
症 例

Bilateral Hypertensive Intracerebral Hemorrhage

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It is well known that the most frequent cause of death in Japan is hypertensive intracerebral hemorrhage. This disease has a high mortality following the initial attack, and that may be one of the reasons why there has been little literature on its recurrence.

The purpose of this report is to describe the case of a patient who had bilateral hypertensive intracerebral hemorrhage and to review our own cases and the literature on the clinical features of recurrent hypertensive intracerebral hemorrhage. Moreover, the rapid healing process in the left basal ganglion as a result of surgery after the initial attack will be discussed.

Case Report

A 59-year-old man was admitted with disturbance of consciousness and a flaccid hemiplegia on the right side. He had a long history of hypertension without treatment. On Sept. 7, 1973, in the early morning, the patient complained of a sudden onset of paraesthesias of his right hand followed by right hemiparesis half an hour later. He could not express himself verbally although he was alert. Vomiting also occurred frequently. On the next day his level of consciousness began to deteriorate to somnolence. The patient was transferred to our clinic because of progressive impairment of consciousness and worsening of progression of right hemiplegia.

Examination : The neurologic examination on admission showed that he was stuporous. Right hemiplegia and right lower facial paresis were noted. The right pupil was larger than the left but reacted as promptly to light as the left. There was also a conjugate deviation towards the right. Increased deep tendon reflexes with the BABINSKI sign were present on the right side. His temperature was 98.6°F., his pulse 66, and his respiration 28. The blood pressure was 160 systolic, 80 diastolic. Lumbar puncture revealed an opening pressure of 400mm of water. The fluid was xanthochromic in nature.

Echoencephalography revealed a hematoma-echo on the left side although the shift of

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midline-echo was not clearly detected. The left common carotid angiogram showed that the middle cerebral as well as lenticulostriate arteries were laterally displaced although the anterior cerebral artery was on the midline, the angiographic sylvian point was in the normal position on the A-P view, the anterior cerebral artery was slightly stretched, and the opercular branches of the middle cerebral artery were separated from each other in the anterior portion of the sylvian triangle on the lateral view (Figs. 1 & 2).

The venous phase was not obtained because circulation time was markedly delayed due to increased intracranial pressure. These angiographic findings suggested a mass located in the left intrasylvian region with probable rupture into the lateral ventricles. This was diagnosed as hypertensive intracerebral hemorrhage in the left basal ganglion.

Operation : A left frontotemporal craniotomy was performed on the 3rd day after the incident and about 80 ml of hematoma was evacuated through a sylvian fissure approach.

Postoperative Course : On the 13th day after operation the patient showed a sudden fall of blood pressure followed by tarry feces. Fiberscopic observation revealed multiple small petechiae in the stomach and a larger ulcer in the duodenum. Conservative treatment was instituted under the diagnosis of gastroduodenal hemorrhage of central origin. The patient had been somnolent on the 17th day, but he finally became alert on the 27th day

