

Crosswire^{NT}를 이용한 완전 폐쇄 관상동맥 병변에 대한 관상동맥 중재술

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Percutaneous Coronary Intervention Using Crosswire^{NT} in Total Occlusion of Coronary Artery

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ABSTRACT

Background and Objectives : Despite marked advances in the design of percutaneous coronary intervention hardware, total occlusion remains associated with a low primary success rate. The most common cause of failure is the inability to cross the lesion with a guidewire. We report the results of a non-randomized single-center investigation using a hydrophilic coated guidewire (Crosswire^{NT}). **Subjects and Methods :** We analyzed the angiographic results of 92 patients (68 males, 24 females, age 58.8 ± 9.7 years-old) who underwent angioplasty utilizing Crosswire^{NT} for either total (TIMI flow 1) or subtotal occlusion at Chonnam National University Hospital between December 2000 and July 2001. **Results :** Clinical diagnoses of the studied subjects revealed 40 cases of acute myocardial infarction, 15 of myocardial infarction, 29 of unstable angina and 8 of stable angina. The primary success rate was 79.3% (73/92), the success rate in total occlusion was 69.0% (40/58), and that of the chronic total occlusion cases among the total occlusion group was 64.3% (18/28). The success rates in the use of Crosswire^{NT} as the first and second choice were 85.7% and 78.8%, respectively. The abrupt occlusive lesions, complex lesions more than type B₂, and presence of collateral circulation were all associated with a lower success rate. Coronary artery perforation occurred in one case. **Conclusion :** The new nitinol hydrophilic wire, Crosswire^{NT}, is a safe and effective tool for the recanalization of total occlusive coronary lesion. (Korean Circulation J 2002;32(2):125-130)

KEY WORDS : Coronary disease ; Angioplasty, transluminal, percutaneous coronary.

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서 론

가

1977

가 가 , 가

대상 및 방법

대 상

2000 12 1 2001 7 30
Crosswire^{NT}
92
68 , 24 58.8 ± 9.7
Crosswire^{NT} 7
Crosswire^{NT}
4)10) 85
40 , 15 , 29
8

방 법

aspirin ticlopidine(500 mg/day)
procedure 48 , 7F
(Judkins Amplatz)
7,500 10,000 units hep -
arin (0.
014 inch Choice wire or Floppy wire)
Crosswire^{NT}
Crosswire^{NT}
stiff wire
Crosswire^{NT} Cr -
Shinobi wire
Crosswire^{NT} 40 cm osswire^{NT}가
hydrophilic coating
(Fig. 1).
CrossWireTM
5) , 11)
CrossWire^{NT}(Terumo Corp. Tokyo, Japan) Myocardial Infarction(TIMI) flow

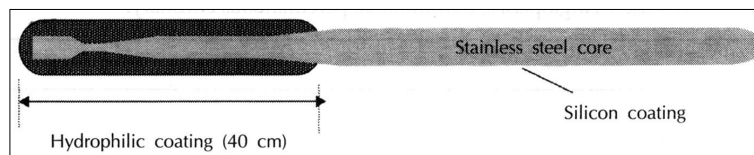


Fig. 1. Distal surface of CorsswireNT up to 40 cm from distal end is coated with hydrophilic polymer.

가 .¹²⁾

가 TI -

MI flow 0 1 ,

3

50% , TIMI flow가 grade 2

가

ticlopidine 1

aspirin

Rentrop Cohen¹⁴⁾

Grade 0 , grade

1 , grade 2

, grade 3

통계분석

SPSS Independent Samples t - test

paired t - test, Pearson bivariate simple correla -

tion, Wilcoxon signed - ranks test p

0.05

결 과

대상 환자의 병변 특성

92 58.8 ± 9.7

58

45 , 12 , 35

abrupt lesion 34 , tapered lesion 58

47 grade 80.0%,

grade 1 12 , grade 2 18 , gr - 82.8%,

ade 3 17 (Table 1).

28 22 (78.6%)

6.5

Table 1. Clinical characteristics and lesion characteristics

Characteristics	No (%), n=92
Age (years)	58.8 ± 9.7
Sex (M/F)	68 (73.9) / 24 (26.1)
Clinical diagnosis	
Acute myocardial infarction	40 (43.5)
Old myocardial infarction	15 (16.3)
Unstable angina pectoris	29 (31.5)
Stable angina pectoris	8 (8.7)
Target vessel	
Left anterior descending artery	45 (48.9)
Left circumflex artery	12 (13.0)
Right coronary artery	35 (38.1)
Lesion morphology	
Abrupt lesion	34 (37.0)
Tapered lesion	58 (63.0)
Collateral circulation	
Grade 0	45 (48.9)
Grade 1	12 (13.0)
Grade 2	18 (19.6)
Grade 3	17 (18.5)
TIMI flow	
0	52 (56.5)
I	6 (6.5)
II	18 (19.6)
III	16 (17.4)

M : male, F : female, TIMI : thrombolysis in myocardial infarction

시술 성공률에 관계하는 인자

79.3% ,

13 (68.4%),

1 (5.3%), no reflow 가 5

(26. 3%) 가 가

(Table 2).

