Clinical Analysis of 39 cases of Hypertensive Thalamus Hemorrhage Ruptured into Ventricle Treated by Ventricular Drainage via Lateral Ventricle Frontal*

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ABSTRACT Objective: To investigate clinical effect of ventricular drainage via lateral ventricle frontal on treatment of hypertensive thalamus hemorrhage broken into cerebral ventricle. Methods: Thirty nine cases of hypertensive thalamus hemorrhage were treated by single or bilateral ventricular drainage via frontal horn of lateral ventricle. Results: 8 cases died (20.51%), 31 cases lived (79.49%). Evaluation of prognosis with ADL to 31 patients after three months, ADL Ⅰ～Ⅲ 23 cases (74.91%),ADL Ⅳ 7 cases (22.58%), ADL Ⅴ 1 case (3.23%). Conclusion: Ventricular drainage via lateral ventricle frontal was a simple, less trauma and effective method to treatment of hypertensive thalamus hemorrhage ruptured into ventricle.

Key words: Thalamus hemorrhage; Ventricles of brain; Ventricular Drainage via

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Introduction

Thalamus hemorrhage is the secondary part in hypertensive intracerebral hemorrhage (HICH)[1].It can rupture into ventricle and cause acute obstructive hydrocephalus. The acute obstructive hydrocephalus can cause cerebral hernia. So most cases of hypertensive thalamus ruptured into ventricle need be rescued in time. The fatality and deformity rate of conventional medical treatment is higher than others. Surgical treatment is also not an ideal treatment method because of its surgery traumas and complications [2]. It is an ideal treatment using the lateral ventricle Angle unilateral or bilateral puncture to treat 39 cases of hypertensive thalamus hemorrhage ruptured into ventricle in our department from January 2005 to December 2010.

1 Clinical data

1.1 General data

39 cases of hypertensive thalamus hemorrhage ruptured into ventricle in our department from January 2005 to December 2010. 22 cases were male, 17 cases were female. The patients were aged from 29 to 76 years old, with the mean age of 51 years old. With a headache, physical activity and soon appear to disorder of consciousness as the main performance. The patients were given assessment through physical examination and Glasgow coma scale (GCS). GCS: 3～5 points 7 cases, 6～8 points 17 cases, 9～12 points 8 cases. The patients were given craniocerebral CT examination. Coniglobus formula was used to assess hypertensive thalamus hemorrhage on CT. 10 cases less than 10 ml and 27 cases more than 10 ml. 15 cases had the unilateral lateral ventricle hematocele, 10 cases had pairs of side ventricles of the thalamus hemorrhage, 6 cases had the unilateral ventricle , the third ventricle and the fourth ventricle casting . The whole ventricles casting was 8 cases.

1.2 Therapeutic method

Ventricular drainage via single or opposite side frontal horn of lateral ventricle was used to treat the unilateral lateral ventricle hematocele patients. Ventricular drainage via bilateral frontal horn of lateral ventricle was used to treat pairs of side ventricles of the thalamus hemorrhage. Ventricular drainage via bilateral frontal horn of lateral ventricle was also used to treat the unilateral ventricle, the third ventricle and the fourth ventricle casting and the whole ventricles casting. Regular disinfection, local anesthesia, hole in the scalp, drilling cranial with rapid fine drill, drilling into kwire with inner diameter 3 mm head end had side holes silicon tube, puncture depth was 5 ~ 7 cm. Fixed the tube and connect a sterile drainage bag after the successful puncture. Put the negative pressure bottle above the lateral ventricle 10 ~ 15 cm level. 20000 U urokinase and 2 ml saline was injected into lateral ventricle, clipping pipe 2 ~ 4 hours and low drainage 1 or 2 times per day [3]. According to CT understand the hematoma in ventricle and the situation of cerebrospinal fluid circulation, whether to continue irrigation or the final drainage via lumbar puncture was decided. The time of drainage is usually no more than 7 days. Actively deal with symptoms, support treatment, prevention gastrointestinal bleeding and lung infection should be done after surgery.

