

Important Numbers in Implant Dentistry

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0 MM TISSUE LOSE- PLACING DENTAL IMPLANT IN MAXILLARY ESTHETIC ZONE: ROOT MEMBRANE TECHNIQUE

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Introduction

Placing dental implant in an extraction socket is followed by bone resorption both vertical and horizontal, it leads to surrounding tissue attenuation and causes esthetic problems in anterior maxilla, especially in buccal aspect, utilize root membrane technique buccal aspect of root is retained to preserve the periodontal ligament and bundle bone, almost no (0) mm buccal tissue recession, and long-term peri-implant tissue stable and healthy.

Objectives

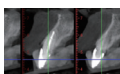
The purpose of this article is to introduce the clinical steps utilizing ROOT MEMBRANE KIT® (Megagen) and evaluate the amount of gingival recession on buccal side, the other is to check the R2-stent accuracy.

Materials and Methods

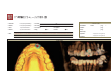
42yrs female patient, a victim of left central incisor crown-root fracture, was indicated immediate implant placement and provisionalization, using Anyridge (Megagen®) 3.5mmx13mm fixture. This case utilize Root Membrane with ONEDAY- IMPLANT concept, to restore function and esthetics as patient expected. Before surgery, we send data (CBCT DICOM file and casts, bite to R2 center for fabricating surgical stent, customized zirconia abutment and PMMA temporary crown. In order to preserve buccal tissue, utilized ROOT MEMBRANE KIT® (Megagen), and follow the drilling protocol: Gate-Glidden bur- secure the canal, IS-1 (Initial shape-1) IS-2 burs- trim, split the root into crescent shape, then remove the palatal aspect of root, round diamond Ø2.0, Ø3.0- crestal trimming of root membrane below 3mm from gingival, FS-1 (final shaper-1), FS-2-1 rim and smoothen root fragment, tapered diamond- prevent fixture sliding to buccal side. After root membrane preparation, apply the R2 stent, and perform 3-D guided osteotomy, followed by customized Zr. abutment and PMMA crown connection.



#21 crown before



CT image before surgery



R2GATE surgery report



Drilling protocol and DIGITAL EYE



#21 crown-root fracture



Mesi-distal section of the root



Extraction of the palatal root section



Root membrane prepared



Keep the buccal tissue intact as possible



Apply the R2 stent and check the stability



Fixture insertion without touch the root



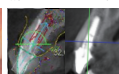
Fill the gap with FGBA+PBF (sticky bone)



Customized Zr. abutment connection



PMMA temporary crown delivery



CT image after surgery implant in the correct 3-D position as designed

Results and Discussion



7Days follow up



6 months follow up

In the particular case, we keep the buccal aspect of root intact without damage to PDL and bundle bone, therefore osteo-integration undergo without any inflammatory reaction, during healing period, on the buccal side there is no (0)mm gingival recession was noted, also utilizing R2-stent guided surgery facilitate placing implant into correct 3-D position so that we can connect the prophetic parts at the same time easily. The implant-supported prosthesis functions well and healthy peri-implant soft tissue is observed.

Conclusions

It may be concluded that retaining the buccal aspect of root and combine with immediate implant placement is a predictable technique to maintain the perimplant tissue health without gingival recession and tissue inflammatory reaction, however further histological evidence and long-term follow up has to be conducted to prove the root membrane technique to be used as a standard procedure.

References

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2. Tissue modeling following implant placement in fresh extraction sockets Mauricio G. Araújo, Flavia Sukekava, Jan L. Wennström and Jan Lindhe,...
3. Immediate Placement and Provisionalization of Maxillary Anterior Single Implants: 1-Year Prospective Study. Kan, Joseph Jan/Feb2003

