that showed that porcine bone has good biocompatibility and osteoconductive properties, with osteoblastic seams forming bone directly on the biomaterial surface and with no histologic signs of adverse reactions.

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