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Thalamic Hemorrhage (Presentation and Prognosis of Hemorrhages)

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Abstract: The thalamus is one of the most vulnerable areas for intracerebral hemorrhages. In this study, we investigated the parameters of thalamic hemorrhage such as risk factors, initial complaints, neurologic findings and the prognostic effects of the presence or absence of ventricular penetration, as well as the volume and size of hematoma. A total of 57 patients with thalamic hemorrhage, whose diagnosis was confirmed by cranial computerized tomography, were evaluated. The most significant risk factor was hypertension, while the most common initial clinic symptom was incontinence. Those patients who had small hemorrhagic size of low volume and the presence of ventricular penetration had better prognosis for the disease.

Key Words: Cerebrovascular disease, hypertension, thalamic hemorrhage, ventricular penetration, prognostic factors.

Introduction

Cerebrovascular diseases are the third most common cause of adult death in the world (1-7). Hemorrhagic events make up 15% of all stroke cases. The thalamus is one of the areas most affected by intracerebral hemorrhaging (1,3,4,6). Hypertension, diabetes mellitus as well as previous antiaggregant and anticoagulant usage, are some of the risk factors for thalamic hemorrhage. It is accepted that hypertension is the most important risk factor among all of them (1-8). In this study, we evaluated features of thalamic hemorrhage such as risk factors, clinical presentation and prognosis.

Materials and Methods

In this study, 57 patients with thalamic hemorrhage were evaluated between 1999 and 2001 prospectively. Diagnosis was confirmed by cranial computed tomography (CT). The patients were assessed in terms of demographic features, risk factors, histories, their initial symptoms (e.g. presence or absence of epilepsy, incontinence, hypertension, headache, nausea, vomiting, and speech disorder), clinical course and some laboratory parameters such as electrocardiographic alterations after stroke, bleeding volume, as well as the size and ventricular penetration of hematoma on CT. Those patients with a history of strokes were excluded. The Rankin Disability Score was used for clinical improvement.

Results

The present study included 57 patients (male: 25, female: 32) between 38 and 90 years of age. The study took of almost 2 years. One patient was younger than 40, two patients were between 40 and 50, 13 patients were between 50 and 60 and 41 patients were older than 60 years. Thirtyseven patients had previously established hypertension and 46 of them had histories of hypertension at the onset. Obesity was present in 22 of them. Five of the patients had DM, seven had cardiac diseases, three had histories of antiaggregate agent usage and two had histories of neurologic diseases present as risk factors (Table 1). After stroke, most of the patients had normal sinus rhhym on the electrocardiogram. In 34 patients there was ventricular penetration on the CT, while 21 of them were discharged from hospital with better clinical pictures.

On initial neurologic examinations, the pupils were isocoric and reactive to light in most of the patients. Again eye movements were free in 53% of them. Almost all of them had hemiparesis and 65% of them had speech disorders (Table 3).

Table 1. Distribution of risk factors in thalamic hemorrhagic patients

Risk Factors in 57 patients with thalamic hemorrhage	No. of cases (%)
Hypertension	37 (65%)
Obesity	22 (39%)
Cardiac Diseases	7 (12%)
Diabetes Mellitus	5 (9%)
Antiaggregate and Anticoagulant usage	3 (5%)

Table 2. Initial clinical symptoms of thalamic hemorrhagic patients

Initial Clinical Symptoms in 57 Patients	No. of cases (%)
Incontinence	46 (80%)
Nausea and Vomiting	44 (77%)
Speech Disorder	37 (65%)
Headache	16 (28%)

46 of them had incontinance, 16 had headache, 44 had nausea and vomiting, thirtyseven had speech disorder, and none of our cases had epilepsy (Table 2).

Table 3. Neurological examination and ocular findings in thalamic hemorrhagic patients.

Initial Neurologic Examinations in 57 Patients with Thalamic Hemorrhage	No. of cases (%)
Light Reaction	
Bilateral Positive	48 (84%)
Bilateral Decreased	4 (7%)
Bilateral Negative	5 (9%)
Pupils	
Isocoric	49 (85%)
Bilateral Myotic	5 (9%)
Dilate	2 (4%)
Unisocoric	1 (2%)
Eye Movements	
Free	30 (53%)
Midposition	4 (8%)
Deviated (right, left or downwards)	11 (19%)
Vertical Gaze Dysfunction	4 (8%)
Unevaluated	7 (12%)
Speech Disorder	
Positive	37 (65%)
Dysarthria: (n:29)	
Motor Aphasia: (n: 5)	
Sensorial Aphasia: (n: 3)	
Negative	14 (25%)
Unevaluated	6 (10%)
Hemiparesis	
Positive	52 (91%)
Negative	5 (9%)

Discussion

The thalamus is mainly supplied by the branches of the arteria comminicans posterior, the arteria basilaris and the arteria cerebri posterior (1,2), but the association between the structural properties for the vessels and the reasons of the frequency of the hemorrhage are not clear (1). Following the development of CT scanning, it was understood that thalamic hemorrhages were seen more than was considered. As yet, although various risk factors for thalamic hemorrhagia have been reported, HT is the most important in this group (1-8). We found that 65% of our patients had previously positive hypertension and there was high blood pressure in 84% of them during initial examinations. Although the importance of obesity in thalamic hemorrhages was reported in a few studies, we found that obesity was also another a significant risk factor after hypertension. Some 39% of our patients had obesity. DM (9%) and cardiac diseases (7%) were less frequent risk factors. As initial symptoms of our patients, incontinence was the most frequent and, subsequently, headache, nausea, vomiting and speech disorders were present. None of them had epilepsy at the onset. On admission to the hospital, 91% of our patients had contralateral hemiparesis and 35% of them had hemi hypoesthesia or anesthesia. This finding was in line with other studies (3-5). 65% of hemiparesis cases had speech disorders. Although it has been often reported that vertical gaze paralysis, skew deviations or lateral deviations are seen in thalamic hemorrhages, we only found vertical paralysis in 4 patients and lateral gaze paralysis in 7 patients. Light reactions were positive and pupils were isocoric in most of the patients in contrast to some of the literature sources. There were not apparent specific changes apart from hypertensive alterations on the electrocardiogram after stroke, with normal sinus rhthym being generally seen.

All of the patients were administered antiedemic (dexamethasone 16 mg/intravenous) and support therapy. In more than half of our patients (60%), there were ventricular penetrations and the prognosis of this group was better than the isolate hemorrhagic form. There are controversial opinions about this feature as to

whether it would have positive or negative effects on prognosis. Steinke et al. reported that the mortality of an intraventricular hemorrhagic group increased. Additionally, large volume, uncontrolled hypertension and grave initial neurological conditions are considered negative prognostic parameters.

In conclusion, although we did not make any statistical comparison associated with another group, we have interpreted that high and uncontrolled blood pressure is an important risk factor in line with previous studies. Obesity is another risk factor for the genesis of the illness. Regulation of these parameters should play an important role in the prevention of thalamic hemorrhage. Additionally, we considered that ventricular penetration, small size and the low volume of hematoma can be considered to be better prognostic factors.

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