

2

\* . \* . \* . \* . \*\* . \*\* . \* . \*

\*  
\*\*

I. Material, W.L. Gore & Associates, Flagstaff, AZ, USA) ,  
4 6

1) , 가 ,  
. 1976 Melcher<sup>2)</sup>가  
, 가  
가

3-7)

가 ,  
,  
가 .  
collagen,

. Gottlow <sup>6)</sup>  
2

(dura mater), ,  
<sup>13)</sup>.  
polylactic acid,

가 Becker  
<sup>8)</sup>, Schallhorn McClain<sup>9)</sup>, Caffesse <sup>10)</sup>

polyglycolic acid  
poly(glycolide - lactide) poly( - hydroxy  
acid)

Pontoriero <sup>11)</sup> Lekovic <sup>12)</sup> split  
mouth

BioMesh ( , , )  
,  
polyglycolide mesh ,  
polyglactac acid polyglycolic acid  
가 porogen

expanded polytetrafluoroethyl -  
ene(ePTFE, Gore - Tex Periodontal

14).  
 2  
 BioMesh ePTFE  
 6  
 가 .  
 II.  
 1.

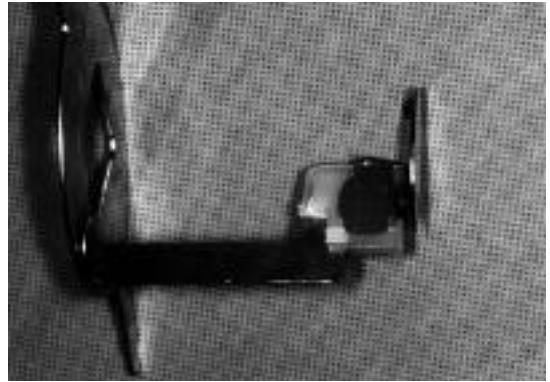


Figure 1. Precision and bite block with a

가 2  
 ,  
 ,  
 , (1)  
 2 (2)  
 (3)  
 가 4mm (4)  
 가 3mm (5)  
 가 (6)  
 가  
 24 ,  
 (BioMesh ) (Gore -  
 Tex ) , 14  
 ( 7 , 7 , 44 ) , 10  
 ( 5 , 5 , 48 ) .



Figure 2. Precision and bite block in a stone model.

Precision (Marsel, PA, USA)  
 가 pattern  
 resin(GC Corp., Tokyo, Japan)  
 2 1, 2  
 Precision  
 (Figure 1, 2).

2. 가  
 (1)

(stent )

bite block stent (Figure 3)

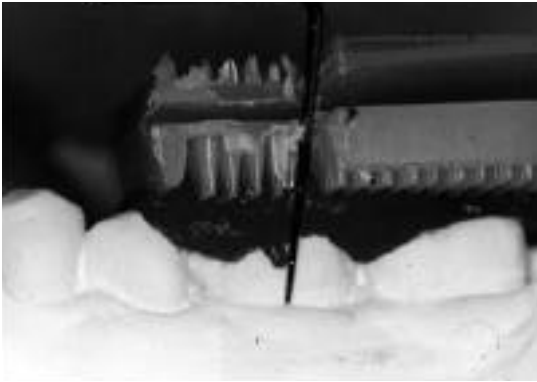


Figure 3. Probing depth measurement with a bite block template.



Figure 4. Class II furcation defect following defect debridement.

(PI)<sup>15)</sup>

(GI)<sup>16)</sup>

(GMP)<sup>17)</sup> -

1.0mm

(PD) - color coded Nabers probe( Q2N Nabers, Hu - Friedy, Chicago, IL, USA) CP12 probe(Hu - Friedy, Chicago, IL, USA)

1.0mm

(CAL) -

1.0mm

(TM) - Periotest(Siemens Ltd., Bensheim, Germany) value

(2)

6

6

6

subtraction(Emago

/Advanced v. 3.2, Oral Diagnostic Systems, Netherlands)



Figure 5. Placement of BioMesh barrier.

(3)

3.

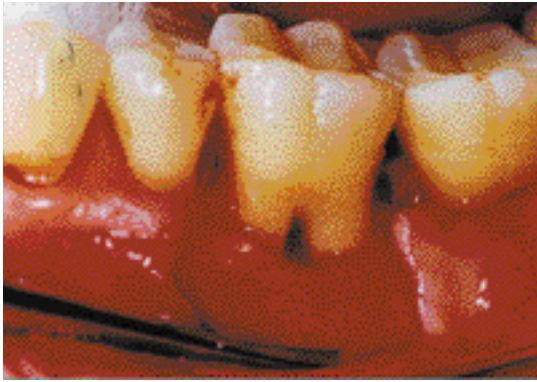


Figure 6. Class II furcation defect following defect debridement.



