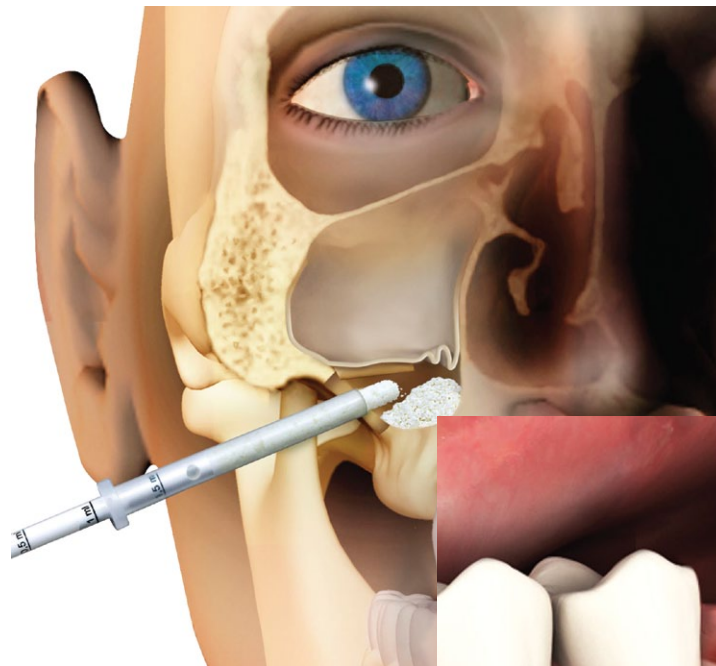


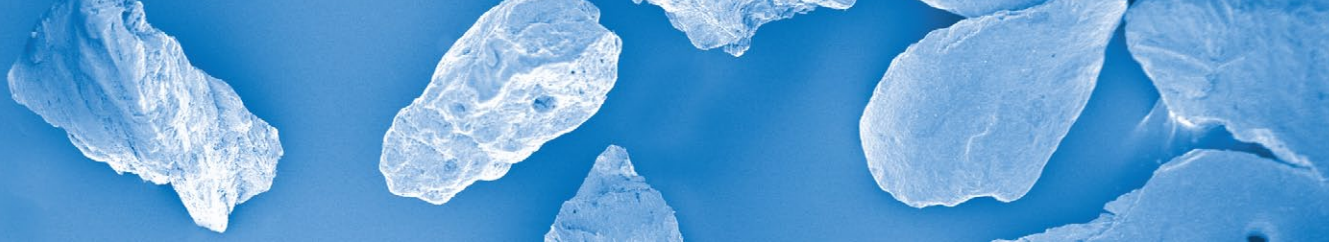
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LATERAL ACCESS SINUS LIFT & VERTICAL AUGMENTATION

055

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ORIGINAL ARTICLE

European Journal of Oral Implantology
2012;5(1):19-33

Posterior atrophic jaws rehabilitated with prostheses supported by 6 mm-long, 4 mm-wide implants or by longer implants in augmented bone. Preliminary results from a pilot randomised controlled trial

ABSTRACT

The aim of this study was to evaluate whether 6 mm-long by 4 mm-wide dental implants could be an alternative to longer implants placed in bone augmented with bone substitutes in posterior atrophic jaws. In order to do this, 20 patients with bilateral atrophic mandibles and 20 patients with bilateral atrophic maxillae, having 5 to 7 mm of bone height above the mandibular canal or below the maxillary sinus, were randomised according to a split-mouth design to receive one to three 6 mm-long and 4 mm-wide implants or at least 10-mm long implants in augmented bone. The augmentation procedure consisted of an interpositional block of collagenated cancellous equine bone (OsteoBiol® Sp-Block, TecnoSS®, Giaveno, Italy) in mandibles or a mix of 100% cancellous and cortical porcine-derived collagenated bone having a particle size of 250 to 1000 µm (OsteoBiol® Gen-Os®, TecnoSS®) in maxillary sinuses. Both sides were to be treated during the same surgical session (one side to be augmented and the other to receive short implants). Outcome measures were prosthesis and implant failures, any complication, time needed to fully recover mental nerve function (only for mandibular implants) and patient preference. There were no statistically significant differences in graft, implant or prosthesis failures, though significantly more intra- and postoperative complications occurred at grafted sites. All 20 patients treated with mandibular implants and 15 patients treated with maxillary implants preferred short implants, whereas 5 patients treated with maxillary implants described both procedures as equally acceptable. These differences were statistically significant.

