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► 0 mm : Crestal Bone Preservation. Maintenance of cortical bone level using MegaGen Implants and differential Implant site preparation.

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Objectives

The replacement of missing teeth with endosseous implants has become a standard treatment in dentistry. Over the past few years, various clinical studies have demonstrated the success of implant-supported fixed restorations by showing implant survival and success rates of 95% to 99% over 5 years.

Today, the number of commercially available implant systems is constantly rising. The main differences between these systems arise from the clinical handling and macroarchitecture of the implant design, as well as the microarchitecture of the implant surface. The preservation of marginal bone height is highly important for long-term dental implant survival. This study aimed to describe a clinical approach to preserve crestal bone level by a minimized damage combined with excellent microstructure and macrostructure of MegaGen® implants.

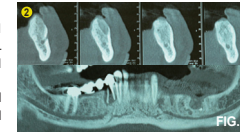


Materials and Methods

All patients who consecutively received MegaGen® EZ Plus™ internal implants between January and September 2011 at the Department of Oral and Maxillofacial Surgery, Sapienza University of Rome were included in this study. MegaGen® EZ Plus™ internal implants (n=20) were placed in the mandible and in the upper jaw of 10 patients.

Differential implant site preparation by Piezosurgery® (Mectron) dedicated inserts was performed for placement of implants with different length and diameter.

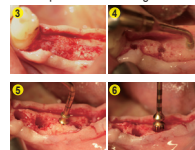
In all cases the edge of shoulders implants was positioned at the same level of marginal crest.



Results

The alveolar crest preservation should be thought of starting from the design of the implant to be placed. It was suggested that the thickness more than 1.91 mm could reduce the amount and incidence of resorption of labial bone in maxillary anterior implants. This data should address the best possible method or the combination of the methods to preserve the crestal bone for the long-term success of the implants. The bone height loss during implant site preparation with traditional hand instruments could compromise implant survival rate in atrophic crest.

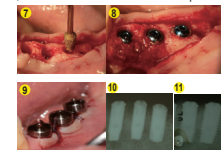
The atraumatic implant bed preparation respecting narrow bone thickness in aesthetic zone is required to meet the aesthetic patient's expectations. In this study, all implants achieved osseointegration with preservation of marginal bone.



Conclusions

MegaGen® EZ Plus™ internal implant system was used in this study with different indications and treatment modes. Analysis of the individual implants and the possible reasons for complications and failures did not indicate a specific risk in any treatment. Under daily clinical practice conditions, the implant system used in this analysis resulted in high implant survival and success rates. The technique to be followed in a given case will depend upon the density of bone, force factors by the patient, bone volume, amount of soft tissues, etc.

MegaGen® implant's placement by differential implant site preparation (Piezosurgery®, Mectron) could be considered as a suitable approach when the respect of bone volume is strongly required, such as in aesthetic zone and in atrophic bone condition.



References

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