RECOVERY FROM A LARGE PRIMARY PONTINE HEMORRHAGE

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ABSTRACT

Recovery from a large primary pontine hemorrhage is a very unusual condition. A 46-year-old man developed a sudden cerebrovascular attack resulting in tetraplegia. He had a large centrally located primary pontine hemorrhage with dimensions of 35,1 mm X 19.5 mm that was revealed by computerized tomography. He recovered almost totally. We always have to be aware of the level of consciousness while evaluating the prognosis of a primary pontine hemorrhage. By means of this case we propose a new insight for the prognostic evaluation of primary pontine hemorrhage.

Key Words: Computerized tomography, Primary pontine hemorrhage, Recovery

INTRODUCTION

Primary pontine hemorrhage (PPH) is a relatively rare condition compared with supratentorial cerebral hemorrhages. It is generally accepted that about 10-15 % of all cerebral hemorrhages occur in the pons. PPH is one of the most dramatic and least treatable of all brain hemorrhages (1). This concept has changed partly since new imaging technology has been widely used for the antemortem clinicopathologic correlation (2). Among imaging technics for the diagnosis of PPH, the computerized tomography (CT) scan occupies the foremost position (2-5). In this article, we report a patient with a very good outcome who had a large centrally located PPH with clinically fatal criteria at the beginning (1,4).

CASE REPORT

A 46-year-old man developed a sudden drop attack with a feeling of dizziness, which was followed by severe weakness of his all extremities. Approximately half an hour after the event, he was brought to the emergency department of our hospital. He had no memory loss, headache, fits, dysphagia, paraesthesia and sight or speech disturbance during the event. In physical examination, his blood pressure was 280/130 mmHg, pulse rate was 92 / min, temperature was 37,5 C° and no other abnormality was determined. In his neurologic examination, he had minimal confusion, total bilateral horizontal gaze paralysis, and tetraparasia of upper motor neuron type with left side predominance.

The CT scan demonstrated irregular contoured, large hematoma with a transverse diameter (side to side) of 35.1 mm and a longitudinal diameter (antero posterior) of 19.5 mm in the pons isthmus including bilateral tegmentobasilar parts, which narrowed cerebellomedullar, cerebellopontin cinsterns and fourth ventricle. He had also medium degree perifocal edema. (Fig. 1).

During his hospitalization, his blood pressure was reduced gradually. He was also treated with intravenous Dexamethasone 24 mg per day for cerebral edema which was tapered later on, besides supportive treatment and physical therapy. In the acute phase, the patient was hyperpneic with some short spells of apnea. A tracheotomy was performed on the fourth day of the attack to control ventilation, to relieve upper airway obstruction and to make aspiration easier. Horner syndrome, peripheric facial paralysis and trigeminal paralysis of the left side were added to the clinical picture on the fifth day and improved totally in three weeks. On the twenty-fifth day the tracheotomy was decannulated. Five weeks after the onset of his symptoms, bilateral horizontal gaze paralysis slightly improved, but bilateral rotatory nystagmus appeared. His muscle strenght gradually improved bilaterally but he was unable to walk without assistance until three months after the onset. On the thirty-seventh day of hospitalization, he was

discharged with medical recommendations. He was controlled monthly in the following six months and in every three months later on for three years. Hemorrhage was reabsorbed almost totally which was revealed by CT scan taken after two years and four months from the onset (Fig. 2). After three years, his neurologic examination showed bilateral occular bobbing, minimal spasticity of left leg. His gait was slightly ataxic. He had no weakness and he did not need help in his ambulatory activities. He returned to his previous occupation as a shoemaker at the end of first year. He is still working.

DISCUSSION

The concept that the prognosis of pontine hemorrhage cases is extremely poor (5), changed, because CT scanning has led to the discovery of small pontine hemotomas, Following a sudden onset, there is often an early coma with tetraplegia, decerebrate posture, respiratory disturbances, hyperthermia and pinpoint pupils. One of the important CT studies attempting to measure the size of the pontine hematoma is the study of Tanabe et al (6). Measurement of both transverse and longitudinal