CONCLUSIONS

Based on the short-term data (5 months after loading) it is possible to suggest that short implants may be as effective, if not more effective, than longer implants placed in augmented posterior jaws. It should be noted that the long-term prognosis is yet unknown and the sample size of the present and other published RCTs are still relatively small to be drawing definitive conclusions. In the Authors' opinion, "5- to 10-year post-loading data are necessary before making reliable recommendations".

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Abstract author: Cristina Rodighiero, dental journalist, free publication, not for resale. Printed by TecnoSS® Dental s.r.l.



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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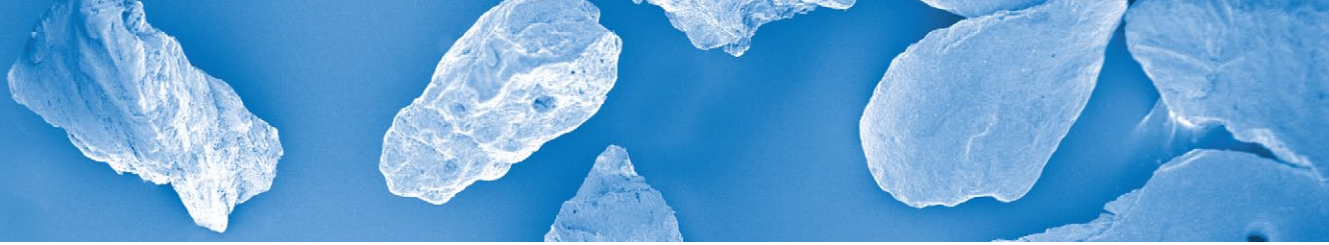
ORIGINAL ARTICLE
European Journal of Oral Implantology
2012;5(2):149-161

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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”*.

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ORIGINAL ARTICLE
European Journal of Oral Implantology
2013;6(4):343-357

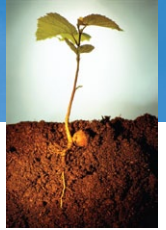
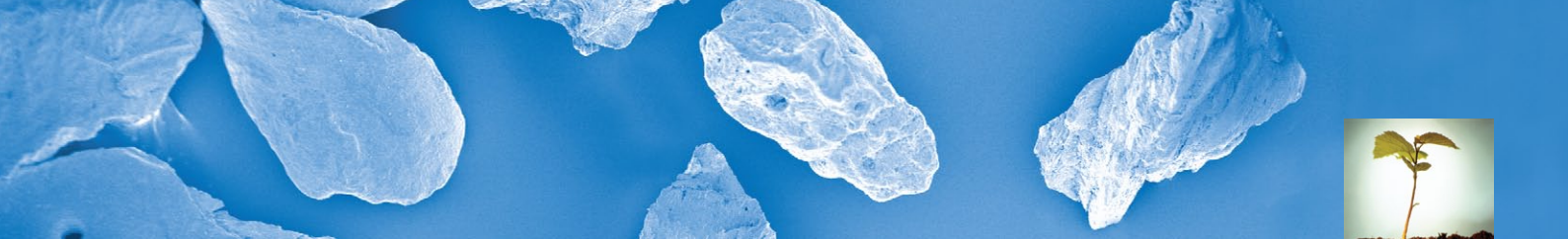
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Four mm-long versus longer implants in augmented bone in posterior atrophic jaws: 4-month post-loading results from a multicentre randomised controlled trial

ABSTRACT

In the absence of bone of adequate height, clinicians are faced with the dilemma of whether to attempt an augmentation procedure or to place shorter implants with an intra-bony length of 8 mm or less. The aim of this pilot study was to compare the outcome of single implant-supported crowns and partial fixed prostheses supported by 4 mm-long implants (test procedure), with prostheses supported by at least 10 mm-long implants (control procedure), placed in posterior jaws augmented. Augmentation consisted of interpositional blocks of collagenated cancellous equine bone (OsteoBiol® Sp-Block, Tecnos®, Giaveno, Italy) in mandibles or the insertion of a mix of cancellous and cortical collagenated porcine-derived granular bone having a granulometry of 250 to 1000 µm (OsteoBiol® Gen-Os®, Tecnos®) in a lateral window below the lifted maxillary sinus membrane. The same bone substitute was also used to fill gaps between bone blocks and the surrounding mandibular bone. The grafted areas were covered with resorbable collagen membranes derived from equine pericardium (OsteoBiol® Evolution, Tecnos®).