Figure 7. Placement of Gore - Tex barrier.

BioMesh(DMB2000 ) ePTFE  
 membrane(GTW1 )

3mm

가

Gore - Tex

(ePTFE) DexonII (BioMesh )  
 (Figure 4,  
 5, 6, 7).

2  
 2  
 4 - 6 0.1% chlorhexidine  
 digluconate ( , , ,  
 ) 2

e - PTFE 1  
 4 - 6

, 4 0.1% chlorhexidine diglu -  
 conate 2

4.

4

, 0.1%  
 chlorhexidine digluconate 2

4 6 (roll technique)  
 (Butler Gum  
 311, John O. Butler Company, IL, USA)  
 , 4

5.

가  
 가  
 가  
 parametric)

(non -

Table 1. Clinical measurements at baseline

Variable	BioMesh(n=14)		P	ePTFE(n=10)	
	Mean ± SD	Range		Mean ± SD	Range
PI	1.1 ± 0.5	0 - 2	NS	1.1 ± 0.6	0 - 2
GI	1.0 ± 0.4	0 - 2	NS	0.9 ± 0.6	0 - 2
GMP	6.6 ± 0.9	6 - 9	NS	6.5 ± 0.7	6 - 8
PD	6.4 ± 1.7	4 - 10	NS	6.1 ± 0.9	4 - 7
CAL	7.0 ± 1.3	3 - 8	NS	6.6 ± 1.3	4 - 7

NS: non - significant

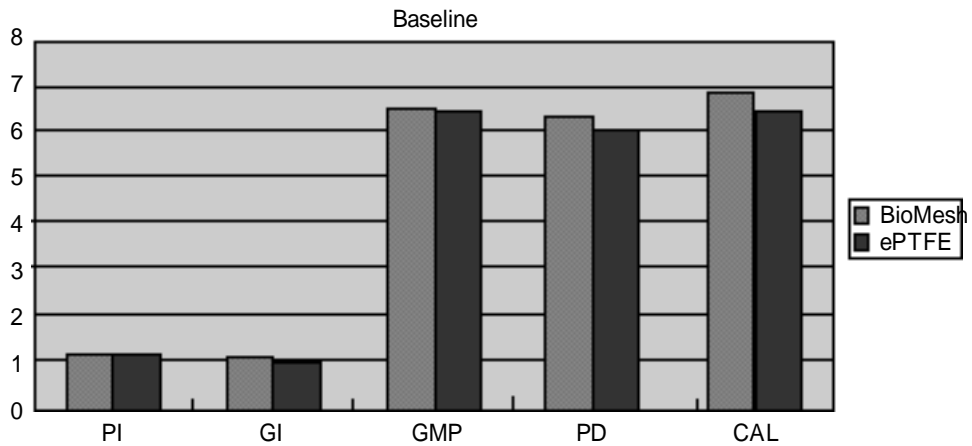


Figure 8. Clinical measurements at baseline

Mann - Whitney U test

6 ( .  
 , , ) , Wilcoxon 1.  
 signed - rank test 6  
 . SPSS  
 software version 7.0 (SPSS Inc., Chicago, IL. USA) , 0.05 (Table 1,  
 Figure 8).  
 2.

III.

가

Table 2. Clinical measurements at 6 months

Variable	BioMesh(n=14)			ePTFE(n=10)	
	Mean ± SD	Range	P	Mean ± SD	Range
PI	0.3 ± 0.5	0 - 1	0.049	0.7 ± 0.5	0 - 1
GI	0.1 ± 0.4	0 - 1	0.160	0.4 ± 0.5	0 - 1
GMP	7.6 ± 1.0	6 - 10	0.823	7.6 ± 0.7	7 - 9
PD	3.4 ± 1.0	2 - 6	0.574	3.1 ± 0.6	2 - 4
CAL	5.1 ± 1.4	3 - 8	0.715	4.7 ± 0.9	3 - 6

