

외상성 지주막하 출혈의 예후와 임상적 의의

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= Abstract =

Prognosis and Clinical Significance of Traumatic Subarachnoid Hemorrhage

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Objectives : Head injury is one of the common causes of death in the industrialized countries, and it is a common cause of subarachnoid hemorrhage. Recently, traumatic subarachnoid hemorrhage(TSAH) has been considered as a major prognostic factor. Some suggested that a certain vasodilating agent may be effective to treat or prevent the secondary brain injury due to vasospasm from TSAH. The role of TSAH is not yet fully solved. The prognosis and clinical significance of the TSAH was evaluated.

Methods : A retrospective study was performed. A total of 573 consecutive patients with head injury admitted to our institute from January 1996 to December 1997 were examined with respect to outcome and clinical features. In all patients, computerized tomographic scanning was done within 2 days after the injury.

Results : TSAH was found in 68 patients(11.9%). The outcome at discharge of the patients without TSAH was favorable(good recovery and moderate disability) in 84.8%, unfavorable(severe disability and vegetative state) in 8.6%, and the mortality rate 6.7%. However, the outcome was favorable in 51.5%, unfavorable in 20.6%, and the mortality rate 27.9% in patients with TSAH. Although the outcome of the patients with thick TSAH was worse than that of the patients with scanty TSAH, the difference was not statistically significant. The difference of the outcome in patients with TSAH according to the location also lacked statistical significance. TSAH was more common in patients with age of 40 years or more, and patients with low Glasgow coma scores. Patients with TSAH had abnormal pupillary responses, diffuse axonal injuries, intubations and operative interventions more frequently than patients without TSAH.

Conclusion : These results strongly suggest that the TSAH per se did not worsen the prognosis. However, it represented the injury to be more severe.

KEY WORDS : Traumatic subarachnoid hemorrhage · Clinical significance · Prognosis, Computed tomography · Head injury.

서 론

10)

1989

27)

1859

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23)

가

3)

1950

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. 1980

5)7)20)25)40)46)

1990 가 13)16)17)43)가

1996 1 1997 12 2

(computerized tomography ; CT)

11.9% , CT (magnetic resonance imaging ; MRI)

CT

(GCS)⁴⁴⁾

가

5) Fisher 9) 가

Greene 16) CT Greene 16) 가 (5mm)

(scanty SAH without mass lesions),

2 가 (>5mm) (thick SAH without mass lesions),

3 가 (scanty SAH with mass lesions).

4 가 (thick SAH

with mass lesions)

1, 3 ,

2, 4

CT MRI 가

6

(Glasgow outcome score ; GOS)²¹⁾ . GOS

(favorable outcome ; FO),

(unfavorable outcome ; UO) ,

chi - square , p<0.05

결 과

1. 외상성 지주막하 출혈의 예후

505

376 (74.5%), 52 (10.3%), 24 (4.8%), 19 (3.8%), 34 (6.7%)

가 84.8% (Table 1).

68 21 (30.9%), 14 (20.6%), 9 (13.2%), 5 (7.4%), 19 (27.9%) 가 51.5% (p<0.001).

2. 성별과 연령별 분포

20 가 176 (30.7%) 가

61 99 (17.3%) 가

41 60 가 28 (41.2%) 가 , 20 가 11 (16.2%) 가 (Table 2).

(p<0.001).

20 가 6.3%, 21 40 가 8.8% , 41 60 20.1%, 60 15.2% 가

Table 1. Outcome at discharge

GOS	TSAH(-)	TSAH(+)	Total(%)
Good recovery	376(74.5)	21(30.9)	397(69.3)
Moderate disability	52(10.3)	14(20.6)	66(11.5)
Severe disability	24(4.8)	9(13.2)	33(5.8)
Vegetative state	19(3.8)	5(7.4)	24(4.2)
Death	34(6.7)	19(27.9)	53(9.2)
Total	505(100)	68(100)	573(100)

GOS = Glasgow outcome scale
TSAH = traumatic subarachnoid hemorrhage

Table 2. Age distribution

Age(yrs)	TSAH(-)	TSAH(+)	Total(%)
- 20	165(32.7)	11(16.2)	176(30.7)
21 - 40	145(28.7)	14(20.6)	159(27.7)
41 - 60	111(22.0)	28(41.2)	139(24.3)
60 <	84(16.6)	15(22.1)	99(17.3)
Total	505(100)	68(100)	573(100)

TSAH=traumatic subarachnoid hemorrhage

Table 3. Glasgow coma score on admission

GCS	TSAH(-)	TSAH(+)	Total(%)
3 - 5	40(7.9)	14(20.6)	54(9.4)
6 - 8	47(9.3)	24(35.3)	71(12.4)
9 - 12	49(9.7)	9(13.2)	58(10.1)
13 - 15	369(73.1)	21(30.9)	390(68.1)
Total	505(100)	68(100)	573(100)

GCS = Glasgow coma score
TSAH = traumatic subarachnoid hemorrhage

(373 : 132)

(50 : 18), 2.8 : 1

(Table 2).

3. 입원당시의 의식수준별 분포

367 (73.4%)가 GCS 13 15 ,
38 (55.9%)가 GCS 8

(Table 3).

