



Hypertension Induced Posterior Reversible Encephalopathy Syndrome Causing Obstructive Hydrocephalus: Case Report and Literature Review

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Introduction

Obstructive hydrocephalus secondary to hypertension induced posterior reversible encephalopathy syndrome (PRES) is rare and only 15 cases were reported.

Methods

This 37-year-old male without previously known systemic disease presented with drowsy consciousness and persistent headache for three days. His blood pressure on arrival was 240/140mmHg. The Glasgow coma scale (GCS) was E3M6V4 and neurological examination showed no cranial nerve deficit, weakness or sensory impairment. Basic lab exam was normal except that creatinine was 2.4 mg/dL. Non-contrast brain computed tomography (CT) study revealed tight posterior fossa with obstructive hydrocephalus. Brain magnetic resonance imaging showed multiple T2 hyperintensity foci at bilateral basal ganglia, posterior thalamus, centrum semiovale, pons, bilateral cerebellar white matters, and the left temporal white matter. Hypertensive induced PRES was favored and he underwent emergent external ventricular drainage (EVD) for obstructive hydrocephalus causing drowsy consciousness.

Results

His GCS improved to full and headache subsided after the operation. Aggressive blood pressure control was kept and the cerebrospinal fluid (CSF) drainage amount decreased gradually. The EVD was removed smoothly on post-operative day 5. During admission, causes of secondary hypertension were excluded after complete survey. Brain MRI was repeated two weeks later and revealed complete resolution of both brain edema and obstructive hydrocephalus.

Conclusions

Hypertensive induced posterior reversible encephalopathy syndrome is a rare but potential life-threatening disease if the diagnosis is delayed. It usually presented as headache, altered mental status, seizures, and visual disturbance. About half of the patients who complicated with obstructive hydrocephalus had deterioration of consciousness, and temporary EVD is recommended because of its reverse etiology, intracranial pressure (ICP) monitoring and diagnostic CSF study. Aggressive blood pressure control reverses the encephalopathy and subsequently relieves obstructive hydrocephalus. In addition, survey the etiology of secondary hypertension is crucial.

Learning Objectives

By the conclusion of this session, participants should be able to: 1) diagnose obstructive hydrocephalus secondary to PRES, 2) Know the management of obstructive hydrocephalus due to hypertension induced PRES

References

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