



:
 : 가 68
 가 48 , 가 11 ,
 가 9
 . Kaplan - Meier method , (Fontaine
 stage),
 Cox - proportional hazard model 1 73 (23.8)
 : 68 16 (23.5%) 1 95.4%, 6
 93.2%, 1 80.1%, 2 73.2%, 3 68.9% , 5 62%
 3 (p=0.04), , ,
 6.5
 (p=0.02).

: 가
 angioplasty, PTA (percutaneous transluminal) . 1997
 Bosch (10) 1
 (1). 60 - 96%, 4 41 - 87%
 가
 (2 - 5). 1969 Dotter (6)
 가
 , PTA 가
 (2, 7 - 15). 가
 PTA
 PTA
 (8, 16).

¹
²

1994 8 2002 6
가 68
66, 2
64.3 (46-82)
Fontaine
(Fontaine stage II) 48, (stage III) 11,
(stage IV) 9 (Table 1). 1
5 25
46 (67.6%) 가, 38
(55.9%), 24 (14, 7,
3, 35.3%), 23 (33.8%), 7
(10.3%)
Multistar T.O.P. (Siemens,
Erlangen, Germany) DSA 43
, 24
1
(Radifocus, Terumo, Tokyo, Japan) 43
, 25
3,000 - 5,000 IU
40,000 U
1) 30%
2) 가 3)
, 1 73 23.8 3
, 6, 1, 2, 3, 5 Fontaine stage
(325 mg/) , Ticlid (500
mg, bid) 3
1)
30% 2)
PSVR (peak systolic velocity

ratio) 2.5

68 Kaplan - Meier
(Fontaine stage), 2), , 3) 1)
, Cox -
proportional hazard model
27, 30
가 11
28 (41.2%), 22
가 18
Society of Cardiovascular and
Interventional Radiology (SCVIR) (17)
category I 9 (13.2%), category II 8 (11.8%), catego -
ry III 24 (35.3%), category IV 27 (39.7%) (Table
2). 7.3 cm . 60
, 8
68 86 103
Wallstent (Boston Scientific
Corp. Watertown, Mass., U. S. A.) 85, Hanaro stent
(M.I.Tech, Seoul, Korea) 16, Memotherm (Angiomed,
Kairlsruhe, Germany) 2
2
(66/68, 97.1%)

Table 1. Clinical Stages According to Fontaine Classification

Symptoms	Fontaine stage	No. of patients(%)
Intermittent claudication (able to walk a distance > 200 m)	Stage IIa	27 (39.7%)
	Stage IIb (able to walk a distance < 200 m)	21 (30.9%)
Resting pain	Stage III	11 (16.2%)
Gangrene	Stage IV	9 (13.2%)

Table 2. SCVIR Lesion Classification

Category	Definition
I	Stenoses < 3 cm long that are concentric and noncalcified
II	Stenoses 3 - 5 cm long, or eccentric or calcified stenosis < 3 cm long
III	Stenoses 5 - 10 cm long or chronic occlusions < 5 cm long
IV	Stenoses greater than 10 cm long, or chronic occlusions greater than 5 cm long, extensive bilateral aortoiliac atherosclerotic disease, stenosis in patients with abdominal aortic aneurysm or other lesions requiring aortic or iliac surgery

SCVIR : Society of Cardiovascular and Interventional Radiology (Reference 17)

Kaplan - Meier
 95.4%, 6 93.2%, 1 80.1%, 2 73.2%, 3 68.9%
 , 5 62.0% (Fig. 1, Table 3). (Table 4).
 16 Cox - proportional hazard model

(Fontaine stage)

PTA
 (elastic recoil)
 (7, 9). Bosch (18)
 PTA

Table 3. Primary Cumulative Patency Rate for 68 Patients

Follow-up Period	Patency Rate ± SE
1 month	95.4 ± 0.26
6 months	93.2 ± 0.33
1 year	80.1 ± 0.59
2 years	73.2 ± 0.75
3 years	68.9 ± 0.82
5 years	62.0 ± 0.98

SE : Standard error

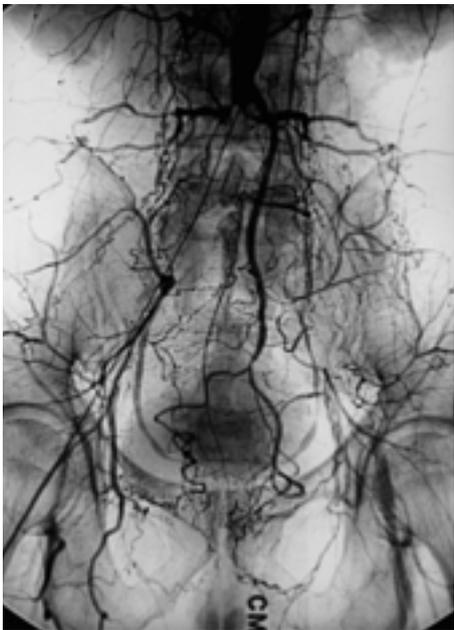
Table 4. Factors Related to Recurrence in Recurred 16 patients

