

긴 복잡 관동맥 협착병변의 Single Long Stent와 Multiple Conventional Stent의 조기 및 후기 시술성적에 관한 연구

가

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Immediate and Long Term Outcome of Single Long Stent for Long Complex Coronary Artery Stenosis Compared to Multiple Conventional Stent

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ABSTRACT

Coronary stenting for long complex lesion is effective but associated with complication. We compared the results of stenting between with multiple conventional stenting group (group A) and with single long stenting group (group B). Fifty patients were prospectively and randomly enrolled : 25 patients for each group. Each group showed no significant differences of clinical characteristics. One patient died of heart failure in each group, not associated with the procedure itself. One patient had cerebrovascular accident in each group. Five patients had major bleeding (2, group A ; 3, group B). Angiographic success rate was 100% in each group and procedural success rate was 96% and 100% in group A and B, respectively. Angiographic and clinical restenosis rate at 6 months follow-up were 60%, 36% in group A and 65%, 44% in group B, respectively ($P=NS$). Multivariate analysis showed that several factors affected the angiographic restenosis rate as follows ; a) male gender ($M : F=76.9% : 25.0%$, $p<0.001$), b) AMI (AMI : stable angina pectoris= $72.7% : 66.7%$, $p<0.001$), c) lesion length d) residual stenosis. In conclusion, there were no statistical differences of restenosis and complication rate between the two groups. Our data support single long stenting is acceptable and economically more favorable for long diffuse lesion, compared to multiple conventional stenting. (Korean Circulation J 1998;28(9):1465-1472)

KEY WORDS : Long complex lesion · Stent.

가

서 론

74~98%

1-4)

: 1998 4 29

: 1998 9 25

: , 405 - 220

1198 가

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(long balloon) , cardiac scintigraphy
가 . 가

19)

15 - 18)

스텐트삽입술

50%

가 20 mm

as -
pirin 300 mg , ticlopidine 500 mg 4
aspirin

long, single 1 ticlopidine , ticlopidine
conventional, multiple aspirin 5
1 hepa -
rin 1 aspirin warfa -
rin heparin
heparin

대상 및 방법

결 과

대 상

1996 7 1997 2 대 상 (Table 1)
50% 50 . 가
20 mm 가 25 10 : 6 ,
가 62.0 ± 9.2 .
2 가 7 , 가 3 ,
(Gianturco Roubin (GR) - II stent, 가 2 , 가 13 .
= 40 mm) Palmaz - Schatz (PS) 가 24 , Cook
quantitative coronary angiogram 가 10 , Micro 가 7 , GR 가 4
(reference diameter), (mi - , Nir 가 3 , Cordis 가 1 , Jo
nimal luminal diameter), (percent dia - 가 1 . 2 50
meter stenosis) 가 14
11 . 25
19 : 6 60.2 ± 9.0
6 가 16 ,
가 가 2 , 가 4 ,
가 2 , 가 1 .
GR (wire coil type, length = 40 mm)
50% (diameter stenosis) 1
가 9 , 가 2 , 14

가		
()	62.0 ± 9.2	60.5 ± 8.9
(:)	19 : 6	19 : 6
cholesterol (mg/dL)	12/25 (48%)	13/25 (52%)
	6/25 (24%)	6/25 (24%)
	10/25 (40%)	9/25 (36%)
	185.9 ± 47.3	172.5 ± 41.5
	7/25	16/25
	3/25	2/25
	2/25	4/25
	13/25	2/25
	0/25	1/25
	14	9
	0	2
()	11	14
	Palmaz-Schatz stent (24) ;	
	Cook stent (10) ;	
	Microstent (7) ;	
	GR stent (4) ;	GR II stent (25)
	Nir stent (3) ;	
	Cordis stent (1) ;	
	Jostent (1) ;	

1467

	가	(n=25)	(n=25)	p-value
(mm)	3.4 ±	0.4	3.2 ± 0.4	0.100
(mm)	29.4 ±	6.5	32.8 ± 5.9	0.062
(mm)	0.7 ±	0.5	0.5 ± 0.5	0.257
(mm)	3.3 ±	0.4	3.0 ± 0.5	0.075
(%)	78.9 ±	15.6	83.3 ± 16.9	0.337
(%)	3.5 ±	11.6	4.8 ± 15.2	0.738
(mm)	1.60 ±	1.25	1.79 ± 0.81	0.656
()	1.04 ±	0.08	1.06 ± 0.08	0.513
(%)	- 40.4 ±	39.4	- 56.6 ± 27.8	0.282
(%, 6)	60 (6/10)		64.7 (11/17)	NS
(%)	36 (9/25)		44 (11/25)	NS
(%)	96 (24/25)*		100 (25/25)	NS
()	CVA(1), Hematoma(2/3)**		CVA(1), Hematoma(3/3)**	NS

