

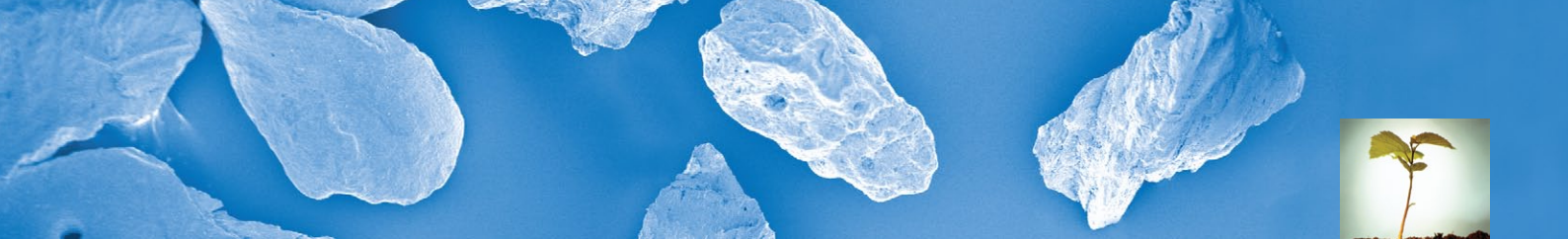
SCIENTIFIC ABSTRACTS

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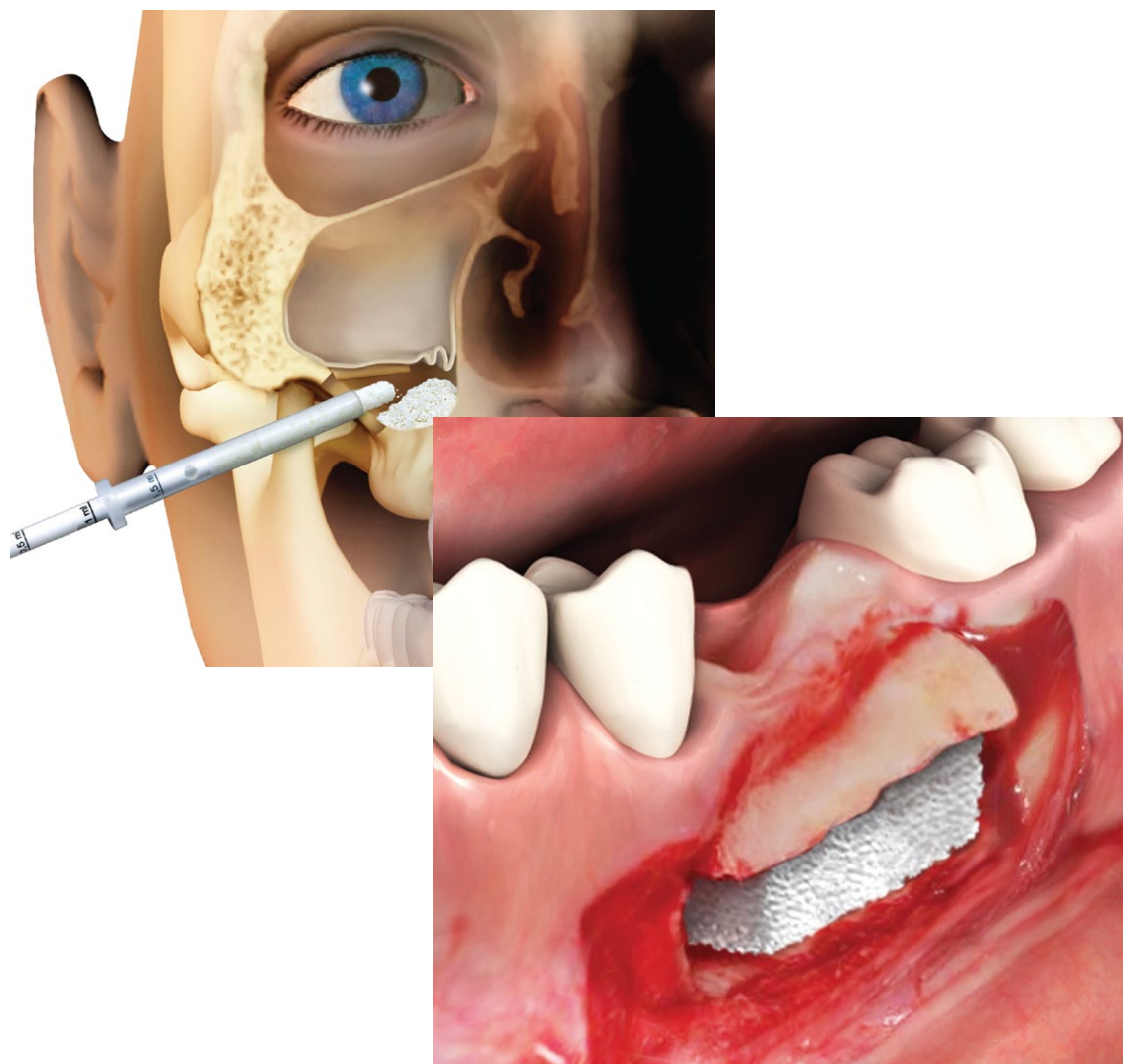
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Posterior atrophic jaws rehabilitated with prostheses supported by 5x5 mm implants with a novel nanostructured calcium-incorporated titanium surface or by longer implants in augmented bone.

