CNS 2016 ANNUAL MEETING
San Diego CALIFORNIA
SEPTEMBER 24-28, 2016

Angionegative Subarachnoid Hemorrhage: Clinical Characteristics, Radiological Features and Predictors of Outcome

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Introduction

The authors analyzed radiographic details of angionegative subarachnoid hemorrhage (anSAH) in correlation with clinical outcomes and vasospasm variables such as incidence, severity and temporality to identify any potential correlation.

Methods

All anSAH patients treated between 2008 and 2014 were identified from a retrospective database and data was retrospectively collected for analysis. The variables analyzed included fisher grade and pattern of hemorrhage on CT scan, incidence of clinical and radiographic vasospasm on repeat angiogram along with demographic factors, clinical outcomes, length of hospital stay and need for subsequent ventriculoperitoneal shunting.

Results

A total of 76 patients with angionegative SAH were treated over five years. All patients underwent a repeat angiogram at about one week after the initial negative angiogram. A total of five patients (6.5 %) demonstrated radiographic vasospasm during the hospital stay and one patient (1.3%) developed vasospasm in a delayed manner two weeks later. Of this cohort of six patients developing vasospasm (all fisher grade 3), five patients demonstrated diffuse SAH pattern and one had a limited perimesencephalic pattern. A total of six patients developed hydrocephalus necessitating ventriculoperitoneal shunt procedure, of which only two patients had sustained vasospasm.

Conclusions

The incidence of clinically relevant vasospasm is quite low in patients with angio negative SAH. In contrast to perimesencephalic SAH, angiogram negative diffuse SAH correlates to higher incidence of vasospasm, critical clinical course, need for ventriculoperitoneal shunting – necessitating closer clinical monitoring.

Learning Objectives

To describe characteristics of anSAH that need closer monitoring.

Describe radiological features of anSAH that have a higher risk of vasospasm.

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