شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم

HANAA ALY

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جامعة عين شمس

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قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

HANAA ALY

The effect of autogenous tooth roots for lateral alveolar ridge augmentation and staged implant placement
(A Controlled clinical study and histological assessment)

Thesis submitted to the Faculty of Oral and Dental Medicine -Ain shams University in partial fulfillment of the requirement for the Master's Degree in Periodontology department

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Dedication

To my precious **Mother** and **Father** who always support me, without them I wouldn’t never achieve anything

To my supporting system brother **Mohamed** for encouragement and care

To Dr **Mahmoud moussa** for his great help throughout this journey

To all my sisters, brothers and friends specially **Noura** that they always present for support

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List of Contents

Page

List of abbreviations ---------- i

List of Tables ---------- ii

List of Figures ---------- iii

Review of the Literature ---------- 1

Aim of the study ---------- 32

Subjects and Methods ---------- 33

Results ---------- 54

Discussion ---------- 71

Summary ---------- 82

Conclusions and recommendations ---------- 85

References ---------- 86

Arabic Summary ---------- ---

List of abbreviations

AB	Autogenous Bone
ACP	Amorphous Calcium Phosphate
BIC	Bone-to-Implant Contact
BMP	Bone Morphogenetic Protein
CBCT	Cone Beam Computed Tomography
CEJ	Cemento Enamel Junction
(d.PTFE)	Dense polytetrafluoroethylene
EDTA	Ethylenediaminetetraacetic acid
(e.PTFE)	Expanded Polytetrafluoroethylene
FGF	Fibroblast Growth Factor
FOV	Field Of View
GBR	Guided Bone Regeneration
HA	Hydroxyapatite
H & E	Hematoxylin and Eosin
NCP	Non-Collagenous Proteins
OCP	Octacalcium Phosphate
OPN	Osteopontin
PDGF	Platelet Derived Growth Factor
PRP	Platelet-Rich Plasma
TGF-β	Transforming growth factor- β
TCP	Tricalcium phosphate
TR	Tooth Roots
UCLA	University of California Los Angeles

List of Tables

Table	Title	Page
1-	The indication for ramus block graft	18
2-	Different bone graft alternatives	20
3-	Dentin composition as summarized by *(Goldberg, et al. 2011)*	*24*
4-	Descriptive statistics and comparison of clinical measurement by bone caliper between tooth block and bone block.	56
5-	Descriptive statistics of percent change of clinical measurements (bone caliper) between tooth block and bone block	57
6-	Descriptive statistics and comparison of radiographic measurement by CBCT between tooth block and bone block	59
7-	Descriptive statistics of percent change of radiographic measurements (CBCT) between tooth block and bone block groups	60
8-	Descriptive statistics and comparison of histology results between tooth block and bone block group	62

List of Figures

Figure	Title	Page
1.	Digram of cologne classification 2013 ----------	5
2.	a. Recipient site incision, b. full thickness flap elevation----------	37
3.	Reciepient site bone decortication ----------	37
4.	a. Clinicaly partially impacted right third molar (48) b. Radiograph of partially impacted 48 c. Extraction and decapitation of tooth no 48 d. tooth root after preparation and cementum removal ----------	39
5.	a,Donor site retromolar area exposure,b.osteotomy c; bone block after harvesting ----------	41
6.	a;tooth block fixation frontal view.b; bone block fixation frontal view c;tooth block top view. d,e; suturing ----------	43
7.	a,b graft after exposure , c,d core biopsy , e; screw removal , f. implant placement , g; suturing----------	46
8.	a.full thickness flap reflection"graft exposure" b; screw removal. c, d, core biopsy , e; implant placement, f; flap closure----------	47
9.	clinical assessment by bone caliper a; tooth block (peroperative) b,buccolingual width, c: tooth block (immediately) after augmentation d; buccolingual width , e;bone block 6 months from augmentation f;buccolingual width ----------	48
10.	Radiographic assessment by CBCT a; tooth block (preoperative) b; tooth bloc (immediately postoperative) c; bone block (6 months postoperative) ----------	50
11.	Line chart illustrating mean clinical measurement by bone caliber in both groups at different observation times----------	57

List of Figures (cont.)