80.0%, 80.0%,

82.8%, 62.5%

가 (Table 3),

가 가

Table 2. Causes of failure according to clinical diagnosis

Clinical diagnosis	Causes of failure, n=19 (%)		
	Failure of guidewire passage	Failure of balloon catheter passage	No reflow
Acute myocardial infarction	4 (50.0)	1 (12.5)	3 (37.5)
Old myocardial infarction	2 (66.7)	0	1 (33.3)
Unstable angina	4 (80.0)	0	1 (20.0)
Stable angina	3 (100)	0	0
Total	13 (68.4)	1 (5.3)	5 (26.3)

Table 3. Success rate and presence of collateral circulation according to clinical diagnosis

Clinical diagnosis	Success rate, n (%)	Collateral circulation, n (%)
Acute myocardial infarction	32/40 (80.0)	22/40 (55.0)
Old myocardial infarction	12/15 (80.0)	9/15 (60.0)
Unstable angina	24/29 (82.8)	11/29 (37.9)
Stable angina	5/8 (62.5)	5/8 (62.5)

Table 4. Angiographic and procedural characteristics in success group

	Success group (n=73) rate (%)	Success rate (%)	p
Target vessel (n)			
Left anterior descending	36/45	80.0	
Left circumflex artery	8/12	66.7	
Right coronary artery	29/35	82.9	
Attempts of Crosswire (n)			<0.05
First choice	6/7	85.7	
Second choice	67/85	78.8	
Lesion length (mm)	16.4 ± 8.1		NS
Success group	15.4 ± 7.7		
Failure group	19.9 ± 9.2		

NS : not significant

(Table 2).

80.0%, 66.7%, 82.9%,
p=0.045).

Crosswire NT
Crosswire^{NT}
67 78.8%
69.0%(40/58)
56.5%(13/23)

Table 5. Angiographic characteristics and success rate in chronic total occlusion

	Success group, n=18 (%)	Failure group, n=10 (%)	Success rate (%)	p
Clinical diagnosis				0.481
OMI	7 (38.9)	3 (30)	70.0	
UAP	8 (44.4)	4 (40)	66.7	
SAP	3 (16.7)	3 (30)	50.0	
Total	18	10	64.3	
Angiographic features				0.758
LAD	10 (55.6)	5 (50)	66.7	
LCX	2 (11.1)	4 (40)	33.3	
RCA	6 (33.3)	1 (10)	85.7	
Procedural factors				0.038
Abrupt lesion	7 (38.9)	8 (80)	46.7	
Tapered lesion	11 (61.1)	2 (20)	84.6	
Collateral circulation				0.041
Yes	12 (66.7)	10 (100)	54.5	
No	6 (33.3)	0 (0)	100.0	
Grade 0	6 (33.3)	0 (0)	100.0	
Grade 1	2 (11.1)	3 (30)	40.0	
Grade 2	3 (16.7)	3 (30)	50.0	
Grade 3	7 (38.9)	4 (40)	63.6	
Length of occlusion (mm)	17.6 ± 6.6	18.4 ± 6.5		0.954

OMI : old myocardial infarction, UAP : unstable angina pectoris, SAP : stable angina pectoris, LAD : left anterior descending artery, LCX : left circumflex artery, RCA : right coronary artery

tapered lesion
ACC/AHA
C

64.3%(18/28) (choice or floppy) Crosswire^{NT} . Cr -
 56.5%(13/23) osswire^{NT} platinum/iridium alloy coil
 가 tapered lesion shapeable hydrophilic polymer coating

(Table 5)

(Table 5).

고 찰

가 CrossWire^{NT}
 40 cm coating
 Cr - osswireTM

30% .¹⁾ 79.3% ,
 3
 28 18 (64.3%) . , Cross -
 Wire^{NT}

8)14)15)
 가 subtotal stenosis

1

50 79%

요 약

1)2)7)8)17 - 19)

배경 및 목적 :

1977

1)15)

가

가

laser gui - Crosswire^{NT}
 TOTAL trial²⁰⁾
 dewire
 mechanical guidewire

방 법 :

2000 12 2001 7

Crosswire^{NT}

92

68 , 24 ,

hydrophilic polymer coating 58.8±9.7 . 40 ,

가

15 , 29 ,

8

결 과 :

가 10 . 45 , 12 ,
 , 10 35 , abrupt lesion 34 tapered lesion
 58 , 79.3% ,

가 13 ,
 가 1 , “no reflow” 5 .
 64.3%(18/28) ,
 Crosswire^{NT}
 23 13 (56.5%) .

1 가 .
 결 론 :

Crosswire^{NT} .
 중심 단어 : ; .

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