EFFECT OF FLAPLESS IMMEDIATE IMPLANT SURGERY ON SOFT TISSUE PROFILE IN THE ESTHETIC ZONE

Thesis
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BY

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بسم الله الرحمن الرحيم

يَرْفَعِ اللَّهُ الَّذِينَ آمَنُوا مِنكُمْ
وَالَّذِينَ أُوتُوا الْعِلْمَ دَرَجَاتٍ

صدق الله العظيم

الآية (11) من سورة المجادلة

Dedication

"A mother is not a person to lean on but a person to make leaning unnecessary"

Dorothy C. Fisher

I dedicate this work to the soul of my dearest mother, the greatest woman I've ever seen. Also, I dedicate this work to the most precious people in my life; my father, my wife, my son and my brothers.

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List of Abbreviations

GBR	Guided Bone Regeneration
rhBMP	Recombinant human Bone Morphogenic Protein
PTFE	Poly Tetra Fluroethylene
BMP	Bone Morphogenic Protein
DFDBA	Demineralized Freeze – Dried Bone Allograft
CPC	Calcium Phosphate Cement
PHA	Precipitated Hydroxy Apatite
DCPD	Dicalcium Phosphate Dehydrate
ACP	Amorphous Calcium Phosphate
CPHC	Calcium Phosphate Hydroulic Cement
ePTFE	Expanded Polytetra–Fluroethylene
GTR	Guided Tissue Regeneration
SLA	Sandblasted acid-attacked
PD	Probing Depth
mPI	Modified Plaque Index
mBI	Modified Bleeding Index
ML	Marginal Level of Soft Tissue
STT	Soft Tissue Thickness
WKM	Width of Keratinized Mucosa
HIDP	Height of Inter-Dental Papilla
HMIDP	Height of Mesial Inter-Dental Papilla.
HDIDP	Height of Distal Inter-Dental Papilla
CBL	Crestal Bone Loss
PS	Patient satisfaction
MCPM	Monocalcium Phosphate Monohydrate
ß – TCP	Beta Tricalcium Phosphate
PMMA	Poly – methyl Methacrylate
OCP	Octacalcium Phosphate
XCP	Extension Cone Paralleing Technique

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Introduction and Review of Literature

Dental Implants

Dental implant therapy has been demonstrated to be a highly successful and predictable treatment modality for replacement of missing teeth ***(Brånemark et al. 1977).*** In the past decades the osseointegration was the main concern, requiring a healing period of 3 to 6 months with a load free environment to facilitate undisturbed healing. It has been demonstrated that osseointegrated implants that form a direct connection with bone had a long-term predictable success**.**

In the original two-staged protocol, after a tooth was extracted, there was a healing period allowing for soft and hard tissue healing. This was followed by implant placement and a period of load-free osseointegration, ranging from 3 to 6 months, before second-stage surgery and prosthesis placement. Healing associated with oral endosseous titanium implants is based on osseointegration or ‘‘functional ankylosis’’ as described by ***Brånemark et al., 1985*** It has been advocated, that after implant placement, surgical sites should be undisturbed for 3 to 6 months to allow uneventful wound healing, thereby enhancing osseointegration between the implant and the bone.

The rationale behind this approach is that implant micro-movements caused by functional forces during wound healing may induce fibrous tissue formation rather than bone contact, leading to clinical failure. Micro movements of >100 mm were reported to be

sufficient to jeopardize healing with direct bone-to-implant contact. According to the original recommendations of ***Brånemark and Schroeder***, these periods were necessary to allow for complete osteogenesis and woven bone remodeling into load bearing lamellar bone prior to any occlusal loading. This treatment modality, though having highly successful outcomes, leads to long treatment times, multiple surgeries, and uncomfortable removable partial dentures during transition.

Replacing missing teeth with dental implants is highly successful, with average success rates between 93% and 99.4%. The success rate obtained with dental implants in various clinical situations depends to a great extent on the volume and quality of the surrounding bone. Successful osseointegration of an endosseous titanium implant requires adequate stability at the time of placement. Achieving stability depends on the bone density, the surgical technique, and the microscopic and macroscopic morphology of the implant used. In bone that is not very dense, it is often difficult to obtain implant anchorage. Sufficient density and appropriate volume of the bone are therefore crucial for successful implant treatment. It is generally accepted that implant failures can be explained by biologic or mechanical causes. Biologic etiologies may include infection, peri-implantitis, overheating of bone, and contributing systemic factors. Mechanical causes may include implant fracture, microstructure (e.g., machined surface), macrostructure (e.g., short implant length), and immediate or functional overloading resulting in bone loss. However, some implant failures have unknown etiologies that cannot be explained by any of the above factors.