

비파열 뇌동맥류의 치료 - 자연경과 및 수술적 치료결과

안재성·권병덕

=Abstract=

Management of Unruptured Intracranial Aneurysms - Natural Course & Surgical Outcomes

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Objectives : The best results of treating intracranial aneurysms can be achieved with treating aneurysm before they rupture. Some recent reports about the risk of the bleeding of the unruptured intracranial aneurysm(UIA) being too low(0.05% per year) compared with 1~2% of the previously reported bleeding probability, casts the question about the need for treatment of the UIAs. The purpose of this report is to review the recent reports about the risk of rupture of the UIAs and to assess the morbidity and mortality associated with surgical treatment for UIAs.

KEY WORDS : Unruptured intracranial aneurysm · Bleeding risk · Surgical treatment.

(morbidity) (mortality)

서 론

(CT), (MRI)

가 . , (natural history)

(risk of surgery)

가 가 .

가 ,

본 론

가

1. 증 상

(symptomatic) (asymptomatic)

가 ,

가 가 TIA, .

가 가 가

가 , paraclinoid aneurysm

가 .

(asymptomatic aneurysm)
(multiple aneurysm) 가

가 , , 20% 가

가 , 가

가 , 가

2. 진단 (CT) (MRI)

가

(CT angiography)
(MR angiography) 가

가 가

(CT) 가

가

가

가

CT angiography MR angiography
, 3mm

method 가

가

(conventional 4 - vessel angiography)

1) 동맥류의 출혈 가능성 (prevalance) 0.5%

1~2% , Asari 5

11 (20.4%) , Heiskanen (fatality) 10%

1.92% , Mount 5

10 11.5%, 가

57% , 가

40% 가

(circle of Willis)

2) 가 10mm , 3) 40~70

, 4) .

: 가

가 (critical size)

가 10mm 가

가 (small aneurysm)

가 (critical size) 4mm, 5mm, 7mm, Wiebers

10mm

가

10mm 가

20 가 가

1% (Table 1). Inagawa 47

unruptured aneurysm 5.2

1

Wiebers

가 intravenous digital subtraction angiogram 가

3. 치료의 결정에 고려해야 할 요소

가

Table 1. Summary of the result of the international study of the unruptured intracranial aneurysms(ISUIA)*

	Group I (No history of SAH)		Group II (History of SAH)	
	< 10 mm	10 mm	< 10 mm	10 mm
Rupture rate (%/y)	0.05	1	0.5	0.65
Predictors of rupture	Size location(post. com**, vertebrobasilar/post cerebral, basilar tip)		Location (basilar tip)	

*See reference 39

**Post com : posterior communicating

group 가 . Table 2 12
 2123 Wiebers (symptomatic aneurysm)
 , ISUIA 가 가
 가 (symptomatic) 가 7~8mm
 가 (multiple aneurysm)
 가 (familial aneurysm)
 가
 5~6mm : multilobe
 가 Wiebers Asari
 . Orz 1248
 38% 가 6mm
 , Yasui 가 5 가 5mm
 25 가 Kassel
 가 71% 10mm
 , 13% 5mm
 Schievink 가 3mm 가 2% 가
 가 가 50
 가 가 34%
 life expectancy
 가 가
 40~60 65
 65
 가 . Yasui
 25 가

Table 2. Comparison of the patients populations with intracranial aneurysms in ISUIA & Asan Medical Center*

Location	AMC series**(n=2123)	
	%/Total	%/Total Ruptured portion(%)
cavernous ICA	11.6	1.1
P com	14.6	18.3 68.6
ICA	36.3	13.1 59.0
A com or ACA	15	33.4 86.7
MCA	41.2	25.2 68.7
basilar tip	6.2	3.4 70
vertbrobasilar/PCA	7.6	4.6 70.4

*ICA : internal carotid artery, P com : Posterior communicating artery, A com : anterior communicating artery, ACA : anterior cerebral artery, MCA : middle cerebral artery, PCA : posterior cerebral artery

**1989. 5 - 2000. 12, including patients with conservative management, transcranial surgery and endovascular surgery

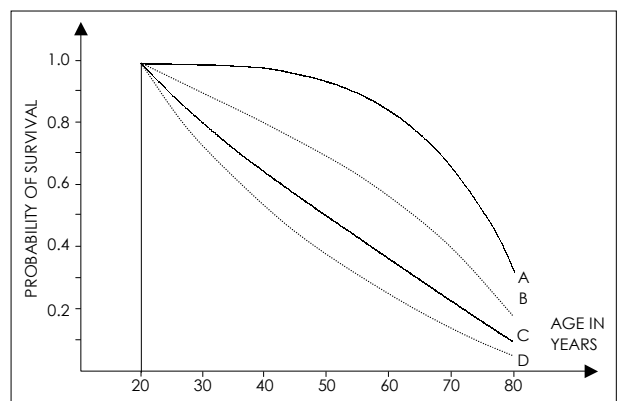


Fig. 1. The probability of expected survival and survival without bleeding in men with aneurysm presenting age : 20 years. A : expected survival in population. B : Bleeding rate per year 1%. C : Bleeding rate per year 2%. D : Bleeding rate per year 3%. (From Eskesen V, Rosenorn J, Schmidt K. The influence of unruptured intracranial aneurysms on life expectancy in relation to their size at the time of detection and to age. British J Neurosurg 2, 379-384, 1988)

가

(Fig. 1).

(temporary clipping)

life expectancy가

가

가

가
. Samson

1998 12
117

. 1989 5

4 3

65

(conservative management)

가

25%

50%

: Juvela

. Wirth 25mm

가
, Solomon 10mm

가

25mm

21% morbidity
25mm

. Rice

2) 수술의 방법 및 위험성

(surgical clipping) clip
(endovascular sur-
gery) gery)

0.6%, 3.6%

가

3%, 11%

9.6%, 37.9%

가

0.8%, 1.9%

가 65

가

(complete occlusion)

가 clipping surgery

(recurrence) 16~32%

가

10~16%, 25%

가

(proximal control)가 가

4. Recommendations

가

가

Table 3

가 10mm

가

, 10mm

incidental aneurysm

daughter sac

, 가

가 65

Table 3. Brief summary of the recommendations for the management of patients with unruptured intracranial aneurysm*

	10 mm	< 10 mm
Symptomatic aneurysms	Treat	Treat
Asymptomatic aneurysm		
• Coexisting or remaining aneurysms with SAH history	Treat	Treat
• Incidental aneurysm	Treat	Observation**

*Recommendations for the management of patients with unruptured intracranial aneurysm-A statement for healthcare professionals from the stroke council of the American heart association. See Ref. 5

**consideration for treatment in young patients and incidental aneurysm with daughter sac formation, unique hemodynamic features or a positive family history for the aneurysmal subarachnoid hemorrhage

Table 4. Clinical and aneurysmal characteristics of the unruptured intracranial aneurysms treated in Asan Medical Center (Period : 1989. 5 - 2000. 12)

Total number of the treated intracranial aneurysm patients	1779	(100 %)
Unruptured aneurysm	203	(11.45%)
Symptomatic aneurysm	104	(5.9 %)
Asymptomatic aneurysm	99	(5.6 %)
Previous SAH	50	
True incidental	49	(2.8 %)
10 mm	17	
< 10 mm	32	(1.8 %)
< 45	9	
45 - 64 yo	21	(1.2 %)
> 65 yo	2	(0.11%)

Table 4

65 가 가

가

결 론

가 50% 가

가

가 (<25mm) 1.9%

0.9%

가

가

138 - 736

388 - 1

: 02) 3010 - 3550,

: 02) 476 - 6738

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