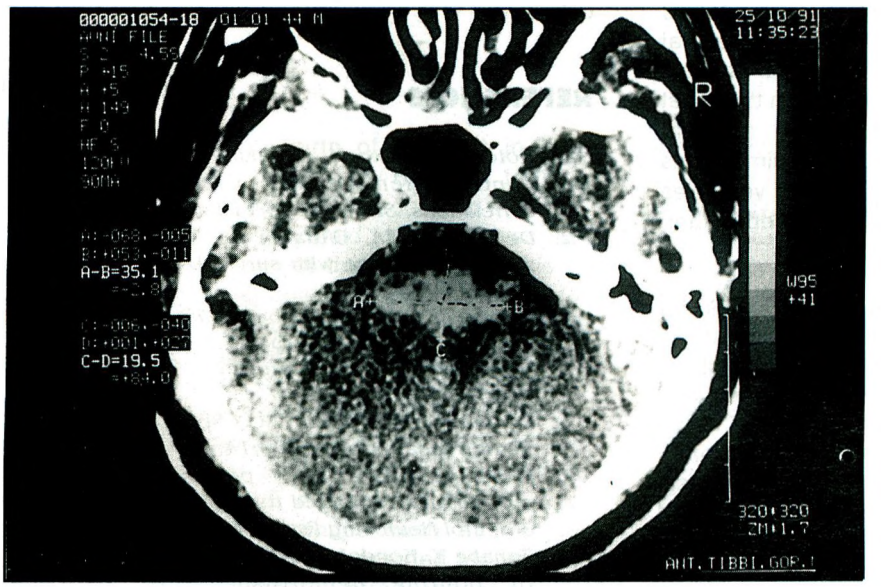

Fig. 1: CT scan taken after two hours from the onset.

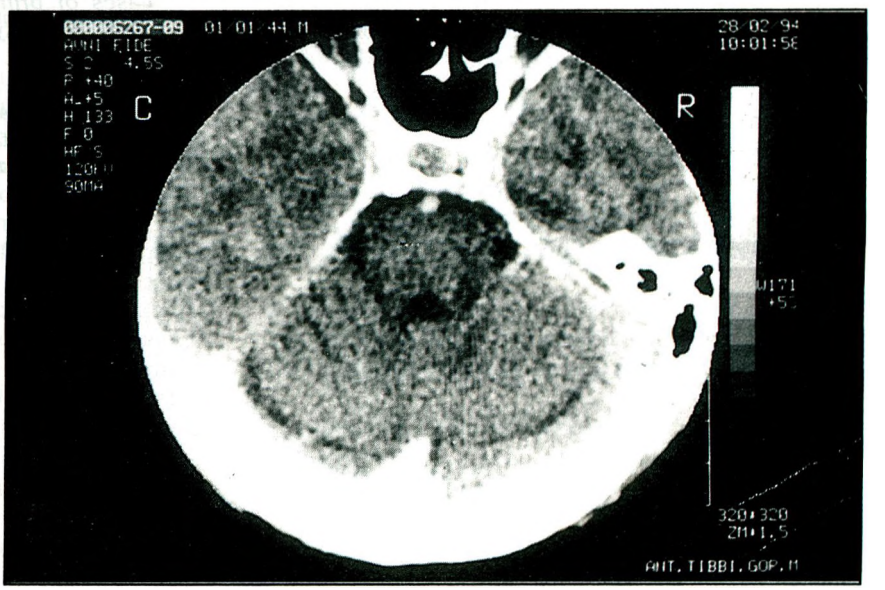

Fig. 2: CT scan taken after two years and four months from the onset.

diameters revealed that prognosis was correlated with transverse diameter. Among survivors, maximum transverse diameter was 31.5 mm or less, whereas most fatal cases had hematomas exceeding that size. Kuwabara et al reported that cases with maximum hematoma diameters of 20 mm or less and seen in three CT slices or less of 10 mm thickness have hematomas confined to the pons with favorable prognosis (7). Masiyama et al, also reported that most of the patients with poor prognosis had a transverse diameter of the hematoma over 20 mm and longitudinal diameter of the hematoma over 33 mm, but the good recovery occurred in the patients whose transverse diameter was less than 15 mm and longitudinal diameter was less than 24 mm (8). In the other PPH studies, patients who survived had preserved consciousness with small unilateral lesions. According to the results of clinical studies, good prognostic criteria for PPH cases from the onset are being normotensive, showing atypical progression of neurologic deficit, having dimensions smaller than 18 mm, not opening into the ventricles and having consciousness level not deeper than lethargy (5).

Here we have an interesting case which should be reported in the records of the world literature. Although he had the worst criteria at the onset of the event, he is still working in his job without any assistance. He had an acute onset of cranial nerve and long tract signs bilaterally, besides respiratory irregularities, sympathetic tract signs and his arousal and the content of consciousness were not disturbed which were referable to bilateral lesion in the tegmentobasilar parts of the pons with the preservation of ascending reticular activating substance. This location due to the clinical status was confirmed by the clinicopathological correlations of PPH, in the results of Goto et al's study (1). According to aforementioned prognostic criteria, he is incompatible with survival especially with these dimensions. He had the largest dimensions of PPH in the world literature who survived in a high medical quality.

This case showed us that, clinical management with close attention and medical therapy without surgical intervention, in contrast to the studies of neurosurgeons, can provide a good outcome of pontine hemorrhages with large dimensions.(9). The lesion did not extend to the mesencephalon, thalamus or ventricles. This is also important for the outcome as the lesion did not extend to such compartments. As a result, level of consciousness is important as the location, dimensions and the extension of the PPH in the prognosis and there are no exact rules to consider these, as prognostic criteria. Thus, we always have to be aware of the level of consciousness while evaluating the prognosis of a pontine hemorrhage case besides the other criteria.

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