CONCLUSIONS

Four months after loading, 4 mm-long implants achieved similar results to longer implants in augmented jaws but were affected by fewer complications. The present findings suggest that short implants may be an alternative to augmentation procedures of posterior jaws at least up to 5 years after loading. Anyway, it must be underlined that the long-term prognosis of short implants is not sufficiently known and 5- to 10-year post-loading data from larger trials are necessary before being able to offer reliable recommendations.

LATERAL ACCESS SINUS LIFT & VERTICAL AUGMENTATION

105

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ORIGINAL ARTICLE
European Journal of Oral Implantology
2016;9(4):393-409

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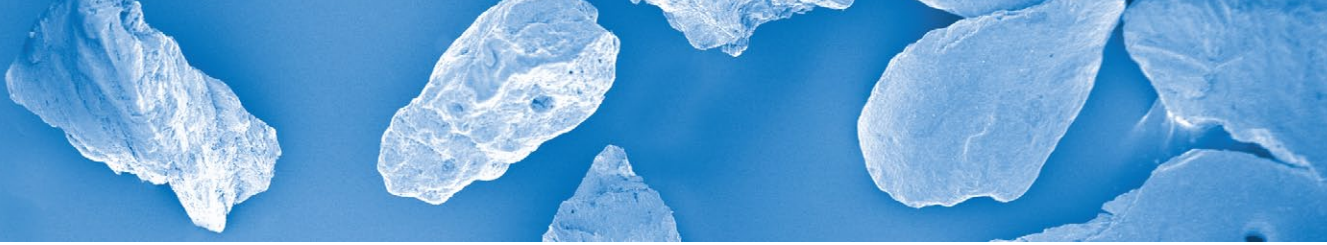
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LATERAL ACCESS SINUS LIFT & VERTICAL AUGMENTATION

129

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4 mm long vs longer implants in augmented bone in posterior atrophic jaws: 1-year post-loading results from a multicentre randomised controlled trial

ABSTRACT

In case of a residual vertical bone height less than 8.0 mm, when it is necessary to use dental implants in order to replace missing teeth, clinicians must decide if it is better to perform an augmentation procedure or to place short implants. The aim of this trial was to evaluate whether 4.0 mm short dental implants could be an alternative to augmentation with xenografts in the maxilla and placement of at least 10.0 mm long implants in posterior atrophic jaws. In the augmentation procedures, the atrophic jaws were augmented either with mandibular interpositional collagenated block of cancellous equine bone (OsteoBiol® Sp-Block, Tecnos®, Giaveno, Italy) or with a mixture of cancellous and cortical collagenated porcine-derived granular bone (OsteoBiol®, Gen-Os®, Tecnos®), placed through a lateral window below the lifted maxillary sinus epithelium. The grafted areas were covered with resorbable collagen membranes derived from equine pericardium (fine 30 mm × 30 mm, OsteoBiol® Evolution, Tecnos®). This study tested the null hypothesis that there were no differences in the clinical outcomes between the two procedures against the alternative hypothesis of a difference. Outcome measures were prosthesis failure, implant failure, any biological or prosthetic complications, peri-implant marginal bone levels changes. The follow-up was 1 year after initial loading. There were no statistically significant differences in implant failures or prostheses failures. Significantly more complications occurred at augmented sites: six patients in the short implant group were affected by six complications vs 18 patients from the augmented group with 24 complications.

CONCLUSIONS

One year after loading, 4.0mm long implants achieved results similar to longer implants in augmented jaws, but were affected by fewer complications. Based on the results, Authors concluded that *“short implants might be a preferable choice to bone augmentation, especially in mandibles, since the treatment is less invasive, faster, cheaper and associated with less morbidity. However, 5 to 10 years post-loading data from larger trials are necessary before being able to produce reliable recommendations”*.

