

자발성 뇌내혈종의 음압배액술

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= Abstract =

Negative Pressure Aspiration of Spontaneous Intracerebral Hematoma

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Objectives : The less invasive stereotactic surgery of hypertensive intracerebral hematoma has been preferred. Many techniques were developed to facilitate aspiration of a dense blood clot in acute stage. Authors describe a method for evacuation of putaminal hematoma via computerized tomography(CT) - aided free - hand stereotactic infusion of urokinase and frequent negative pressure aspiration.

Patients and Methods : A total of ten patients with spontaneous putaminal hematoma underwent surgery with negative pressure aspiration in the three - year period. All procedures were performed within 12 hours of insult. A silicone ventricular catheter was inserted into the center of hematoma through a burr hole at the Kocher's point under local anesthesia. In a typical case of putaminal hematoma, the trajectory of catheter was pointed the center of hematoma parallel to sagittal plane vertically and the external auditory meatus posteriorly. Immediately after the first trial of hematoma aspiration low - dose urokinase solution(2,000IU/5ml saline) was administrated through the catheter and drain was clipped for 30 minutes. Subsequently, the partially liquified hematoma was manually aspirated using a 10ml syringe with a negative pressure of less than 2 to 3ml. The procedure was carefully repeated every 1 hour until the hematoma was near totally evacuated.

Results : The patients population consisted composed of 4 men and 6 women with a mean age of 61.6 years. All had major neurological deficits preoperatively. The mean hematoma volume was 44.3 ml and hematoma was drained for 20 to 48 hours. No complications such as rebleeding, meningitis, or malplaced catheter were noted. Outcome was moderately disabled in four patients and good recovery in three patients.

Conclusion : Although the frequent negative pressure aspiration and low - dose urokinase infusion has the disadvantage of possibility of rebleeding and infection, it is considered to be an effective method because it allows a simple, safe, and complete removal of hematoma.

KEY WORDS : Intracerebral hematoma · Stereotactic aspiration · Urokinase irrigation · Outcome.

서 론

2)3)18)21)

가

가

zocine hydaralazine

(orbitomeatal plane)

10mm

가

5cm

(internal capsule),

1cm

(foramen of Monro)

(genu por-

tion)

Kocher's

(

1cm

)

가

대상 및 방법

1. 연구대상 및 방법 1997

1cm

10cc

(Fig. 1).

1

가 10

5ml

2,000

Glasgow outcome scale(GOS)