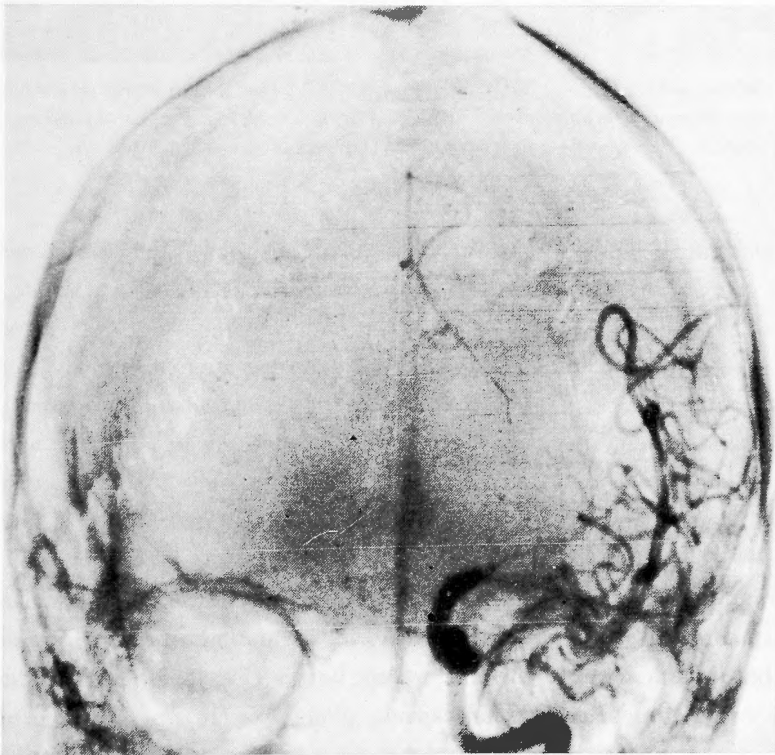


Fig. 1. A left carotid angiogram obtained before surgery for the first stroke. A-P view of the arterial phase showing lateral displacement of the middle cerebral as well as lenticulostriate arteries without shift of the anterior cerebral artery or the angiographic sylvian point of the middle cerebral artery.

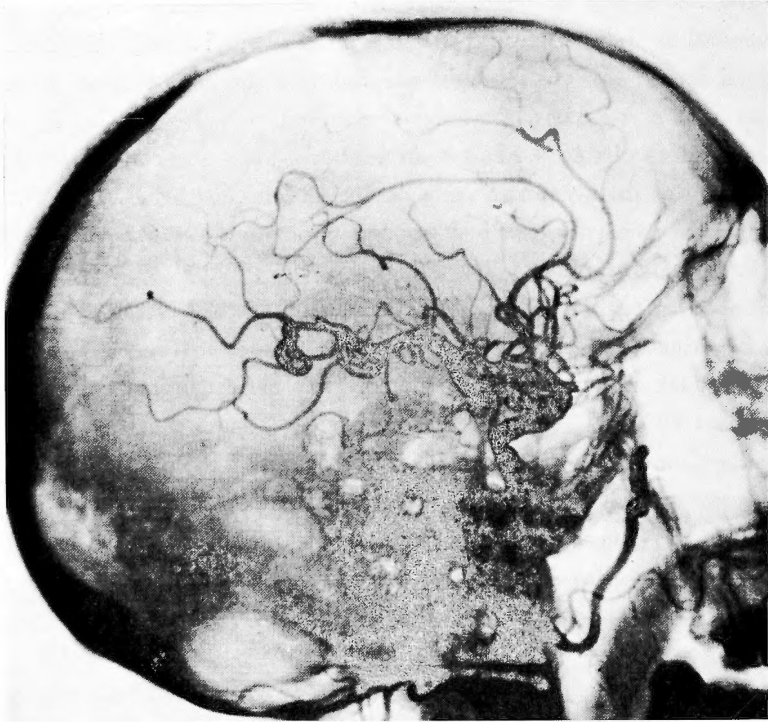


Fig. 2. Same case as in Fig. 1. Lateral view of the arterial phase showing stretching of the anterior cerebral artery and separation of the opercular branches of the middle cerebral artery in the anterior portion of the sylvian triangle.

after operation. Since then he had been able to ingest orally and his general condition became better every day. Conversation using simple words also became possible. Therapeutic exercise for the right complete hemiplegia which had remained unchanged postoperatively was begun on the 39th day after operation. Daily exercise was continuously performed but he unfortunately suffered from the second attack during his exercise on the 110th postoperative day. The neurologic examination at that time showed that he was somnolent with hemiplegia on the left side and the residual hemiplegia on the right side. Shortly afterward, his level of consciousness and vital signs rapidly deteriorated and he finally died 9 hours after the second attack.

