

성견의 열개형 골결손 부위에 골형성 유도술식을 동반한 임플란트 식립 후의 골형성 : pilot study

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- 3.

Bone formation following dental implant placement with augmentation materials at dehiscence defects in dogs : pilot study

Ji-Yun Jeong¹, Joo-Yeon Sohn¹, Kyung-Jun Chai¹, Sung-Tae Kim¹, Sung-Min Chung², In-Seop Lee³, Kyoo-Sung Cho¹, Chong-Kwan Kim¹, Seong-Ho Choi^{1*}

1. Department of Periodontology, College of Dentistry, Yonsei University, Research institute for Periodontal Regeneration

2. Dentium Co.

3. Institute of Physics & Applied Physics, and Atomic-scale Surface Science Research Center, Yonsei University

ABSTRACT

Purpose: Guided bone regeneration(GBR) has emerged as a treatment in the management of osseous defects associated with dental implants. But several studies have reported different degrees of success of guided bone regeneration, depending upon the type of barrier selected, presence or absence of an underlying graft material, types of graft material, feasibility of technique, and clinician's preference. The aim of the present study was to evaluate bone formation following dental implant placement with augmentation materials at dehiscence defects in dogs.

Material and Methods: Standardized buccal dehiscence defects(3×5 mm) were surgically 2 Mongrel dog's mandibles, each 8 SLA surface, 8 anodizing surface implants. Each buccal dehiscence defect received flap surgery only(no treatment, control), Cytotflex[®] membrane only, Resolut XT[®] membrane only, Resolut XT[®]+Osteon[™]. Animals were sacrificed at 8 weeks post-surgery and block sections were harvested for histologic analysis.

Results: All experimental group resulted in higher bone formation than control. Resolut XT[®]+Osteon[™] group resulted appeared highest defect resolution. There was no difference between SLA and anodizing surface, nonresorbable and resorbable membrane.

Conclusion: GBR results in rapid and clinically relevant bone closure on dehiscence defects of the dental implants.

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KEY WORDS: dental implant; dehiscence defect; bone formation; GBR.

Correspondence: Seong-Ho Choi

Department of Periodontology, College of Dentistry, Yonsei University,
134 Shinchon-dong, Seodaemun-gu, Seoul, 120-752, Korea.

e-mail: shchoi726@yuhs.ac., Tel: 82-2-2228-3189, Fax: 82-2-392-0398

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: 2008 5 27 ; : 2008 6 11

79~100%

1,2.)

13-15)

3)

2가

16)

Titanium Plasma Sprayed(TPS), hydroxyapatite
, 3×5 mm

expanded-polytetrafluoroethylene teflon(e-PTFE)

Demineralize Freeze Dried Bone(DFDB)

, 12

4,5)

17)

3×4 mm

-TCP

12

6-8)

가

가

2가

가

가

가가

가

가

가

1.

9-12)

가

1)

가

가

가

20 kg

(Mongrel dog) 2

9,10)

2)

가

가

3.4 mm , 10 mm
Seoul, Korea)

(Implantium, Dentium,

2

(SLA, anodizing)

가

가

가

가 가

Sandblasted, Large

가

microporous PTFE (Cytoflex[®],

grit and Acid etched(SLA), anodizing

Unicare biomedical, Inc., Laguna Hills, California, USA)

polyglycolide poly-lactide copolymer (Resolut XT[®] W.L. Gore & Associates, Inc. Newark, Delaware, USA)

hydroxyapatite 70% -TCP 30%
100% (Osteon[™], Dentium, Seoul, Korea) 0.5~1.0mm

2.

1)

1 1 8

8

20% 10 , 2
70%, 80%, 95%, 95%, 100%, 100%

1 . methyl-methacrylate resin

7 40 μm

Hematoxylin-Eosin

2)

4 SLA,

3×5 mm

anodizing

4

3)

Atropin(0.04 mg/kg: Kwangmyung Pharmaceutical Ind. Co. Ltd., Seoul, Korea) (IV) , xylazine (Rompun, Bayer Korea Co., Seoul, Korea) ketamin (Ketara, Yuhan Co., Seoul, Korea)

(Gerolan, Choongwae Pharmaceutical Co., Seoul, Korea) 2% (1:8 , Yuhan Co., Seoul, Korea)

1 1

, 8 . 8

. 2 3.4 mm, 10 mm
8 ,
3×5 mm (Fig. 1).

(Dentium, Seoul, Korea) (Fig. 2).

4-0 nylon

(Fig.