Figure	Title	Page

12. Line chart illustrating mean radiographic CBCT values in tooth block and bone block groups at different observation times----------60

13. Line chart illustrating correlation between clinical and radiographic results----------61

14. Bar graph illustrating bone area fraction%, fibroustissue % in tooth block and bone block groups.----------63

15. Photomicrographs of H&E stained sections of core biopsy from tooth block with different maginficatons, a, b image showig residual dentin (blue arrow) (orig. mag. 4x, 10x), c. fibrous tissue connection (white arrow) between native bone (black arrow) and tooth block (blue arrow), in addition to connected by mineralizing matrix with viable cells (yellow arrow) (orig. mag. x20), d. osteoid formation with viable cells (yellow arrow) and minralizing matrix (green arrow) at the periphery of tooth block (blue arrow) (orig. mag. 40x)----------64

16. Photomicrographs of of H&E stained sections of core biopsy from bone block with different maginficatons, a, b image showig residual bone (green arrow) and new bone (blue arrow) (orig. mag. 4x, 10x), c. fibrous tissue connection (black arrow) between native bone (green arrow) and new bone block (blue arrow), (orig. mag. x20), d. minralizing matrix (green arrow) showed haphazard bone lacunae in new bone (blue arrow) and well organized old bone (greem arrow) (orig. mag. 40x).----------66

17. a, frontal view before augmentation b, final crown 6 months from implant placement c,d measurements by bone caliper before augmentation, bone width (3mm) e,f ;bone width measurement by bone caliper after 6 months (7mm)-67

List of Figures (cont.)

Figure	Title	Page

18. a;CBCT preoperative(4,4mm crestal, 5.2mm middle, apical 5.8mm)b. immediate postoperative (crestal 6.34 mm, middle 7.47mm, apical 8.34mm)c. 6 months postoperative (crestal 6..22mm, middle 7.68mm, apical 7.82mm----------68

19. a, frontal view before augmentation b,final crowns 6 months from implant placement c,d measurements by bone caliper before augmentation(4mm), e,f; bone width measurement by bone caliper after 6 months (6mm)----------69

20. a; preoperative(crestal 47mm, middle 4.1mm, apical 4mm).b; immediate postoperative(crestal 8mm, middle6.4mm, apical8.7mm) c; 6 months 6 months postoperative (crestal 6.9mm, middle 8.3mm, apical 8.5mm)---70

Review of literature

Review of Literature

Bone resorption is one of the most common complication following tooth extraction, whereas alveolar bone is gradually absorbed throughout life in buccolingual as well as apicocoronally dimension ***(Lekovic, et al. 1998).*** Successful implant therapy requires sufficient bone to be available prior to placing implants in the ideal prosthetically position. However, this requirement is often not fulfilled due to resorptive patterns after tooth extraction, these clinical situations have been successfully treated with different bone augmentation approaches ***(Buser, et al. 1995; Iasella, et al. 2003).***

The width of the alveolar ridge is normally reduced by 50% during the 12 months following tooth extraction, major changes of an extraction site take place during this period, approximately two thirds of this reduction occur within the first 3 months following teeth extraction. However, only slight changes, less than 1mm in soft tissue height occurs during the 12 months of healing ***(Schropp, et al. 2003).***

According to ***Pietrokovski and Massler 1967***, the buccal plate in the maxilla was resorbed in a greater extent than the palatal plate, the center of the edentulous ridge shifts to a position closer to the palatal plate of bone. However, the buccal plate in the mandible was resorbed more than the lingual plate, the center

of the edentulous ridge shifts lingually, the amount of tissue resorption was significantly greater in the edentulous molar region than in the incisor and premolar regions of both jaws.

After tooth extraction, bundle bone appears to be the first bone to be absorbed ***(Devlin and Sloan, 2002).*** The remodeling process results in a reduced ridge morphology in vertical height and more palatal in relation to the original tooth position ***(Pietrokovski and Massler, 1967).***

The healing events of extraction sockets have also been examined in human biopsies taken at various time points after extraction. It was shown that the density of vascular structures and macrophages slowly decreased from 2 to 4 weeks following teeth extraction, the level of osteoclastic activity slowly decreased over a 4- week period, whereas the presence of osteoblasts peaked at 6 to 8 weeks and remained almost stable thereafter ***(Trombelli, et al. 2008).***

The facial bone wall thickness in the anterior maxilla has been shown to be less than 1 mm in 90% of cases and less than 0.5 mm in almost 50% of cases ***(Huynh-Ba, et al. 2010; Braut, et al. 2011)***. In cases with such thin facial bone walls, it is consisted mainly of bundle bone that resorb following tooth extraction. In a study on 39 patients, a progressive bone resorption pattern was