1.3 Evaluation standard

I: The survival rate of patients , II: Activities of daily living (ADL) of patients after follow-up 3 months.

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2 Results

Hypertensive thalamus hemorrhage in 39 cases ruptured into ventricle, 8 cases died(20.51%).The GCSS of died cases were 3 to 5 points. Causes of death in patients: 5 cases died of the brain stem failure caused by cerebral hernia, 1 case died of lung infection, 1 case died of multiple organ failure (MOF). 1 case died of ventricle infection. 31 cases lived (79.49%). The prognosis of 31 alive patients after three months were evaluation with ADL, ADL Ⅰ～Ⅲ 23 cases (74.91%), ADL Ⅳ 7 cases (22.58%), ADL Ⅴ 1 case (3.23%). 2 lived cases with communicating hydrocephalus needed Ventriculo-peritoneal shunt. The complications of ventricular drainage via latericle frontal consist of 2 cases of ventricle infection (one died) and 3 cases of bleed again (2 cases with thalamus hemorrhage again ,one with Puncture way hemorrhage).

Typical case: Older men, with 5 years hypertension history. The complaints were sudden headache associated with consciousness obstacle and lack of left limbs activities for 3 hours. He was given brain CT examination and ventricular drainage via opposite side frontal horn of lateral ventricle. Finally, he got a recovery.

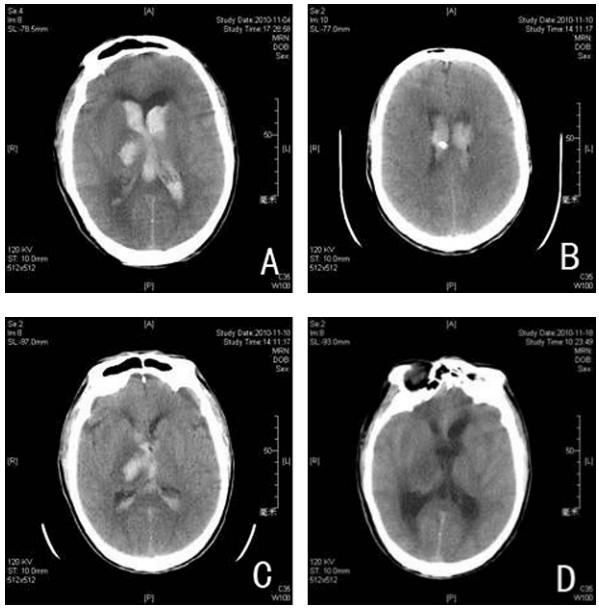

Fig. 1 Brain CT of the typical case

A, Brain CT showed that the right thalamus hemorrhage and the hematoma ruptured into ventricle after attacked three hours.

B, C The hematoma in thalamus has begun to be absorbed. 5 days after be given ventricular drainage via opposite side frontal horn of lateral ventricle.

D, There was no hematoma in lateral ventricle.2 weeks after operation.

3 Discussion

Hypertensive thalamus hemorrhage is the common cerebral hemorrhage in clinical. It accounts for 21% of hypertensive cerebral hemorrhage [4]. The incidence of thalamus hemorrhage was just less than Shell nuclear hemorrhage in basal ganglia hemorrhage. The range 40% to 70% of thalamus hemorrhage can rupture into cerebral ventricle. Because of the anatomical structure and the particularity of thalamus nerve function and the traditional concept and treatment, the mortality rate of hypertensive thalamus hemorrhage is always as high as 52% [5].

Liu AH confirmed that the mortality of hypertensive thalamus hemorrhage was higher than Shell nuclear hemorrhage and the cerebral cortex hemorrhage [6]. The mortality of hypertensive thalamus hemorrhage is greatly improved when hypertensive thalamus hemorrhage broken into cerebral ventricle even the hematoma was not big. The mortality of hypertensive thalamus hemorrhage broken into cerebral ventricle was as high as 53% [7].

