

Important Numbers in Implant Dentistry

100%

Success rate using AnyRidge implants after 2 years of loading

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Introduction

During the immediate post-extraction period the buccal plate of a maxillary anterior dentition is most often very thin leading to significant dimensional alterations (Braut, et al.2012, Nevins et al 2006). The intentional retention of roots, was the first approach that was introduced for the preservation of alveolar ridge dimensions (O' Neal et al 1978, Polyzois 1985). Ridge resorption can be categorized as a multi-factorial phenomenon that is partially attributed to the loss of blood supply, which is derived from the periodontal ligament (PDL) prior to tooth extraction (Araujo & Lindhe 2005). The intentional retention of the buccal aspect of the root ("Root membrane technique") with its periodontal apparatus has been proven to be efficient in maintaining a portion of the blood supply that derives from the PDL. Immediate implant placement with intentional preservation of the buccal portion of the root of a tooth may be an atraumatic approach leading to preservation of the blood supply of the buccal plate and consequent preservation of the dimensions of the alveolar ridge following immediate implant placement (Hurzel, et al. 2010). The implant rehabilitation of a tooth with hopeless prognosis in the esthetic zone without esthetic compromise remains elusive to date. The aim of the "Root membrane technique" is to evaluate the feasibility of this approach in a clinical practice setting and to report longitudinal data on survival rate of the respective implants placed.

Materials and Methods

Twenty-two fixtures (AnyRidge® MegaGen Co, Ltd, 377-2, Kyochon-Ri, Jain-Myun, Gyeongsan, Gyeongbuk, Korea) with a length between 10 to 13.0 mm, and a diameter of 3.5 to 4.5 mm were placed from 2011-2012 (4). Twenty-one patients (9 males and 12 females aged between 27-64 years of age with average age of 46.2 years were treated) participated in this private survey. All implants were immediately loaded with a cement-retained acrylic interim restoration fabricated as per routine protocol of this clinic for immediate implant placement in the esthetic zone. The final superstructure design of choice was cemented zirconium oxide-porcelain from the same laboratory and technician. The crown of the involved tooth was removed with a conventional chamfer diamond bur under copious irrigation until the remaining tooth structure was leveled one millimeter above the osseous crest. The reason for not reducing it at the level, or even below the osseous crest was to maintain the dentogingival fibers intact to enhance soft tissue esthetics. The osteotomy sites were prepared by drilling through the long axis of the roots. This technique implements with gradual endroot extraction (dentotomy- osteotomy) of the palatal aspect of the root following the drilling sequence suggested by the implant manufacturer.

1. Female, 50 years old



Fig 1. Panorax showing Pre-implant placement



Fig 2. Initial osteotomy/dentotomy



Fig 3. Sequential osteotomy/dentotomy



Fig 4. Final osteotomy



Fig 5. Implant in place

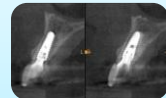


Fig 6. CAT-Scan of implant placement



Fig 7. Post-surgical Panorax



Fig 8. Provisional restoration



Fig 9. Final abutment in place

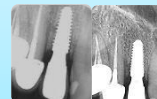


Fig 10a. X-ray just after final restoration. Fig 10b. 2 years after



Fig 11. Final restoration 2 years after

2. Female, 44 years old



Fig 1. Initial Panorax

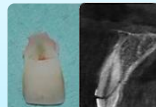


Fig 2a. The sectioned clinical crown. Fig 2b. Initial CAT-Scan



Fig 3. Final osteotomy



Fig 4. Pulp extraction



Fig 5. Implant placement



Fig 6. Implant in place



Fig 7. Final abutment in place



Fig 8. X-ray after final abutment and temporary restoration



Fig 9. Provisional restoration



Fig 10. Final restoration

ARCH/sex	PATIENTS	ANYRIDGE IMPLANTS	SUCCESS RATE %
MALE	9	10	100
FEMALE	12	12	100
TOTAL	21	22	100

Results

All twenty-two fixtures were successfully integrated indicating a success rate of 100%. CBCT evaluation indicated that there was no bone loss during this period of time regarding the alveolar ridge.

Conclusions

The 'Root membrane technique' (immediate implants placement and loading in the aesthetic zone of the maxilla), has been proven to be a successful alternative method for the aesthetic preservation of the tissues in this demanding area. More studies have to take place in order to establish this trend technique as a validated scientifically surgical procedure.

References

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