ORIGINAL ARTICLE

European Journal Of Oral Implantology
2018;11(1):31-47

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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, TecnoSS®, 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®, TecnoSS®, 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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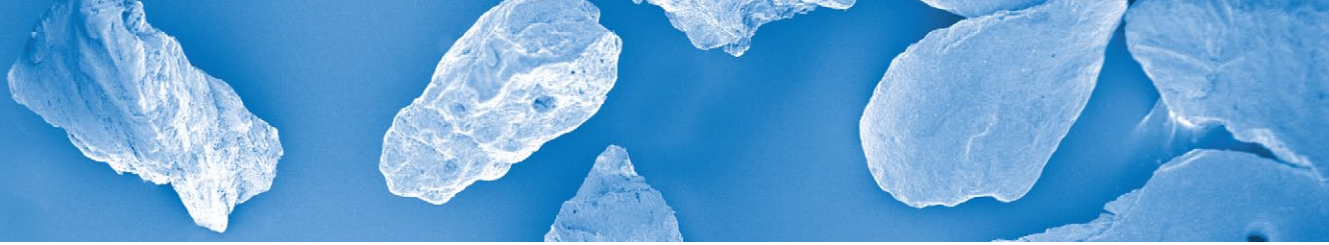
ORIGINAL ARTICLE
European Journal Of Oral Implantology
2018;11(1):49-61

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LATERAL ACCESS SINUS LIFT & VERTICAL AUGMENTATION

135

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ORIGINAL ARTICLE

European Journal Of Oral Implantology
2013;6(4):359-372

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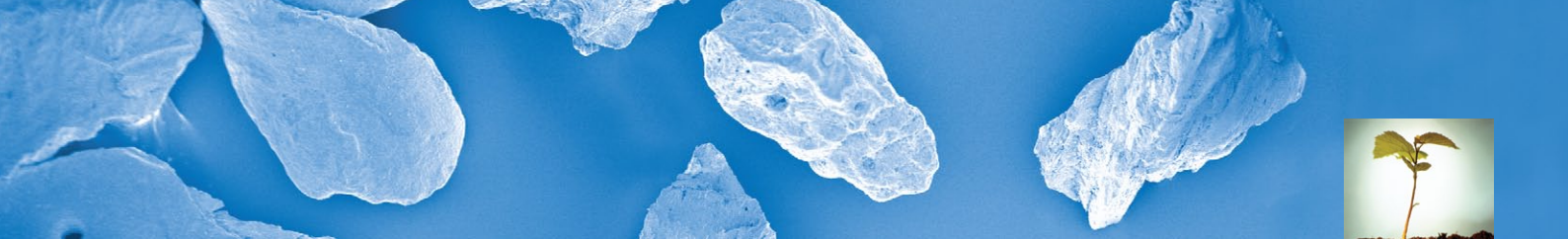
Posterior atrophic jaws rehabilitated with prostheses supported by 6 mm long 4 mm wide implants or by longer implants in augmented bone. One-year post-loading results from a pilot randomised controlled trial