Table 3. Changes in clinical measurements between baseline and 6 months

PI		GI		GMP		PD		CAL	
Baseline	P	Baseline	P	Baseline	P	Baseline	P	Baseline	P
1.1 ± 0.5	<.000	0.3 ± 0.5	<.000	0.1 ± 0.4	<.000	7.6 ± 1.0	0.823	6.4 ± 1.7	<.003
0.3 ± 0.5		1.0 ± 0.4		6.6 ± 0.9		3.4 ± 1.0		7.0 ± 1.3	

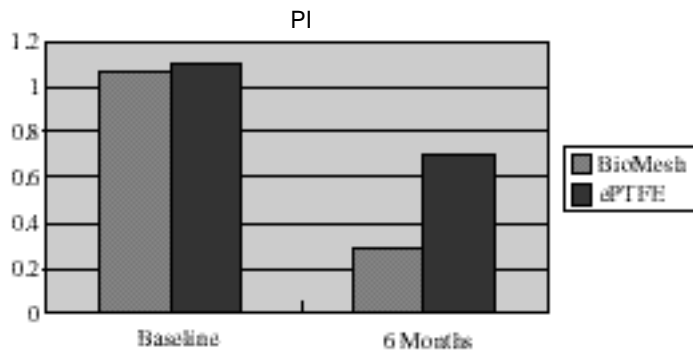


Figure 9. Changes in plaque index.

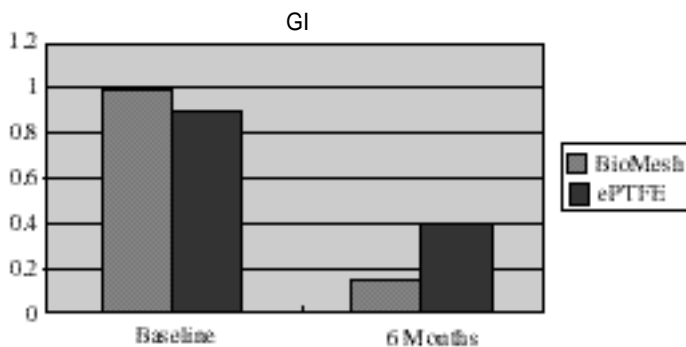


Figure 10. Changes in gingival index.

가  
reconstruction

subtraction

가

가

3.

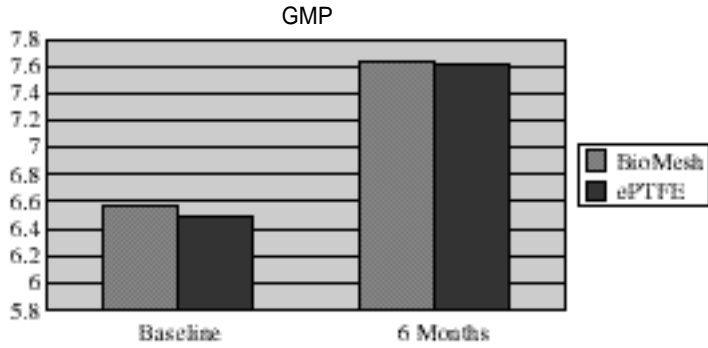


Figure 11. Changes in gingival margin position

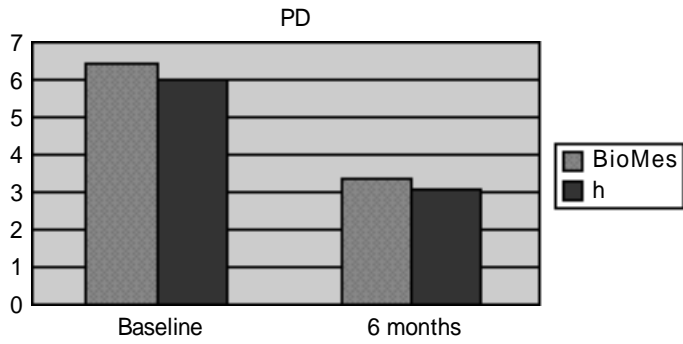


Figure 12. Changes in pocket depth

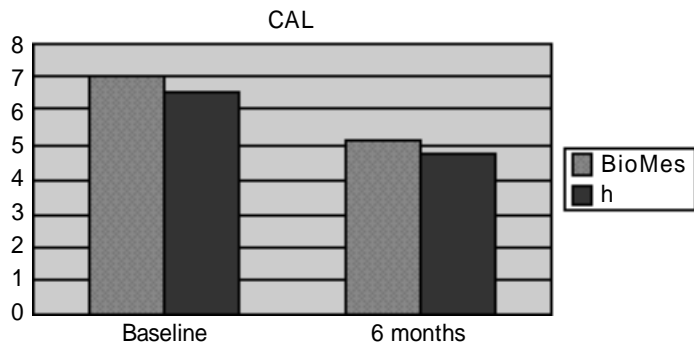


Figure 13. Changes in clinical attachment level

6 (PI)  
BioMesh, ePTFE  
(P < 0.00, P = 0.04, Table 3, Figure 8), 6  
BioMesh ePTFE