Preliminary results from a randomised controlled trial

ABSTRACT

The use of short implants, with an intrabony length of 8 mm or less, may be considered as a simpler, cheaper and faster alternative to bone augmentation procedures for the subsequent placement of longer implants. Consequently, the aim of this study was to compare the outcome of partial fixed prostheses supported by 5x5 mm implants with prostheses supported by implants at least 10 mm long placed in augmented posterior jaws.

For this trial, 40 patients with atrophic posterior mandibles with 5 to 7 mm of bone height above the mandibular canal and 40 patients with atrophic maxillae with 4 to 6 mm below the maxillary sinus, were enrolled and divided in two groups in order to receive one to three 5x5 mm implants or one to three at least 5x10 mm-long implants in augmented bone. Bone vertical augmentation of the mandibles was performed by the interposition of bovine bone blocks (OsteoBiol® Sp-Block, TecnoSS®, Giaveno, Italy) and resorbable barriers (OsteoBiol® Evolution) and implants were placed after 4 months. Maxillary sinuses were augmented with particulated porcine bone (OsteoBiol® mp3® pre-hydrated collagenated porcine bone), the lateral window was covered with a resorbable collagen barrier (OsteoBiol® Evolution) and implants were placed simultaneously. 4 months after loading, the Authors evaluated prosthesis and implant failures and the presence of complications.

The results showed that there were no statistically significant differences in prosthesis and implant failures.

CONCLUSIONS

Within the limitation of this study (small sample size and short duration of the follow-up), short-term data (4 months after loading) indicate that 5x5 mm implants achieved similar results compared to longer implants placed in augmented bone. So, in the Authors' opinion, *"short implants might be a preferable choice to bone augmentation especially in posterior mandibles since the treatment is faster, cheaper and associated with less morbidity. However, 5 to 10 years of post-loading data are necessary before making reliable recommendations"*.

LATERAL ACCESS SINUS LIFT & VERTICAL AUGMENTATION

067

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ORIGINAL ARTICLE

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LATERAL ACCESS SINUS LIFT & VERTICAL AUGMENTATION

071

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Posterior atrophic jaws rehabilitated with prostheses supported by 5 x 5 mm implants with a novel nanostructured calcium-incorporated titanium surface or by longer implants in augmented bone. One-year results from a randomised controlled trial

ABSTRACT

In this study, the Authors aimed to verify if short implants can be a simpler, cheaper and faster alternative with less associated morbidity compared to longer implants placed in bone augmented with bone substitutes in posterior atrophic jaws and if they could provide similar success rates.