Cerebrospinal fluid circulation access was blocked because of hypertensive thalamus hemorrhage broken into cerebral ventricle, the development of which can trigger acute obstructive hydrocephalus. Both local mass effect of the primary lesion of the hematoma and obstructive hydrocephalus increased intracranial pressure, and then cerebral hernia formed.

Because the thalamus position deep, the traditional craniotomy of hematoma clear operation had a big traumat and much complications so that this surgical method has rarely used in clinical. The mortality of drilling and drainage via lateral ventricle operation was lower than the traditional craniotomy of hematoma clear operation [8]. The research on 244 cases of thalamus hemorrhage used conservative treatment and 135 cases of thalamus hemorrhage used surgical treatment showed that there was no significant difference between conservative treatment and surgical treatment when the hematoma less than 10 ml [9].

The mortality of drilling and drainage via lateral ventricle operation was treated 39 cases of hypertensive thalamus hemorrhage ruptured into ventricle, and 8 cases were died(20.51%).The GCSS of 6 died cases from 3 to 5 points. According to the predecessor's research this study chose conservative treatment or stereotactic surgical treatment for the hypertensive thalamus hemorrhage patients without obstructive hydrocephalus or the hematoma less than 10ml and not ruptured into ventricle. In the contrary, the hypertensive thalamus hemorrhage patients, hecatoma large than 10ml or less than 10ml but ruptured into ventricle or had obstructive hydrocephalus should be treated by the mortality of drilling and drainage via lateral ventricle operation or stereotactic surgical treatment.

Xi G reported the operation time was very important for the hypertensive thalamus hemorrhage ruptured into ventricle patients. Spongiform degeneration, thanatosis, hemorrhage were found in brain tissue around the hematoma after 6h [10]. And then gave surgical treatment to the patients there were badly function and much sequelas. Ruth ' studies showed that surgical treatment was no profit for the hypertensive thalamus hemorrhage patients who older than 65 years [11]. The drilling and drainage via lateral ventricle operation had smaller traumas to older patients than other surgical methods.

The drilling and drainage via lateral ventricle operation had

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more advantages than other surgical methods, including the following, firstly, fast fine cranial drill is used during the operation make surgery operation simply, rapidly. It is good for doctors to rescue the patients with cerebral hernia [12]. And it can reduce the mortality of the hypertensive thalamus hemorrhage patients. Secondly, it can establish the bypass of cerebrospinal fluid circulation, drainage of the hemorrhagic cerebrospinal fluid in ventricle, prevent the obstructive hydrocephalus. Thirdly, it is a simple, less trauma and effective methods to treatment of the old patients with hypertensive thalamus hemorrhage ruptured into ventricle.

In short, ventricular drainage via lateral ventricle frontal is a simple, less trauma and effective methods to treatment of hypertensive thalamus hemorrhage ruptured into ventricle.

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侧脑室前角穿刺脑脊液外引流治疗高血压丘脑出血破入脑 39 例临床分析 *

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摘要 目的：探讨侧脑室前角穿刺脑脊液外引流治疗高血压丘脑出血破入脑室患者的临床效果。**方法：**回顾性分析 2005 年 1 月至 2010 年 12 月应用侧脑室前角单侧或双侧穿刺外脑脊液引流治疗 39 例高血压丘脑出血破入脑室患者的临床效果 (ADL 分级) 。**结果：**39 例高血压丘脑出血破入脑室患者死亡 8 例，占 20.51% ，存活者 31 例，占 79.49% 。对存活者随访 3 个月，按日常生活能力 (ADL) 分级，ADL1～3 级 23 例，占 74.19%，ADL4 级 7 例，占 22.58%，ADL5 级 1 例，占 3.23%。**结论：**侧脑室前角穿刺脑脊液外引流术治疗高血压丘脑出血破入脑室者是一种操作简单、损伤小、有效的治疗方法。

关键词：丘脑出血 脑室 外引流术

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