

가

GDC

대상 및 방법

1995 1 1999 12 5

296

(EVD) 6 가

251

97 (39%)

154 (61%), GDC

(Microsurgery or Endovascular treatment), , Hunt and Hess grade⁷⁾, Fisher grade³⁾

Chi - Square test

Student T - test SPSS

10.0 p 0.05

결과

61.5 (19~84) , 59 (Young aged group) 60 (old aged group)

: 1 : 1.9

Pterion (sylvian cistern) (basal cistern) (cisternal drainage)

GDC 2.4 4.6 , GDC

16

Table 1. Topography of ruptured aneurysms after subarachnoid hemorrhage(n=251)

Aneurysm location	No. of aneurysms(%)	
	Microsurgery	GDC emboliaztion
Anterior communicating artery	46(29.8)	21(21.6)
Posterior communicating artery	31(20.1)	19(19.5)
Middle cerebral artery	41(26.6)	18(18.5)
Internal carotid artery	9(5.8)	13(13.4)
Distal ACA*	5(3.2)	4(4.1)
Anterior choroidal artery	3(1.9)	2(2.1)
Basilar tip	5(3.2)	9(9.3)
AICA**	1(0.6)	0(0.0)
PICA***	3(1.9)	4(4.1)
Vertebral artery	1(0.6)	0(0.0)
Multiple aneurysm	9(5.8)	7(7.2)
Total	154(61.4)	97(38.6)

*ACA : anterior cerebral artery
 **AICA : anterior inferior cerebellar artery
 ***PICA : posterior inferior cerebellar artery

Table 2. Relationships between sex and shunt-dependent hydrocephalus

Sex	Microsurgery		GDC* embolization	
	No. of patients	Shunt dependency(%)	No. of patients	Shunt dependency(%)
Female	17/101	16.8	8/64	12.5
Male	8/ 53	15.1	3/33	9.1
Total	25/154	16.2	11/97	11.3

*GDC : Guglielmi detachable coils

(46), (31) , GDC (21), (19) , (18), (13) (Table 1).

25 (16.2%), GDC 11 (11.3%) (p=0.45). 36 47.5 (23~97) (lumbo - peritoneal shunt) 29 , (ventriculo - peritoneal shunt) 7

1. 성별 및 연령과 섀트-의존성 수두증

1.9

Table 3. Relationships between age and shunt-dependent hydrocephalus

Age	Microsurgery		GDC embolization	
	No. of patients	Shunt dependency(%)	No. of patients	Shunt dependency(%)
Young aged group*	6/ 68	9.1	3/45	6.7
Old aged group**	19/ 86	22.1	8/52	15.4
Total	25/154	16.2	11/97	11.3

* : young aged group <60 years-old age

** : old aged group ≥ 60 years-old age

Table 4. Aneurysm locations and shunt-dependent hydrocephalus

Aneurysm location	Shunt dependency(%)	
	Microsurgery	GDC embolization
Anterior communicating artery	13/ 46(28.3)	4/21(19.0)
Posterior communicating artery	4/ 31(12.9)	2/19(10.5)
Middle cerebral artery	2/ 41(4.9)	1/18(5.5)
Internal carotid artery	0/ 9(0.0)	0/13(0.0)
Distal ACA*	2/ 5(40.0)	0/ 4(0.0)
Anterior choroidal artery	1/ 3(33.3)	1/ 2(50.0)
Basilar tip	1/ 5(20.0)	2/ 9(22.2)
AICA**	1/ 1(100.0)	0/ 0(0.0)
PICA***	1/ 3(33.3)	0/ 4(0.0)
Vertebral artery	0/ 1(0.0)	0/ 0(0.0)
Multiple aneurysm	0/ 9(0.0)	1/ 7(14.3)
Total	25/154(16.2)	11/97(11.3)

*ACA : anterior cerebral artery

**AICA : anterior inferior cerebellar artery

***PICA : posterior inferior cerebellar artery

(p=0.65) (Table 2).

GDC (Table 3), (p=0.35).

2. 동맥류 위치와 섀트-의존성 수두증

GDC 36, 17, 6 (63.8%), 3 (Table 4), 가

(p=0.001).

3. Hunt & Hess Grade와 섀트-의존성 수두증

Hunt and Hess grade 가 30.9%(42 13) - 가 가 가 가 가 가

Table 5. Clinical grade(H&H grade) and shunt-dependent hydrocephalus

Hunt and Hess grade	Microsurgery		GDC* embolization	
	No. of patients	Shunt dependency(%)	No. of patients	Shunt dependency(%)
0	0/ 4	0.0	0/ 5	0.0
I	0/ 11	0.0	0/ 2	0.0
II	5/ 68	7.4	1/37	2.7
III	13/ 42	30.9	7/41	17.1
IV	7/ 29	24.1	3/12	25.0
Total	25/154	16.2	11/97	11.3

Table 6. The amount of subarachnoid blood(Fisher grade) and shunt-dependent hydrocephalus

Fisher grade	Microsurgery		GDC* embolization	
	No. of patients	Shunt dependency(%)	No. of patients	Shunt dependency(%)
I	0/ 27	0.0	0/ 7	0.0
II	4/ 40	10.0	1/34	2.9
III	18/ 70	25.7	8/47	17.0
IV	3/ 17	17.6	2/ 9	22.2
Total	25/154	16.2	11/97	11.3

(Table 5),

(p=0.0001).

4. Fisher Grade와 섀트-의존성 수두증

Fisher grade 가 25.7% (70 18) - 가 가 Fisher grade 가 (Table 6), (p=0.003).

고 찰

(CSF shunting)

Kosteljanetz ¹⁰⁾

가 90%

, Fuhrmeister ⁴⁾

(CSF outflow resistance)

3

가

가 가

가 가

GDC

가

40~50

가

GDC

가

⁶⁾

(23.2%)

, Gruber ⁶⁾

GDC

(17.7%)

(blockage of arachnoid granu-

²⁾¹¹⁾

lation)

Graff - Radford ⁵⁾

가

가

가

가

가 GDC

⁶⁾,

19.5%(138 27),

7.9%(113 9)

가

(fibrin clots)

가

Torner ¹⁵⁾

가

²⁾ GDC

(intravenous heparin)

가

가

가

가

⁶⁾¹³⁾¹⁴⁾¹⁷⁾,

GDC

⁶⁾,

Study⁹⁾

International Cooperative

(Hunt & Hess grade)

(Fisher grade)

(Grade)

가 가

가

가

²⁾⁸⁾¹²⁾

(repeat aneurysmal bleeding)

(antifibrinolytic agent)

가

¹⁶⁾,

결 론

Park¹²⁾

EACA(Epsilon - amino - caproic acid)

3

(H&H grade)

가

Auer ¹⁾ Marky

(Fisher grade)

가

(Microsurgery vs
Endovascular treatment)

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