

Osstem implant placement with ridge augmentation using “Sandwich” bone augmentation technique; a case report

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Introduction

Several clinical studies have shown that at least 1 mm of bone width buccal and lingual to the implant surface is needed to assure long-term bone coverage and implant success. With insufficient bone in the bucco-lingual dimension, if the implant surface is not fully covered with bone the result may be gingival recession, an inadequate aesthetic appearance and difficulties in maintaining adequate oral hygiene and consequently, an increased risk of peri-implant infection. Surgical techniques have been proposed to augment the bone width in the same surgical intervention when placing the implants. Among these techniques, the guided bone regeneration (GBR) approach has been the most widely used.

Purpose

The aim of this clinical case report was to evaluate the success of implants placed at the time of alveolar bone augmentation using simultaneous guided bone regeneration (“Sandwich” bone augmentation technique) in patient suffering from insufficient bone width.

Materials & Methods

A 60 years old female patient visited a dental hospital complaining pain on #45 tooth. Implant surgery was performed using Osstem TSIII implant system (4.0x8.5mm and 4.5x8.5mm) and “Sandwich” bone augmentation on dehiscence defect was concomitantly followed with allograft, xenograft and absorbable collagen membrane. At the time of 2nd surgery, apically positioned flap (APF) was performed to expand keratinized gingiva around dental implants. CAD/CAM abutment and final prosthesis was delivered at 4 months following placement.



Fig 3. Implant placement surgery with GBR (A) Preoperative clinical photograph, (B) The alveolar crest after full thickness flap elevation. The narrow ridge was observed, (C) Placement of Osstem TS III implant, (D) Decortication by using round bur on buccal plate, (E) GBR with allograft, xenograft and absorbable collagen membrane, (F) Suture was done.

Results

The case report demonstrates that TSIII implant installation on augmented ridge showed competent initial stability (30N). Deficient alveolar ridge pristine bone structures around dental implants were treated with a simultaneous GBR approach (“Sandwich” bone augmentation technique). Inner allograft layer promoted osteogenesis and outer xenograft layer maintained space.

Conclusion

Horizontal GBR with simultaneous implantation was a predictable technique with low surgical morbidity that allows shorter healing times in patient with reduced bone width. The present study showed predictable treatment outcomes for one-stage Osstem TSIII implants placed simultaneously with guided bone regeneration using “Sandwich” bone augmentation technique.