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2 years follow-up results in pre-shaped titanium mesh reconstruction of bone dehiscence around implants: a prospective study

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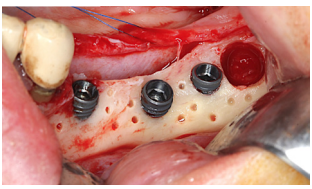
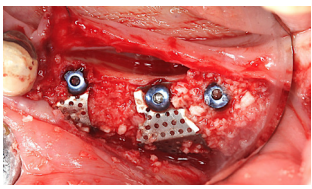
Object

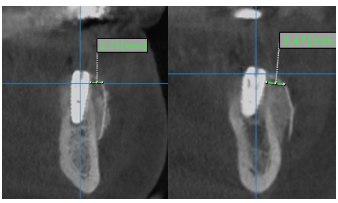
The aim of the present review was to evaluate a specific bone regeneration method, focusing on the augmented obtained bone including implant survival, success and complication rate.

Materials and Methods

27 peri-implant bone defects were augmented with a mixture of autogenous bone grafts (harvested intraorally from the linia obliqua externa or from the drilling site) with allograft or xenograft, so as the deficiencies were completely filled, recreating the ideal amount of bone. Height of implant dehiscences (mean 4.8 mm) were measured in an apico-coronal direction using a periodontal probe. Horizontal augmentation was determined using computed tomography scans of the alveolar ridge postreconstruction. Augmented sites were covered with an individually micro titanium mesh which was rigidly affixed with a cover screw to the recipient site and a primary suture was performed. At re-entry (mean interval 5.1 months) the titanium mesh were removed and bone regeneration assessed.







Results

A total of 24 patients, 11 males and 13 females, underwent maxillary or mandibular alveolar ridge regeneration by means of Ti-mesh and particulate autogenous bone graft in mixture (1:1) with allograft or xenograft bone. The post-operative healing was uneventful in 25 augmented dehiscences (92.59%). In 2 augmented sites (7.40%), early Ti-mesh exposure after 2 months' healing was managed with chlorhexidine mouthwash rinse for 5 weeks. Computed tomography scans of the alveolar ridge pre- and postreconstruction demonstrated mean horizontal augmentation of 2.8 ± 0.47 mm. Vertical component of the implant dehiscences were 100 % covered with newly regenerated bone (25 implants) and 70 % coverage with newly formed bone in cases with early exposure. At the re-entry procedure and removal of Ti-meshes, a dense connective tissue without any clinical signs of inflammation was present. All of the implants were retained after 2 years, yielding a 100% survival rate.

Conclusions

This 2-year prospective study demonstrated that implants placed into augmented bone using this technique exhibited peri-implant stability with high survival (100%) and success (92.59%) rates.

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