Autopsy Findings : At autopsy the brain was diffusely swollen, particularly the right cerebral hemisphere, with evidence of transtentorial herniation on the right side. Coronal section of the brain at the level of the mammillary bodies (Fig. 3) showed a large haematoma occupying the caudate nucleus, internal capsule, globus pallidus, putamen, external capsule, claustrum, and a part of the thalamus on the right side. The dilated ventricular system was found to be filled with clotted blood. The third ventricle was markedly shifted toward the opposite side. Furthermore, coronal section at the level of the optic chiasm (Fig. 4) revealed softening of a slit-like area in the left lentiform nucleus which lapsed about three and a half

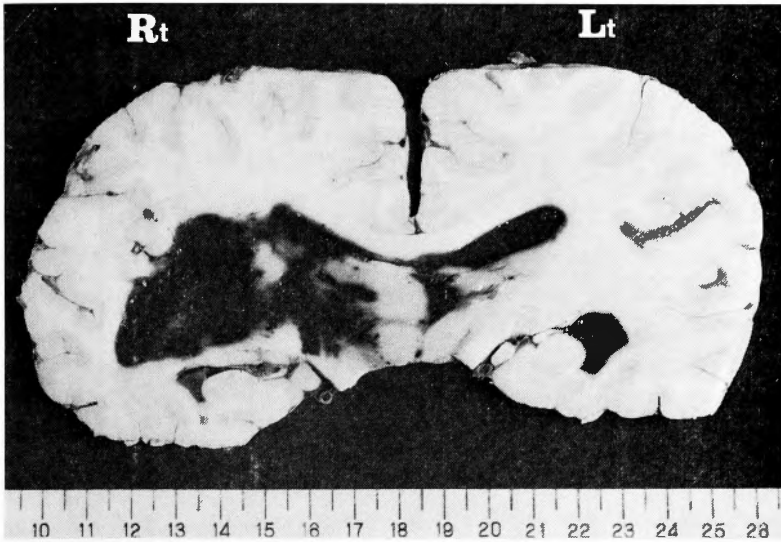


Fig. 3. Coronal section of the brain at the level of the mammillary bodies showing swelling of the right cerebral hemisphere and a large haematoma involving the basal ganglia and a part of the thalamus on the right side extending into the lateral and the third ventricles.



Fig. 4. Coronal section through the optic chiasm showing a slit-like softening in the left lentiform nucleus which lapsed about three and a half months after surgery of the first stroke (arrow).

months after surgery for the first stroke.

Discussion

We have described a case with the recurrence of hypertensive intracerebral hemorrhage which occurred in the contralateral basal ganglion about three and a half months after the

TABLE 1. Cases with recurrent hypertensive intracerebral haemorrhage

Op. No.	Age & Sex	Days from 1st to 2nd Attacks	State of Consciousness	Cardinal Neurologic Findings	Clinical Course	Haematoma Volume	Side of Haemorrhage
90	54 M	1st attack	stupor	Rt. hemiparesis Rt. Babinski	4 days after operation : alert	30ml	ipsilateral (Lt.)
		2nd attack	somnolence	lumbar puncture : 440mm of water bloody	postop : consciousness became worse died 29 days after the 2nd onset GI bleeding	30ml	
111	49 F	1st attack	semicoma	Rt. hemiplegia Rt. Babinski	7 days after operation : alert GI bleeding	170ml	ipsilateral (Lt.)
		2nd attack	coma	anisocoria : Lt>Rt pinpoint pupil decerebrate rigidity	remained comatose died 6 days after the 2nd onset		
142	59 M	1st attack	stupor	Rt. hemiplegia Rt. Babinski anisocoria : Rt>Lt	27 days after operation : alert GI bleeding	80ml	contralateral (Lt. Rt.)
		2nd attack	somnolence	Lt. hemiplegia decerebrate rigidity	died 9 hours after the 2nd onset		
145	63 M	1st attack	somnolence	Rt. hemiparesis Rt. Babinski convulsion	4 days after operation : alert	30ml	ipsilateral (Lt.)
		2nd attack	coma	anisocoria convulsion	died 2 days after the 2nd onset		
165	44 M	1st attack	semicoma	Lt. hemiplegia anisocoria : Rt.>Lt. decerebrate rigidity	6 days after operation : alert	130ml	ipsilateral (Rt.)
		2nd attack	stupor	anisocoria	operated on the 2nd day from the onset died 5 days after the 2nd attack	60ml	

initial attack.