(p<0.001). GCS

3 8 30.4%, 9 12 15.5%, 13 15
5.4%

4. 외상의 원인별 분포

가 37.9%
(217) , (132 ,
23.0%), (107 , 18.7%) (Table
4).

9.2%, 6.5%
18.9% 12.5%

(p<0.03).

5. 동공상태

11.7%
33.8%

(Table

Table 4. Causes of head injury

Causes	TSAH(-)	TSAH(+)	Total(%)
Pass.TA	197(39.0)	20(29.4)	217(37.9)
Ped.TA	107(21.2)	25(36.8)	132(23.0)
Slip/Fall	100(19.8)	7(10.3)	107(18.7)
Bicycle	49(9.7)	7(10.3)	56(9.8)
Others	52(10.3)	9(13.2)	61(10.6)
Total	505(100)	68(100)	573(100)

Pass.TA = passenger's traffic accident ; Ped.TA = pedestrian traffic accident ; TSAH = traumatic subarachnoid hemorrhage

Table 5. Pupil on admission

Pupil	TSAH(-)	TSAH(+)	Total(%)
Normal	446(85.3)	45(66.2)	491(85.7)
Abnormal	59(14.7)	23(33.8)	82(14.3)
Total	505(100)	68(100)	573(100)

GCS = Glasgow coma score
TSAH = traumatic subarachnoid hemorrhage

Table 6. Frequency of diffuse axonal injury

DAI	TSAH(-)	TSAH(+)	Total(%)
Absent	412(81.6)	32(47.1)	444(77.5)
Present	93(18.4)	36(52.9)	129(22.5)
Total	505(100)	68(100)	573(100)

DAI = diffuse axonal injury
TSAH = traumatic subarachnoid hemorrhage

Table 7. Method of treatment and frequency of intubation

Treatment	TSAH(-)	TSAH(+)	Total(%)
Methods			
Conservative	435(86.1)	49(72.1)	484(84.5)
Operative	70(13.9)	19(27.9)	89(15.5)
Intubation			
No	431(85.3)	32(47.1)	463(80.8)
Yes	74(14.7)	36(52.9)	110(19.2)
Total	505(100)	68(100)	573(100)

GCS = Glasgow coma score
TSAH = traumatic subarachnoid hemorrhage

5). (p<0.001).
9.2%

28.0%

6. 미만성 축삭손상 동반율

18.4% 52.9%

(Table 6),

(p<0.001).

7. 치료방법의 차이

14.7% 53%

Table 8. Outcome of the patients with TSAH

Variables	FO	UO	Total(%)
CT Grade			
1	16	10	26(38.2)
2	7	11	18(26.5)
3	8	6	14(20.6)
4	4	6	10(14.7)
Location			
Basal	10	6	13(23.5)
Convexity	22	14	35(52.9)
Mixed	3	4	7(10.3)
Other	6	3	9(13.2)

TSAH = traumatic subarachnoid hemorrhage ; FO = favorable outcome ; UO = unfavorable outcome ; CT = computerized tomography

(Table 7).
(p<0.001).
13.9%
27.9%
(p<0.005).

8. 외상성 지주막하 출혈의 양과 위치에 따른 비교

68
가
가 (Table 8). 1 3
가 , 2 4 가
(p>0.05).
가 가 (Table 8).

고 찰

573 68
11.9% 14)
5.1% 26)
10.8%
De Vill -
asante 6) 100 2% 1)18)32)42)48)
, Demircivi 5) 2,056 89
(4.3%)
Jeret 22) 2.8%
Taneda 43)

23.4%²⁵⁾ 38.6%⁷⁾ 가 , Martin ³⁴⁾
25 40% . Levi ³¹⁾
CT
(corticomedullary and nuclear - medullary junction),
20% 가
GCS 3 8 31.1%, 9 12 15.5%,
13 15 5.4%
Kakariekka²³⁾가
8 59%
CT
CT 가
가 84.8%,
8.6%, 6.7%
가 51.5%, 20.6%,
27.9% 가
가
20)40)
가 5)13)16)17)43)46)
1995 가
가
가
1) 가
2) 가
가 가
CT가
1)18)32)42)48)
4)29)33)34)36)
47)
, Taneda ⁴³⁾

24% , Gaetani¹³⁾ (basal cistern) 가 . Fisher (convexity) . 40 , 가 . Vollmer⁴⁶⁾ (traumatic coma data bank) 55 , 56 61.3%가 .

가¹³⁾ 가⁴⁶⁾ . 10) . Freytag¹⁰⁾ , Gaetani¹³⁾ Kobay - 1,367 12 (0.9%) , , .ashi²⁵⁾ Greene¹⁶⁾ . of Willis) (circle 가 . 11) . Fukuda¹¹⁾ 가 . Greene¹⁷⁾ 가 . 가 15)39) . Fukuda¹¹⁾ 가 . 85% Eisenburg⁷⁾ 가 . 가 75% 가 () 가 . 20mmHg . 10% 가 가 가 . (twin peak) 가 . 30) . (vascular territory) 가 . Greene . CT 가 . St -¹⁷⁾ 가 . eiger⁴¹⁾ (gliding contusion) (subcri - tical) , 1.5 . 가 . 가 , 가 , 가 , 가 .

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