30

10ml

2 3ml

1

5

2. 시술방법

50ml

90%

가

10

6

가

diazepam, penta-

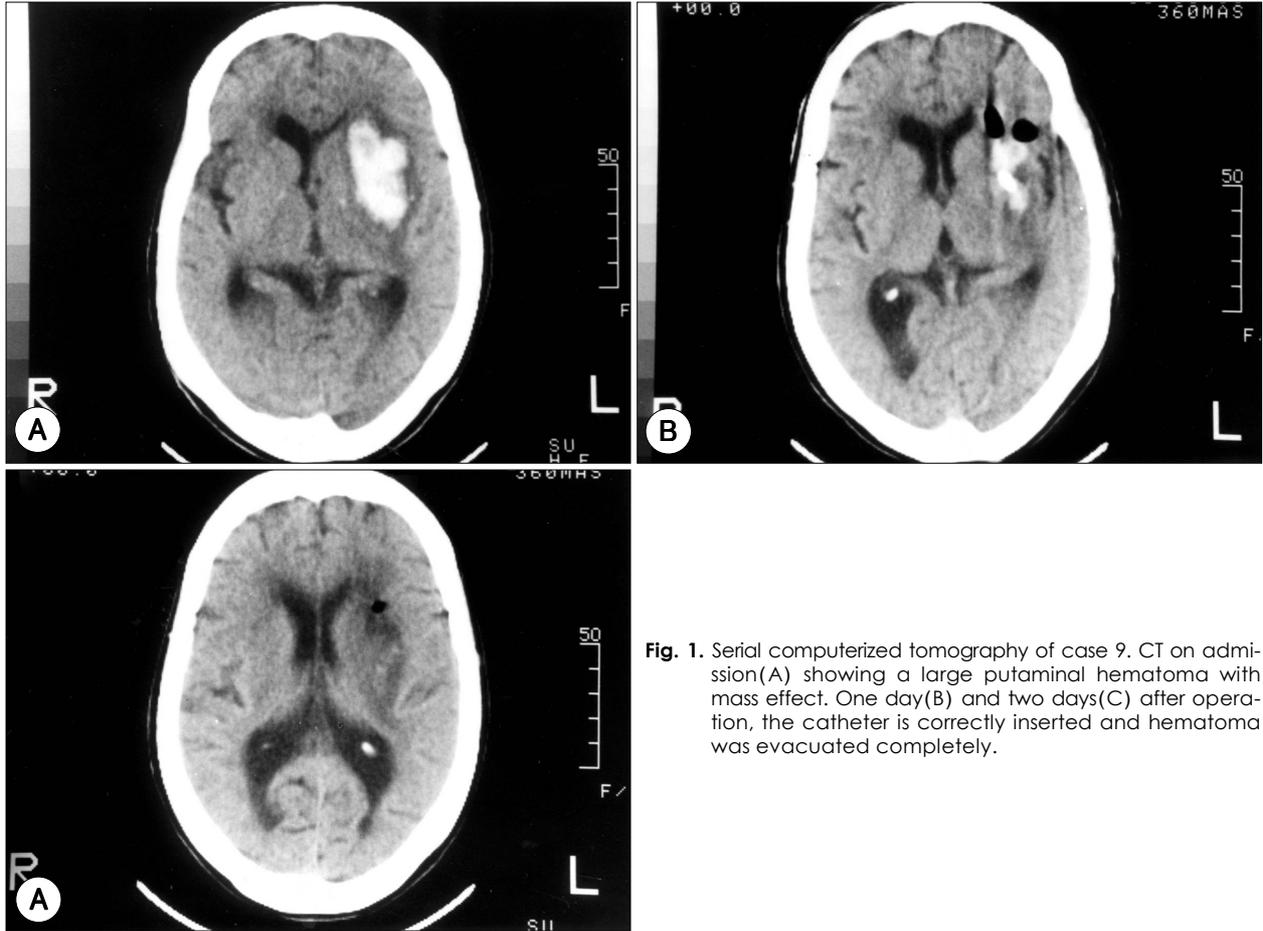


Fig. 1. Serial computerized tomography of case 9. CT on admission(A) showing a large putaminal hematoma with mass effect. One day(B) and two days(C) after operation, the catheter is correctly inserted and hematoma was evacuated completely.

결 과

10 가 4 , 가 6
 45 74 61.6
 35 55ml
 44.3ml 1 ,
 5 가 4
 (Table 1).
 3
 48 2
 6 12 9
 10,000 24,000
 19,400 9.7
 20
 48 36.9 2 2

Table 1. Clinical characteristics in cases of spontaneous putaminal hemorrhage

Case	Age (yrs)	Hematoma volume (ml)	Dose of urokinase (IU)	Drainage duration (hrs)	GOS Score
1	56	45	2,000 × 10(*)	48	MD
2	60	44	2,000 × 12	44	GR
3	45	35	2,000 × 10	36	SD
4	65	38	2,000 × 11	38	SD
5	62	55	2,000 × 12	40	SD
6	62	40	2,000 × 9	37	MD
7	59	47	2,000 × 10	40	MD
8	68	52	2,000 × 12	42	MD
9	74	39	2,000 × 5	20	GR
10	65	48	2,000 × 6	24	GR

The asterisk(*) indicate the number of irrigation.
 Abbreviations : GOS= Glasgow outcome scale, GR= good recovery, MD=moderately disabled, SD= severely disabled

6 7 가 (Ta- ble 1).

고 찰

200 400mmHg, Kandel 150mmHg Matsumoto 10ml Hondo⁹⁾¹²⁾ 2ml

50 200mmHg 10ml 1 3ml
8)9)11)12)17)19)20)22)23)26)29)36)
3,000 20,000 6,000
4 8 3 6

2)3)5)6)8-11)13)28)35)

000 17)20) 27)33) 가 5ml 6,
000 4 3,000 6,

가 3)14)17)18)21) Hondo 9)12) 가 6

3

(blood - brain barrier)

1-6), 16)19) 가

15)18)

가

Niizuma 18)21)

가

Dachling⁵⁾⁸⁾

가

1)2)7)10)28)35)

Matsumoto 23)28)

3

(caudate nucleus)

가

가

U-

24)29) loop²⁰⁾²⁴⁾²⁵⁾³⁰⁾

CT interface

9)12)

(CT marking)

3-6)11)14)17)20)23)25)28)30)

4)6)8)9)11)12)17)20)22)26)32)

(natural drain)

가

(insular co-

rtex)

가
가
가

가
가
가

Kandel

0 13.8%
13)16)23)28)
6
13)16)

21)25)
가
16)19)

가
16)19)22)26)

Kathryn 12)15)
가
5
가

가

결 론

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