Factors Related to Recurrence			No. of Patients		Cox-proportional hazard model			
			Total (n=68)	Recurred (n=16)				
Fontaine stage	Claudication	Stage IIa	27	4	<i>p</i> =0.38	not significant		
		Stage IIb	21	7				
	Resting pain	Stage III	11	3				
	Gangrene	Stage IV	9	2				
Risk factors	Heart diseases	CHD	14	5	<i>p</i> <0.05	higher 3.2 times		
		Arrhythmia	7	3				
		VHD	3	1				
		Total	24	9				
	Smoking	46	12					
Anatomical factors	Location	CIA	28	3	<i>p</i> =0.42	not significant		
		EIA	22	7				
		Both	18	6				
	Length *(SCVIR)	I	9	3			<i>p</i> =0.83	not significant
		II	8	3				
		III	24	4				
		IV	27	6				
Collaterals	Good	60	14	<i>p</i> =0.81				
	Poor	8	2					

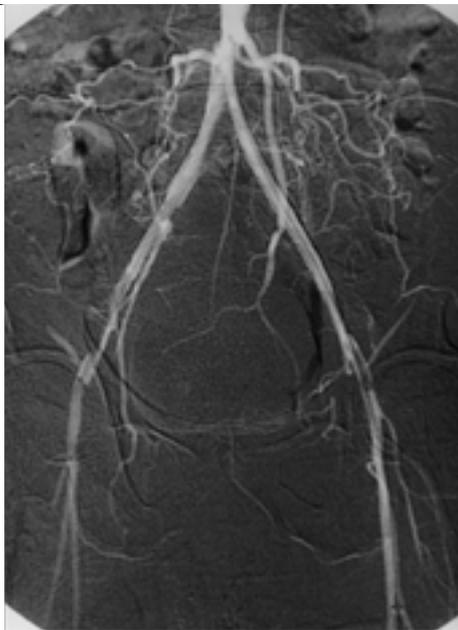
CHD : Coronary heart disease
 VHD : Valvular heart disease
 CIA : Common iliac artery
 EIA : External iliac artery
 * SCVIR lesion classification

(remodeling)가
 (2, 7, 8, 16).
 1987 Sigwart (15)
 Long (13) 1 85.3%, 2 66.2%, 41 - 87%
 3 44.1% , Henry (3) 1 94%, 2 91% 110
 3 86% 4 86% , Sapoval (19) 211 10
 1 73%, 2 51.4% 66%, 10 46%
 38

Rubinstein (20) 25
 , Vorwerk (16) 103
 1 87% 3 81%, 5 54%
 . 1997 Bosch (10)
 1 60 - 96%, 4
 . 2002 Schurmann (21)
 1 92%, 3 76%, 5
 2001 (22)
 1



A



B



C



D

Fig. 1. 64-year-old man with both leg claudication (Fontaine stage IIb), had coronary heart disease and diabetes.

A. Angiogram depicts bilateral complete occlusion of common iliac arteries with rich collaterals.

B. Immediate angiogram obtained after two primary stent implantation via both femoral arteries reveals complete patency of previous occluded segments and opacification of both femoral arteries.

C. Follow-up angiogram demonstrates reocclusion in right common iliac artery stent.

D. After infusion of 150,000 U urokinase, patency is restored in right common iliac artery stent.

90.7%, 2 86.6%, 4 86.6%

가 (scissoring effect) (27)

가 가

(2, 12).

가

Duprat (23)
120%
Gunther (2)

가

Long (24)
Bosch (15)

(3) 가
(8) (,),
(,)
가 가 4 cm

Henry 가
Strecker

(4 cm),

4

(6.5)

Strecker (8)

5 cm (n=51/68) 가
Strecker (8) 4 cm (n=199/289)가

3.2

가

Lugmayr

(25)

(2, 7, 9, 16, 21, 26),

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Metallic Stent Implantation in Patients with Iliac Artery Occlusion: Long-term Patency Rate and Factors Related to Recurrence¹

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Purpose: To determine the long-term patency rate in 68 patients with iliac artery occlusion who underwent metallic stent implantation, and to analyze the factors related to recurrence.

Materials and Methods: Sixty-eight patients with occlusive disease of the iliac artery underwent implantation of a self-expandable metallic stent. The clinical symptoms were intermittent claudication ($n=48$), resting pain ($n=11$), and gangrene ($n=9$). Stent patency was determined by follow-up angiography and color Doppler imaging, and the cumulative patency rate using the Kaplan-Meier method. Cox's proportional hazard model was used to analyse recurrence-related factors involving clinical symptoms (Fontaine stage), risk factors, and anatomical factors such as lesion location, length, and the development of collaterals. The duration of follow-up varied from 1 day to 73 months (mean, 23.8 months).

Results: Arterial occlusion recurred in 16 of 68 patients (23.5%), and the cumulative patency rate was as follows: 95.4% at one month, 93.2% at six months, 80.1% at one year, 73.2% at two years, 68.9% at three years, and 62% at five years. According to a statistical analysis of risk factors, the recurrence ($p=0.04$) than in those without it, but in patients who smoked, hypertension, DM, and previous cerebrovascular disease were not statistically significant. With regard to anatomical factors, the recurrent rate for lesions involving the external iliac artery was 6.5 times higher ($p=0.02$) than for those involving the common iliac artery. Variations in the Fontaine stage were not statistically significant indicators of recurrence.

Conclusion: The recurrence rate after implantation of an iliac artery stent is higher in patients with heart disease than in those without it, and higher for occlusive lesions involving the external iliac artery than for those of the common iliac artery.

Index words : Arteries, iliac
Arteries, obstruction
Arteries, grafts and prosthesis
Percutaneous recanalization

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