3). 3 , 2
2 0.2% chlorhexidine(Chlorhexamed, Bu-Kwang Pharmaceutical Company, Seoul, Korea)

2

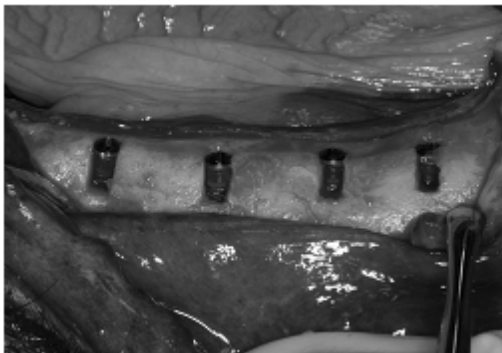


Figure 1. Bone dehiscence defect preparation on implant buccal aspect.

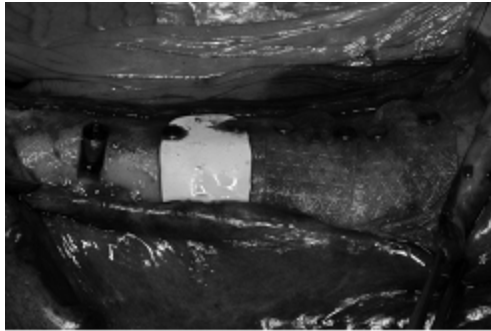


Figure 2. After defect treatment.

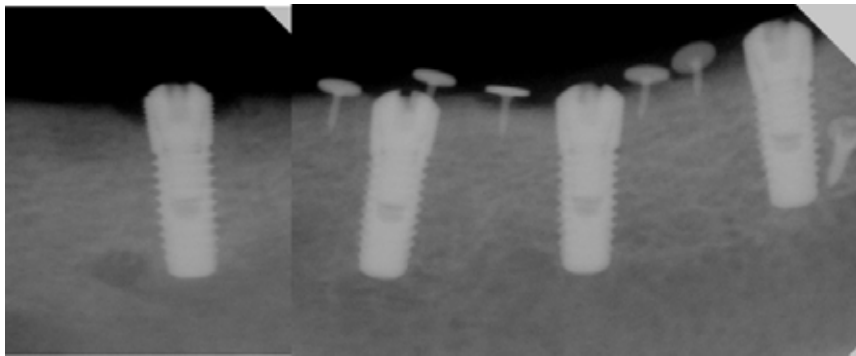


Figure 3. Radiographic taking after treatment.

3. 가

1) chlorhexidine

2) , 8

2)

x10, x20, x40

1.

(, 1, 2, 3)

가

2.

1) 5 mm

3

(Fig. 4).

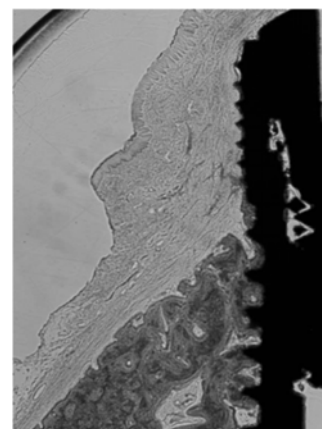


Figure 4. Control; anodizing surface (8wk, x10).

2) 1 (Cytoflex[®])
)

3) 2 (Resolut XT[®])
)

Resolut XT[®]

Cytoflex[®]

1

Cytoflex[®]

(Fig. 6a, b).

(Fig. 5a, b).

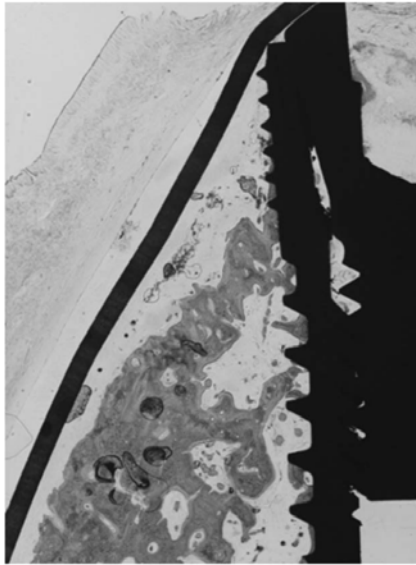


Figure 5a. Cytoflex[®]; SLA surface (8wk, $\times 10$).

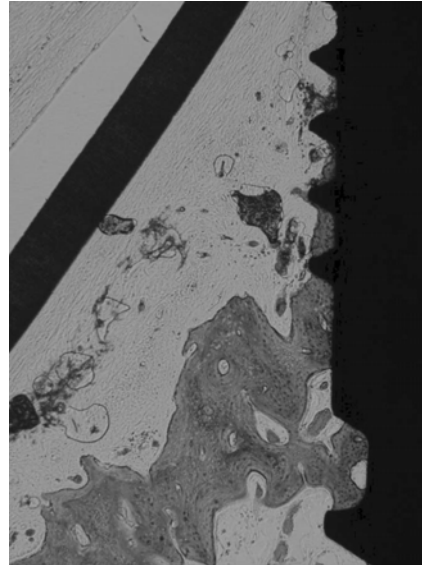


Figure 5b. Cytoflex[®]; SLA surface (8wk, $\times 20$).