ABSTRACT

Insufficient bone height is a problem for an adequate implant placement in atrophic jaws. In these cases, the alternatives are to use short implants or to place longer implants after bone augmentation. As there are few short-term randomised controlled trials comparing the effectiveness of prostheses supported by short implants with those supported by longer implants placed in augmented bone, the aim of this trial was to evaluate whether 6 mm long by 4 mm wide dental implants could be an alternative to implants at least 10 mm long placed in bone augmented with bone substitutes in posterior atrophic jaws. A total of 20 patients with bilateral atrophic mandibles and 20 patients with bilateral atrophic maxillae, were randomly allocated according to a split-mouth design to receive one to three 6 mm long and 4 mm wide implants, or implants at least 10 mm long in augmented bone. The augmentation procedure consisted in the insertion of an interpositional block of collagenated cancellous equine bone (OsteoBiol® Sp-Block, Tecnos®, Giaveno, Italy) in mandibles or a mix of cancellous and cortical porcine-derived collagenated bone having a granulometry of 250 to 1000 µm (Osteo-Biol® Gen-Os®, Tecnos®) in maxillary sinuses. The grafted areas were covered with a collagen resorbable barrier (Fine 30 × 30 mm, OsteoBiol® Evolution, Tecnos®) derived from equine pericardium. At mandibular grafted sides, implants were placed 3 months after augmentation, whereas implants were inserted in maxillae simultaneously to sinus lift procedures. Outcome measures were prosthesis and implant failures, any complication and radiographic peri-implant marginal bone level changes. All maxillary implants and prostheses were successful, whereas 2 mandibular prostheses could not be placed on implants at least 10 mm long due to graft failures. There were no statistically significant differences in implant and prosthesis failures, though significantly more complications occurred at grafted sites in mandibles, but not in maxillae. Patients with mandibular 6 mm-long implants lost an average of 1.05 mm of peri-implant bone at 1 year and patients with mandibular implants at least 10 mm long lost 1.07 mm, with a statistically significant difference. Patients with maxillary 6 mm-long implants lost an average of 1.02 mm of peri-implant bone at 1 year and patients with maxillary implants at least 10 mm long lost 1.09 mm, with a statistically significant difference. There were no statistically significant differences in bone level changes up to 1 year between 6 mm and at least 10 mm-long implants in both jaws.

CONCLUSIONS

Based on the results, the Authors concluded that "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 post-loading data from larger trials are necessary before being able to produce reliable recommendations".



Posterior atrophic jaws rehabilitated with prostheses supported by 6 mm long × 4 mm wide implants or by longer implants in augmented bone. 3-year post-loading results from a randomised controlled trial

ABSTRACT

The aim of this trial was to evaluate whether 6 mm long by 4 mm wide dental implants could be an alternative to implants at least 10 mm long placed in bone augmented with bone substitutes in posterior atrophic jaws. A total of 20 patients with bilateral atrophic mandibles and 20 patients with bilateral atrophic maxillae, were randomly allocated according to a split-mouth design to receive one to three 6 mm long and 4 mm wide implants, or implants at least 10 mm long in augmented bone. The augmentation procedure consisted in the insertion of an interpositional block of collagenated cancellous equine bone (OsteoBiol® Sp-Block, Tecnos®, Giaveno, Italy) in mandibles or a mix of cancellous and cortical porcine-derived collagenated bone having a granulometry of 250 to 1000 µm (OsteoBiol® Gen-Os®, Tecnos®) in maxillary sinuses. The grafted areas were covered with a collagen resorbable barrier (Fine 30 × 30 mm, OsteoBiol® Evolution, Tecnos®) derived from equine pericardium. At mandibular grafted sides, implants were placed 3 months after augmentation, whereas implants were inserted in maxillae simultaneously to sinus lift procedures. Outcome measures were prosthesis and implant failures, any complication and radiographic peri-implant marginal bone level changes. At the 3-year post-loading follow-up two short maxillary implants affected by peri-implantitis failed together with their prosthesis vs three mandibular prostheses that could not be placed on implants at least 10 mm long due to graft failures. There were no statistically significant differences in implant and prosthesis failures. In total, 18 complications occurred in 13 patients at augmented sites vs four complications in three patients with 6 mm long implants. Significantly more complications occurred at grafted sites in mandibles, but not in maxillae. In mandibles, patients with 6 mm long implants lost an average of 1.25 mm of peri-implant bone at 3 years vs 1.54 mm in patients with implants of at least 10 mm long, with a statistically significant difference. In maxillas, patients with 6 mm-long implants lost an average of 1.28 mm of peri-implant bone at 3 years vs 1.50 mm in patients with implants of at least 10 mm long, with a statistically significant difference.

CONCLUSIONS

Three-year post-loading data indicate that 6 mm long implants achieved similar (in the maxilla) if not better (in the mandible) results than longer implants placed in augmented bone and, consequently, short implants might be a preferable choice to bone augmentation, especially in posterior mandibles. Anyway, in the Authors' opinion, "5 to 10 years' post-loading data from larger trials are necessary before being able to produce reliable recommendations".

LATERAL ACCESS SINUS LIFT & VERTICAL AUGMENTATION

136

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ORIGINAL ARTICLE
European Journal Of Oral Implantology
2018;11(2):175-187

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