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Case report

Simultaneous bilateral hypertensive basal ganglia hemorrhage

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ABSTRACT

Context: Hypertension is the single most important risk factor for intracerebral hemorrhage (ICH) and often leads to solitary hematoma. Multiple spontaneous simultaneous ICH is not common, and bilateral hemorrhages occurred in symmetrical basal ganglia is extremely rare. Most reported cases accepted conservative treatment and suffered extremely poor outcome.
Case report: A 57-year-old male became unconscious when having supper and was transported to our emergency room immediately. Non-contract CT brain scanning showed simultaneous bilateral hypertensive basal ganglia hemorrhage; he was treated by stereotactic aspiration and thrombolysis for both sides, with subsequent thrombolysis and clot aspiration through hematoma-indwelling catheter. The hematomas were almost totally cleared within a week. His condition improved gradually. Nearly 10 months after onset, he could chow and swallow food, controlling bowels and bladder all by himself, but need some help when feeding and using toilet.
Conclusion: Simultaneous bilateral hypertensive basal ganglia hemorrhage is a devastating cerebrovascular disease with significant high morbidity and mortality. Stereotactic aspiration and thrombolysis is a safe and effective way to clear hematomas within short time, thus reducing the neurological impairment from hematoma mass effect and secondary brain injury, improving prognosis.

1. Introduction

Intracerebral hemorrhage (ICH) accounts for 10–20% of strokes. It is the leading cause of all strokes, second only to cerebral infarction [1]. Hypertension is the single most important risk factor for ICH, often leading to solitary hematoma [2,3]. Hemorrhage in basal ganglia or thalamus due to hypertension accounts for 35–44% of cases of hypertensive ICH. The occurrence of multiple simultaneous ICH has been observed in 2% of all hemorrhagic strokes. However, multiple simultaneous ICH due to hypertension is uncommon [4]. Simultaneous

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hypertensive ICH in bilateral basal ganglia region has been rarely reported (see Table 1) [4–13]. Most reported cases accepted conservative treatment and got poor prognosis. We report a case with simultaneous hypertensive bilateral somewhat symmetrical hemorrhages within both basal ganglia treated by stereotactic aspiration surgery whose outcome was relatively good.

2. Case report

A 57-year-old male become unconscious when having supper, and was transported to our emergency room immediately. He had been suffering irregularly treated hypertension for 8 years, his medical history (diabetes mellitus, substance abuse, or trauma) is clear. The patient's pulse was 112 bpm and blood pressure was 195/102 mmHg; he had the Glasgow Coma Scale (GCS) of 5/15; pupils were 2 mm bilaterally, reacting to light; muscular spasticity was present and Babinski sign was positive bilaterally. Laboratory tests, including blood counts, bleeding and clotting times, PT, APTT, liver and renal function, were within normal range. Non-contract CT brain scanning (Fig. 1A) revealed bilateral somewhat symmetrical hyperdense lesions within both basal ganglia (about 50 min after accident, right side 27.4 ml, left side 16.2 ml). Patient was intubated and put on mechanical ventilation, and admitted to the Neurosurgical Intensive Care Unit. Bilateral Stereotactic CT guided aspiration was performed about 10 h after onset, leaving a hematoma-indwelling catheter each side. Intraoperative CT (Fig. 1B and C) revealed hematoma enlargement on the right side, and we firstly operated on the larger hematoma. Subsequent thrombolysis and clot aspiration were performed at the bedside with repeat CT scans to assess catheter placement and residual hematoma volume. His condition improved gradually, catheters were removed 7 days after surgery. A re-examination CT scan was performed on the 19th day post operation demonstrated complete resolution of both the hematomas (Fig. 1D). During the last follow-up, nearly 10 months after onset, the patient could chow and swallow food all by himself, the GCS score was 12/15, and muscle strength grades were 2, 4 and 3 for left limbs, right upper limb and right lower limb respectively. His GOSE (Extended Glasgow Outcome Scale) score was 4. The BI (Barthel Index) score was 30, as the patient got 10 points for controlling bowels and bladder, and 5 points for feeding and toilet use respectively.

3. Discussion

Simultaneous occurrence of multiple ICH in different arterial territories is not common, and simultaneous bilateral symmetrical basal ganglia hemorrhage due to hypertension is even

Table 1 – Cases of simultaneous bilateral hypertensive basal ganglia hemorrhage.

Author/year	Age/sex	BP history	Interval between onset and CT diagnosis	GCS at admission	Treatment	Outcome
Hickey et al., 1983 [5]	71, F	Long history	Patient was found on floor[a]	3	Conservative	Death at day 7
Kabuto et al., 1995 [6]	65, M	Long history, untreated	3 hours	3	Conservative	Death at day 4
Kohshi et al., 2000 [7]	76, F	Long history	2 h	NA	Conservative	Left hemiparesis but able to walk with a cane
Maurino et al., 2001 [8]	40, F	Hypertension history[a]	NA	NA	Conservative	Severe disability at month 3
Silliman et al., 2003 [9]	35, M	3 Years	8 h	5	Conservative	Death at day 10
Yen et al., 2005 [10]	49, M	Hypertension history[a]	Less than 6 h	3	Conservative	Death
Yen et al., 2005 [10]	64, M	Hypertension history[a]	Less than 6 h	6	Surgery for large hematoma	Death soon after surgery
Yen et al., 2005 [10]	55, M	Hypertension history[a]	Less than 6 h	3	Conservative	Death
Asimi et al., 2007 [13]	65, M	20 Years	NA	11	Conservative	Death at day 2
Terzi et al., 2010 [11]	63, M	3 Years	2 h	NA	Conservative	Be normal at day 45
Takeuchi et al., 2011 [4]	89, M	NA	Within a few hours	3	Conservative	Death
Takeuchi et al., 2011 [4]	59, M	Hypertension history[a]	Within a few hours	3	External drainage	Vegetable state
Takeuchi et al., 2011 [4]	57, M	Hypertension history[a]	Within a few hours	7	Hematoma evacuation	Severe disability at discharge
Baldawa et al., 2015 [12]	60, M	Long history	Within a few hours	NA	Conservative	Vegetable state at discharge
Our case	57, M	8 Years	50 Min	5	Stereotactic evacuation and thrombolysis	Upper severe disability

BP: blood pressure, GCS: Glasgow Coma Scale, NA: outcome was not stated.
[a] Not specified.