It is generally thought that frequency of recurrence of cerebral apoplexy is 21 to 23 percent¹⁾²⁾, and that of hypertensive intracerebral hemorrhage 16 percent³⁾. Moreover, the patients suffering from recurring hypertensive intracerebral hemorrhage have a very poor prognosis⁴⁾.

We have had five patients with such recurrences. Of these two had the second evacuation of haematomas and the rest had only a single operation because of poor condition after the 2nd stroke. All of these patients died shortly after the 2nd stroke except for one who survived a month. The clinical course after the second attack showed rapid deterioration of consciousness or no improvement from coma. The sides of recurrence were as follows : Four cases were in the ipsilateral and only one in the contralateral areas. The length of time from the first to the second attacks had a tendency to be short in the ipsilateral and to be long in the contralateral recurrences (Table 1).

The same result was obtained from the literature. Ipsilateral recurrence was reported to have occurred after only seven days, but the contralateral seven months after the initial surgery⁵⁾.

It is interesting that in this case the haematoma cavity resulting from the initial stroke had almost completely healed about three and a half months after surgery as shown in Fig. 4. This rapid healing process is worth noticing in comparison with a report by SPATZ in which it took more than six months for the haematoma cavity to heal and form a scar⁶⁾. OANA had histopathologically studied the healing process, consisting of fat corpuscle cells, glial cells, newly-formed blood vessels, and connective and glial fibers, in order to certify the validity of surgical treatment and concluded that the process begins earlier in operated cases than in non-operated cases. The former require only one-half of the length of time the latter require⁷⁾.

This fact strongly suggests that surgery plays a constructive role in the healing process of a haematoma cavity.

References

- 1) Moriguchi M. : The statistical observation of cerebral haemorrhage and cerebral infarction. *Tohoku Medical Journal* **30** : 387-397, 1942.
- 2) Satsusa K, Okinaka S, Satsusa R. Talking about the clinic of apoplexy In the conference of internal medicine. *Japan Medical Journal* **1629** : 3-27, 1955.
- 3) Okinaka S, Tsukagoshi H, Kameyama M. : The prognosis of cerebral haemorrhage. *Psychiatria et Neurologia Japonica* **60** : 1270-1289, 1958.
- 4) Felger GP, Reinsner H, Scherzer E. : Das weitere Schicksal von 1,000 zerebralen Insulten. *Wien Klin Wschr* **73** : 397-402, 1961.
- 5) Kowata M, Matsuoka S, Ito Z, et al. : Operative experiences of the apoplectic cases with recurrence. *J Adult Diseases* **2** : 241-243, 1972.
- 6) Spatz H. : Pathologisch Anatomie der Kleislaufstörungen der Gehirns. *Z Neurol & Psychiat* **167** : 301-351, 1939.
- 7) Oana K. : Clinicopathological studies on the surgical treatment of hypertensive intracerebral haemorrhage. *Arch Jap Chirurg* **37** : 161-176, 1968.

和文抄録

両側性に発生した高血圧性脳出血

—症例報告—

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患者は59才男子であり, 初回発作より3日目に血腫剔除術を施行され, 約80mlの血腫が左大脳半球基底核部より剔除された。しかし本手術より3.5カ月後に, 右片麻痺に対する機能訓練中に, 患者は第2回目の脳血管発作に襲われた。患者の状態は極度に悪く, 手術する余裕もなく死亡した。剖検を施行すると, 初回発作の左基底核部は極めて良く修復され, 小さな間隙状の軟化巣を残すのみとなっていたが, 対側の基底核部

には, 大血腫が占居し, 間脳部まで伸展していた。本症例は, 手術によって, 短期間の内に, 左基底核部の血腫巣が修復された興味ある症例であり, 本症に対する血腫剔除術の有効性を示唆するものである。なお, 当教室でも入院中に経験した脳出血の再発例についても調査し, 同側性出血, 対側性出血の臨床上的特徴にも言及した。