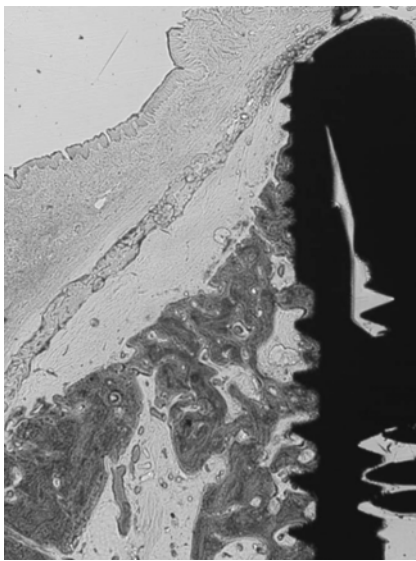


Figure 6a. Resolut XT[®]; SLA surface (8wk, $\times 10$).

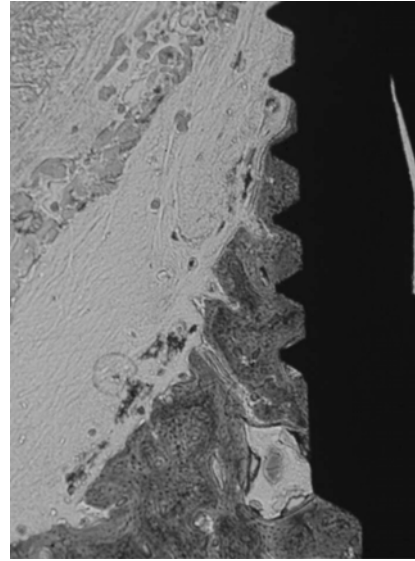


Figure 6b. Resolut XT[®]; SLA surface (8wk, $\times 20$).

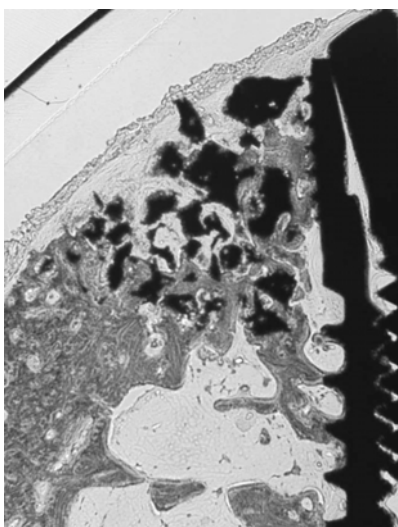


Figure 7a. Resolut XT[®]+Osteon[™], anodizing surface (8wk, $\times 10$).

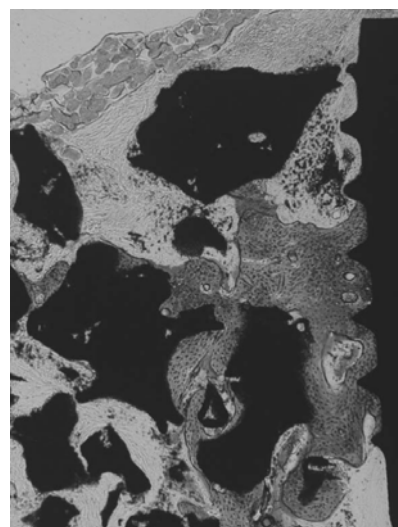


Figure 7b. Resolut XT[®]+Osteon[™], anodizing surface (8wk, $\times 20$).

4) 3 (Osteon[™] Resolut XT[®])
 Resolut XT[®] 가
 , Resolut XT[®],
 Cytoflex[®] 1, 2
 가
 가
 가
 가
 (Fig. 7a, b).
 2가
 , 8
 가
 1 , 3
 Cytoflex[®], Resolut XT[®], Resolut XT[®]

18-22) Dahlin
 e-PTFE
 4.7 mm
 , 3.6 mm
 Becker¹⁹⁾ 5 mm
 e-PTFE
 4.2 mm, 3.8
 mm, 가 5 mm
 . 1998¹⁶⁾ TPS, hydroxyapatite
 , 3x5 mm
 e-PTFE DFDB
 12
 2006¹⁷⁾
 3x4 mm -TCP
 12
 가 가
 ,
 가
 가

가 , 가가 , 가

3x5mm , 3

가

가

가가 , 가

(3) 가

가

11,12,23)

가

24) 10~20 μm

25)

11,12,26)

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