A total of 40 patients with atrophic posterior arches were randomised according to a parallel group design to receive one to three 5 mm implants or one to three at least 10 mm-long implants in augmented bone.

In mandibles, the augmentation procedure consisted of interpositional blocks of collagenated cancellous bovine bone (OsteoBiol® Sp-Block, Tecnos®, Giaveno, Italy) and maxillary sinuses were augmented with a sticky paste made of 600 to 1000 µm pre-hydrated collagenated cortico-cancellous bone granules of porcine origin (OsteoBiol® mp3®, Tecnos®). The same bone substitute was also used to fill gaps between bone blocks and the surrounding bone in mandibles. The grafted area was covered with a collagen resorbable barrier (OsteoBiol® Evolution, Tecnos®) from equine pericardium. All implants were submerged and loaded after 4 months with provisional prostheses.

CONCLUSIONS

One year after loading, 5 × 5 mm implants achieved similar results compared to longer implants placed in augmented bone and so it is possible to presume that short implants might be a preferable choice to bone augmentation especially in posterior mandibles.

With reference to the blocks used, the Authors declared: *"in this trial, we decided to use blocks of collagenated bovine bone instead of the blocks of sintered bovine bone we used in previous studies because sintered bone blocks were too brittle and sometimes fragmented into small pieces during shaping and insertion procedures. We therefore used a more solid bone block of animal origin"*.

Posterior atrophic jaws rehabilitated with prostheses supported by 5 × 5 mm implants with a nanostructured calcium-incorporated titanium surface or by longer implants in augmented bone. 3-year results from a randomised controlled trial

ABSTRACT

As short implants could be a simple, cheap and fast alternative with less morbidity when compared to longer implants placed in augmented bone, it is indispensable to verify if they can provide similar success rates, especially in the long-term. The aim of this RCT was to compare the results of partial fixed prostheses supported by 5.0 mm × 5.0 mm implants with prostheses supported by implants at least 10.0 mm long placed in augmented posterior jaws, up to 3 years post-loading. This was a randomised controlled trial of parallel group design with two arms. One arm consisted of patients having one to three 5.0 mm × 5.0 mm implants either in the mandible or in the maxilla. Patients of the other arm had their jaw augmented to allow placement of one to three at least 10.0 mm × 5.0 mm implants either in the mandible or in the maxilla. The augmentation procedures consisted of interpositional blocks of collagenated cancellous bovine bone (OsteoBiol® Sp-Block, Tecnos®, Giaveno, Italy) in mandibles, or the insertion, using a sterile syringe, of a sticky paste made of 600 µm to 1000 µm pre-hydrated collagenated cortico-cancellous bone granules of porcine origin (OsteoBiol® mp3®, Tecnos®, 1 cc) in a lateral window below the lifted maxillary sinus membrane. All implants had a diameter of 5.0 mm and were submerged and loaded after 4 months with provisional prostheses. Four months later, definitive screw-retained or provisionally cement metal-ceramic or zirconia prostheses were delivered. The follow-up of all patients was 3 years post-loading and the outcome measures were: prosthesis and implant failures, biological or prosthetic complications, and peri-implant marginal bone level changes. Three years after loading, 5.0 mm × 5.0 mm implants achieved similar results than longer implants placed in augmented bone. There were no statistically significant differences in prostheses and implant failures up to 3 years after loading. Significantly more complications occurred at mandibular grafted sites. Longer implants showed a greater bone loss up to 3 years after loading than short implants, both in maxillae and in mandibles.

CONCLUSIONS

As bone augmentation procedures are more technically demanding than the placement of short implants and based on the results of this trial, it is possible to suggest that implants as short as 5.0 mm may be as effective as longer implants placed in augmented posterior jaws at least up to 3 years after loading. Anyway, the Authors recommended to keep in mind that the long-term prognosis is yet unknown and the sample size of the present and other published RCTs is still relatively small to be able to draw definitive conclusions.

LATERAL ACCESS SINUS LIFT & VERTICAL AUGMENTATION

131

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