(P = 0.049, Table 2, Figure 9).  
6 (GI)  
BioMesh, Gore - Tex  
(P < 0.00, P=0.05, Table 3, Figure 9), 6

BioMesh (P = 0.160, Table 2, Figure 10).

4.  
6 (GMP)  
BioMesh, ePTFE  
가  
(P < 0.00, P < 0.00, Table 3, Figure 10),  
(P = 0.823, Table 2, Figure 11).

6 (PD)  
BioMesh, ePTFE  
(P < 0.00, P < 0.00, Table 3, Figure 11), 6

가 (P = 0.574, Table 2, Figure 12).

6 (CAL)  
BioMesh, ePTFE  
(P < 0.00, P < 0.00, Table 3, Figure 12), 6

가 (P = 0.715, Table 2, Figure 13).

IV.  
2  
6  
가 6  
가

18,19)

BioMesh  
,  
1mm  
Hugoson<sup>17)</sup>  
polylactic acid ePTFE 0.3mm, 0.9mm,  
Blumenthal<sup>20)</sup> collagen ePTFE  
1.7mm, 1.8mm, Black<sup>21)</sup> collagen  
ePTFE 0.6mm, 0.5mm, Yukna<sup>22)</sup>  
ePTFE 1.0mm, 1.0mm, Anjos<sup>23)</sup>  
cellulose ePTFE 1.0mm, 0.67mm

24,25). Anjos<sup>23)</sup> (con - cavity)

1mm





0.1% chlorhexidine

21).

가

33).

34). Machtei 35)

2

가

(osseous wall)

(root - bound wall)

가

가

, Hugoson 17) 2

가

BioMesh

가

2

2

Rosenberg 36)

가가

4

7

80%가

VI.

Tonetti 37)

Mellonig 38) 2

ePTFE open flap debridement

. 1)

(root trunk) 가

. 2)

3)

2

. 4)

가 37).

(developmental groove), (concavi-

ty) internal ridge debride-

ment

가

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- Abstract -

## Treatment of Class II Furcation Involvements in Humans with Bioabsorbable Guided Tissue Regeneration Barriers

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The purpose of this 6 - months study was to compare the clinical and radiographic outcomes following guided tissue regeneration treating human mandibular Class II furcation defects with a bioabsorbable BioMesh barrier(test treatment) or a non - absorbable ePTFE barrier(control treatment). Fourteen defects in 14 patients(mean age 44 years) were treated with BioMesh barriers and ten defects in 10 patients(mean age 48 years) with ePTFE barriers. After initial therapy, a GTR procedure was done. Following flap elevation, root planing, and removal of granulation tissue, each device was adjusted to cover the furcation defect. The flaps were repo -

sitioned and sutured to complete coverage of the barriers. A second surgical procedure was performed at control sites after 4 to 6 weeks to remove the nonresorbable barrier. Radiographic and clinical examinations (plaque index, gingival index, tooth mobility, gingival margin position, pocket depth, clinical attachment level) were carried out under standardized conditions immediately before and 6 months after surgery. Furthermore, digital subtraction radiography was carried out. All areas healed uneventfully. Surgical treatment resulted in clinically and statistically equivalent changes when comparisons were made between test and control treatments. Changes in plaque index were 0.7 for test and 0.4 for control treatments; changes in gingival index were 0.9 and 0.5. In both groups gingival margin position and pocket depth reduction was 1.0mm and 3.0mm; clinical attachment level gain was 1.9mm. There were no changes in tooth mobility and the bone in radiographic evaluation. No significant ( $p < 0.05$ ) difference between the two membranes could be detected with regard to plaque index, gingival index, gingival margin position, pocket depth, and clinical attachment level. In conclusion, a bioabsorbable BioMesh membrane is effective in human mandibular Class II furcation defects and a longer period study is needed to fully evaluate the outcomes.

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Key words: Guided tissue regeneration; furcation/surgery; membrane, barrier; ePTFE, BioMesh; clinical trials