NS : not significant

. , M - HEART tri -

고 안 가 , Bourassa¹²⁾ 가

가 , 2) , 3) 1)

, (multivariate analysis)

74~98%

Her - (static mans¹³⁾

(abrupt closure) and dynamic criteria)

, Ellis⁷⁾ (roughness index) 가 - ,

(acute closure)가 140

2 가 , 가

, 45 , 가 , . , 1)

7가 2) 가 가

6가 가

Myler,⁸⁾ Hermans,⁹⁾ Savage¹⁰⁾

가 , ,

가¹⁹⁾ Edward¹⁸⁾ GR
 PS
 6 GR 가
 , Tenaglia¹⁴⁾ 10 mm 가
 PS
 , 97% ,
 90% 가 6%
 major dissection 11% 2
 50~55%
 ,
 가
 가 6
 , Sha -
 knovich¹⁵⁾ 3 PS 50 2
 54 가 25 ,
 , 98.2% , 87% 가 25
 1 ,
 (elective CABG) 3 (5.6%) NYHA IV
 , (subacute
 thrombosis) 2 . Maiello , 1 2
¹⁶⁾ 20 mm 가 89 3 가
 2.4 PS IVUS
 (intravascular ultrasound) , 93%
 , 4~6 가 96%(1 guidewire
 35% . Fausto), 100%
¹⁷⁾ 13 mm 가 50 , 100%
 GR 6
 , 6
 , 27%
 , 가 60%
 , 35%, 64.
 . Maiello 7% 44%
 ,
 Fausto Maiello 3.06~3.31
 mm 3.11 mm 가 ,
 15.6~15.8 mm, 32 mm ,
 , 가 (unsta -
 . Fausto GR ble coronary syndrome)
 , Maiello PS , GR , Wiktor (
 ,
 11 가 8 72.

Table 3. 한 개의 긴 스텐트 삽입군에서 재협착에 관여하는 요소들의 비교

	(11)	(6)	p-value
(:)	10 : 1	3 : 3	<0.001
Cholesterol (mg/dL)	181.0 ± 33.6	186.2 ± 31.3	0.780
(mm)	36.3 ± 4.0	30.6 ± 4.9	0.027
()	1.03± 0.07	1.06± 0.065	0.412
(%)	7.15± 9.1	12.6 ± 8.1	0.238
(mm)	0.43± 0.54	0.54± 0.48	0.684
(mm)	2.89± 0.32	3.02± 0.34	0.458
(mm)	3.13± 0.36	3.48± 0.48	0.115

Table 4. 한 개의 긴 스텐트 삽입군에서 성별 관동맥 조영술상 특징

	(n=11)	(n=4)	p-value
(mm)	3.2 ± 0.4	3.3 ± 0.5	0.78
(mm)	32.3 ± 5.5	33.4 ± 4.9	0.73
(mm)	0.3 ± 0.5	0.8 ± 0.4	0.06
(mm)	2.9 ± 0.3	3.0 ± 0.4	0.94
(%)	78.9 ± 15.6	83.3 ± 16.9	0.34
(%)	8.6 ± 8.9	10.5 ± 10.3	0.73
()	1.03± 0.08	1.06± 0.04	0.55
(%,)	67.7 ± 17.9	47.8 ± 19.4	0.08
(%, 6)	76.9 (10/13)	25 (1/4)	<0.001

7%) (Table 3), 가 , 36% 44% 가 ((+) : (-) = 36.3±4.0 mm : 30.6±4.9 mm, p =0.027). 가 (p=0.036) (p=0.009) 가 . 50% , 67.7 ± 17.9%, 47.8% ± 19.4% , 1.07 ± 0.72 mm, 1.68 ± 0.57 가 . GR II (= 40 mm) (p=0.075, p=0.15) (Table 4). 17 (13 , 4) (

가) 7%, $p < 0.001$).
 (: $= 36.3 \pm 4.0$ mm : 30.6 ± 4.9 mm, $p = 0.027$), ($p = 0.036$)
 가
 ($p = 0.009$) 가
 요 약
 결 론 :

연구배경 :

방 법 :

1996 7 1997 2
 50%

가 20 mm

(가),

중심 단어 :

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()

6

결 과 :

1) 50 ~25
 25

1

가

1

가

2

,

3

가

2)

100%

,

가

96%,

100%

. 6

가

60%, 36%

64.7%, 44%

3)

(Gianturco - Roubin II stent,

length = 40 mm)

; 1)

(:

= 76.9% : 25.0%, $p < 0.001$), 2)

(

:

= 72.7% : 66.

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